Multifunctional Acrylate and Methacrylate Monomers and Oligomers from South Korea and Taiwan

Investigation Nos. 701-TA-759 and 731-TA-1740–1741(Preliminary)

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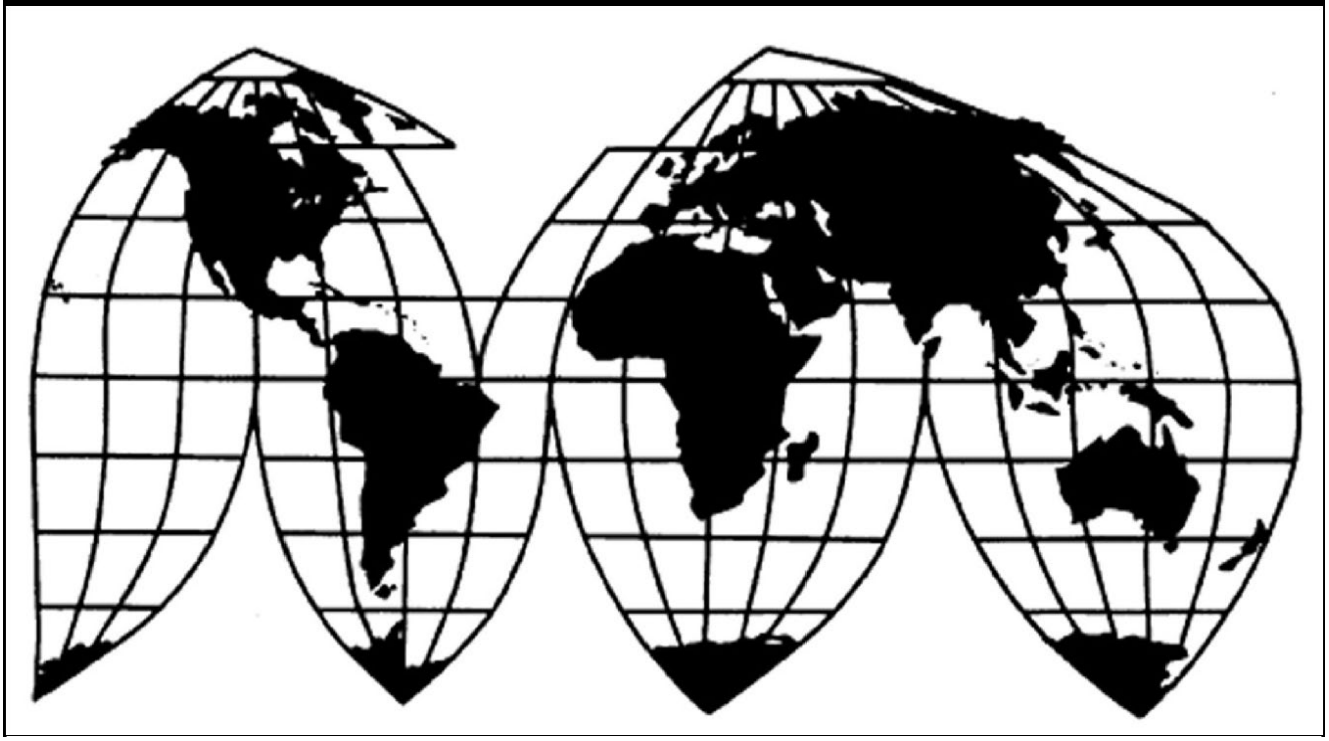

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U.S. International Trade Commission

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Note.—Information that would reveal confidential operations of individual firms may not be published.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-759 and 731-TA-1740–1741 (Preliminary)

Multifunctional Acrylate and Methacrylate Monomers and Oligomers from South Korea and Taiwan

DETERMINATIONS

On the basis of the record[1] developed in the subject investigations, the United States International Trade Commission ("Commission") determines, pursuant to the Tariff Act of 1930 ("the Act"), that there is a reasonable indication that an industry in the United States is materially injured by reason of imports of multifunctional acrylate and methacrylate monomers and oligomers ("MAMMOs") from South Korea and Taiwan, provided for in subheadings 2916.12.5050, 2916.14.2050, 3824.99.2900, 3907.29.0000 and 3907.30.0000 of the Harmonized Tariff Schedule of the United States, that are alleged to be sold in the United States at less than fair value ("LTFV") and imports of the subject merchandise from Taiwan that are alleged to be subsidized by the government of Taiwan.[2]

COMMENCEMENT OF FINAL PHASE INVESTIGATIONS

Pursuant to section 207.18 of the Commission's rules, the Commission also gives notice of the commencement of the final phase of its investigations. The Commission will issue a final phase notice of scheduling, which will be published in the *Federal Register* as provided in § 207.21 of the Commission's rules, upon notice from the U.S. Department of Commerce ("Commerce") of affirmative preliminary determinations in the investigations under §§ 703(b) or 733(b) of the Act, or, if the preliminary determinations are negative, upon notice of affirmative final determinations in those investigations under §§ 705(a) or 735(a) of the Act. Parties that filed entries of appearance in the preliminary phase of the investigations need not enter a separate appearance for the final phase of the investigations. Any other party may file an entry of appearance for the final phase of the investigations after publication of the final phase notice of scheduling. Industrial users, and, if the merchandise under investigation is sold

[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 17032 and 17044, April 23, 2025.

at the retail level, representative consumer organizations have the right to appear as parties in Commission antidumping and countervailing duty investigations. The Secretary will prepare a public service list containing the names and addresses of all persons, or their representatives, who are parties to the investigations. As provided in section 207.20 of the Commission's rules, the Director of the Office of Investigations will circulate draft questionnaires for the final phase of the investigations to parties to the investigations, placing copies on the Commission's Electronic Document Information System (EDIS, https://edis.usitc.gov), for comment.

BACKGROUND

On March 27, 2025, Arkema, Inc., King of Prussia, Pennsylvania filed petitions with the Commission and Commerce, alleging that an industry in the United States is materially injured or threatened with material injury by reason of subsidized imports of MAMMOs from Taiwan and LTFV imports of MAMMOs from South Korea and Taiwan. Accordingly, effective March 27, 2025, the Commission instituted countervailing duty investigation No. 701-TA-759 and antidumping duty investigation Nos. 731-TA-1740–1741 (Preliminary).

Notice of the institution of the Commission's investigations and of a public conference to be held in connection therewith was given by posting copies of the notice in the Office of the Secretary, U.S. International Trade Commission, Washington, DC, and by publishing the notice in the *Federal Register* of April 2, 2025 (90 FR 14475). The Commission conducted its conference on April 17, 2025. All persons who requested the opportunity were permitted to participate.

Views of the Commission

Based on the record in the preliminary phase of these investigations, we determine that there is a reasonable indication that an industry in the United States is materially injured by reason of imports of multifunctional acrylate and methacrylate monomers, and acrylated bisphenol-A epoxy based oligomers ("MAMMOs") from South Korea and Taiwan that are allegedly sold in the United States at less than fair value and imports of MAMMOs from Taiwan that are allegedly subsidized by the government of Taiwan.

I. The Legal Standard for Preliminary Determinations

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

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

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

II. Background

The petitions in these investigations were filed on March 27, 2025, by Arkema Inc. ("Arkema," or "Petitioner"), a U.S. producer of MAMMOs. Petitioner appeared at the staff conference accompanied by counsel and submitted a postconference brief. Representatives of a second U.S. producer, Allnex, USA ("Allnex"), also appeared and gave testimony at the staff conference. No respondent entities appeared in the preliminary phase of these investigations or otherwise participated.

U.S. industry data are based on the questionnaire responses of two domestic producers that accounted for all U.S. production of MAMMOs in 2024.[3] U.S. import data are based on the questionnaire responses of 17 U.S. importers that accounted for an estimated *** percent of subject imports from South Korea and Taiwan and *** percent of U.S. imports from all sources in 2024.[4] The Commission received a response to its questionnaires from one producer/exporter of subject merchandise in South Korea, whose exports accounted for *** percent of subject imports from South Korea in 2024.[5] The Commission also received four responses from producers/exporters of subject merchandise in Taiwan that collectively accounted for an estimated *** percent of MAMMOs production in Taiwan in 2024.[6]

[3] Confidential Staff Report ("CR"), INV-XX-056 (May 5, 2025) *as modified by Revision to the Staff Report,* INV-XX-061 (May 8, 2025) at 1.4; *Multifunctional Acrylate and Methacrylate Monomers and Oligomers from South Korea and Taiwan,* Inv. Nos. 701-TA-759 and 731-TA-1740-1741 (Preliminary), USITC Pub. 5625 (May 2025) ("PR") at 1.4.

[4] CR/PR at 4.1 and n.2.

[5] CR/PR at 7.3, Table 7.1. For this calculation, U.S. imports are based on questionnaire data. The South Korean firm did not estimate its share of overall MAMMOs production in South Korea. *Id.*

[6] CR/PR at 7.3, Table 7.1. Reported exports from these four firms accounted for *** percent of U.S. imports from Taiwan in 2024 based on U.S. importer questionnaires.

III. Domestic Like Product

In determining whether there is a reasonable indication that an industry in the United States is materially injured or threatened with material injury by reason of imports of the subject merchandise, the Commission first defines the "domestic like product" and the "industry."[7] Section 771(4)(A) of the Tariff Act of 1930, as amended ("the Tariff Act"), defines the relevant domestic industry as the "producers as a whole of a domestic like product, or those producers whose collective output of a domestic like product constitutes a major proportion of the total domestic production of the product."[8] 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."[9]

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.[10] 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."[11] The Commission then defines the domestic like product

[7] 19 U.S.C. § 1677(4)(A).

[8] 19 U.S.C. § 1677(4)(A).

[9] 19 U.S.C. § 1677(10).

[10] 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).

[11] *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).

in light of the imported articles Commerce has identified.[12] The decision regarding the appropriate domestic like product(s) in an investigation is a factual determination, and the Commission has applied the statutory standard of "like" or "most similar in characteristics and uses" on a case-by-case basis.[13] No single factor is dispositive, and the Commission may consider other factors it deems relevant based on the facts of a particular investigation.[14] The Commission looks for clear dividing lines among possible like products and disregards minor variations.[15] The Commission may, where appropriate, include domestic articles in the domestic like product in addition to those described in the scope.[16]

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[12] *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).

[13] *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).

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

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

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

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

> The products subject to these investigations are certain multifunctional acrylate and methacrylate monomers, and acrylated bisphenol-A epoxy based oligomers (collectively, certain monomers and oligomers or CMOs) that are derived from chemical reactions involving the use of acrylic or methacrylic acid. Products within the scope are listed below and have the following Chemical Abstracts Service (CAS) numbers:

CAS Number	Description	Molecular Formula
109-16-0	Triethylene glycol dimethacrylate (TEGDMA)	$C_{14}H_{22}O_6$
13048-33-4	1,6-hexanediol diacrylate (HDDA)	$C_{12}H_{18}O_4$
42978-66-5	Tripropylene glycol diacrylate (TPGDA)	$C_{15}H_{24}O_6$
3290-92-4	Trimethylolpropane trimethacrylate (TMPTMA)	$C_{18}H_{26}O_6$
15625-89-5	Trimethylolpropane triacrylate (TMPTA)	$C_{15}H_{20}O_6$
28961-43-5	Ethoxylated trimethylol-propane triacrylate (EOTMPTA)	$(C_2H_4O)_n(C_2H_4O)_n(C_2H_4O)_nC_{15}H_{20}O_6$
57472-68-1	Dipropylene glycol diacrylate (DPGDA)	$C_{12}H_{18}O_5$
55818-57-0	Bisphenol-A-epichlorohydrin copolymer acrylate (EPOXY ACRYLATE)	$(C_{15}H_{16}O_2.C_3H_5ClO)_x.xC_3H_4O_2$

> The monomers are generally known as multifunctional acrylates (MFAs) or multifunctional methacrylates (MFMAs) depending on whether the functional groups are acrylate or methacrylate. The monomers generally contain stabilizers/inhibitors, which include but are not limited to Hydroquinone, Methyl Hydroquinone, and Butylated Hydroxy Toluene. The monomers are either difunctional or trifunctional (having 2 or 3 functional groups/molecule), have viscosities of 9 to 15 centipoise (cPs) at 25 degrees Celsius (if difunctional) or 44 to 110 cPs at 25 degrees Celsius (if trifunctional), have (meth) acrylate equivalent weights (molecular weight per number of functional groups) between 99 and 158 and molecular weights between 226 and 472 grams per mol.
>
> The acrylated bisphenol-A epoxy based oligomer is commonly referred to as epoxy acrylate or acrylated epoxy. In contrast to epoxy resin, the main

characteristic of the epoxy acrylate oligomer is that it contains acrylate functional groups which make them curable by free-radical polymerization. The epoxy acrylate has a molecular weight between 508 to 536 grams per mol and a viscosity of 2400 to 3600 cPs at 65 degrees Celsius. The epoxy acrylate generally contains stabilizers/inhibitors, which include but are not limited to Hydroquinone, Methyl Hydroquinone, and Butylated Hydroxy Toluene.

Certain monomers and oligomers are subject to the scope even if an in-scope monomer or oligomer is blended or mixed with one or more other in-scope monomers or oligomers.

Certain monomers and oligomers in any blend or mixture are also subject to the scope, so long as the blend or mixture contains no less than 20 percent by weight of in-scope CMOs.

The scope includes merchandise matching the above description that has been processed in a third country, including by commingling, diluting, introducing, or removing ingredients, or performing any other processing that would not otherwise remove the merchandise from the scope of the investigations if performed in the subject country.

The scope also includes CMOs that are commingled, mixed or blended with in-scope product from sources not subject to these investigations.

Only the subject component(s) of such blends, mixtures or commingled products described above is covered by the scope of these investigations. Subject merchandise contained in a blended, mixed or commingled product described above will not have undergone a chemical reaction as a result of being blended, mixed or commingled.

Notwithstanding the above, specifically excluded from the scope are downstream products, including but not limited to, inks, coatings and overprint varnishes. For purposes of this exclusion, the downstream product requires only the application of energy to be cured, e.g., inks or varnish applied to packaging, coatings applied to wood flooring, etc. The energy source required to cure the downstream product to its substrate can be thermal, ultraviolet radiation, visible light, electron beam radiation, or infrared radiation.[17]

[17] *Certain Monomers and Oligomers From the Republic of Korea and Taiwan: Initiation of Less-Than-Fair-Value Investigations,* 90 Fed. Reg. 17044 (Apr. 23, 2025); *Certain Monomers and Oligomers From Taiwan: Initiation of Countervailing Duty Investigation,* 90 Fed. Reg. 17032 (Apr. 23, 2025).

MAMMOs are curable resins, existing in liquid form at room temperature with low to clear color, that provide durability, scratch resistance, and chemical resistance to the downstream products in which they are used as a base chemical input.[18] Downstream producers, commonly known as formulators, use MAMMOs to produce curable products such as inks, overprint varnishes ("OPV"), and coatings, such as those used for wood flooring or food packaging.[19] These downstream products are primarily cured with ultraviolet radiation.[20] MAMMOs are typically sold as standalone chemical products (neat) but are also sold in blends that achieve certain performance characteristics. Without the addition of other inputs, MAMMOs are not ready to be cured.[21]

All MAMMOs are derived from chemical reactions involving the use of acrylate or methacrylate acid, catalysts, stabilizers, and inhibitors.[22] For monomers, acrylic or methacrylic acid is combined with an alcohol and the resulting esterification reaction results in water as a byproduct. To produce epoxy acrylate, one of the in-scope MAMMOs, (meth)acrylic acid is combined with a bisphenol A-based epoxy resin.[23] Unlike the production process for the other

[18] CR/PR at 1.9–12.

[19] CR/PR at 1.4, 1.11, 2.1.

[20] Conf. Tr. at 42 (Crans). "Curing" refers to the process of bonding the end-use product to a surface. *Id.*

[21] Conf. Tr. at 17 (Crans).

[22] CR/PR at 1.15; Conf. Tr. at 5 (Mintzer). The lone in-scope "oligomer" is bisphenol-A epichlorohydrin copolymer acrylate, also known as epoxy acrylate. An oligomer is a molecule that consists of a few repeating units which could be derived from smaller molecules, *i.e.,* monomers. Petitioner explains that market participants refer to epoxy acrylate as an oligomer even though it does not contain the repeating monomer units that meet the textbook definition of an "oligomer," although it is derived from monomers. Petition at I-7 n.9.

[23] Conf. Tr. at 68 (Klang).

MAMMOs, the epoxy acrylate production process does not involve esterification, so no water is generated as a byproduct and no further processing is required after the reaction stage.[24]

A. Arguments of the Parties

Petitioner argues that the Commission should define a single domestic like product consisting of MAMMOs, coextensive with Commerce's scope.[25]

B. Analysis and Conclusion

Based on the record in these preliminary phase investigations, we define a single domestic like product consisting of MAMMOs, coextensive with Commerce's scope.

Physical Characteristics and Uses. The record indicates that all domestically produced MAMMOs within the scope are derived from chemical reactions involving the same raw materials, acrylate or methacrylate acid.[26] All MAMMOs possess properties that make them reactive to the application of energy and enable the production of highly durable and resistant downstream products.[27] Because of the similar physical properties that they impart, MAMMOs are used by formulators to produce similar types of downstream products, including radiation-curable inks, OPVs, and coatings.[28]

While the scope encompasses a set of eight chemicals, as well as blends of the chemicals, in-scope MAMMOs appear to represent a continuum of related products, each possessing different performance characteristics in addition to their common properties that impart durability, scratch, and chemical resistance to downstream products. For instance,

[24] CR/PR at 1.17.
[25] Arkema Postconf. Br. at 3-4.
[26] Conf. Tr. at 5 (Mintzer).
[27] CR/PR at 1.12.
[28] CR/PR at 1.12.

trimethylolpropane triacrylate ("TMPTA") imparts more rapid curing; 1,6-hexanediol diacrylate ("HDDA") imparts greater adhesion; and the "oligomer," epoxy acrylate, is considered to impart greater flexibility, hardness, non-yellowing properties, and adhesiveness.[29]

Manufacturing Facilities, Production Processes and Employees. The record indicates that all domestically produced MAMMOs are produced through a chemical reaction using acrylate and methacrylate acid, catalysts, stabilizers, and inhibitors.[30] The primary difference between the production of in-scope epoxy acrylate and in-scope monomers is that epoxy acrylate does not result in water as a byproduct.[31]

Representatives for Arkema testified that MAMMOs are produced in the same manufacturing facilities and that the same employees typically work on both the oligomer and monomer production lines.[32] Allnex, however, produces monomers in a separate facility

[29] CR/PR at 1.12-13. Arkema provided technical data sheets for each of the eight in-scope MAMMOs products and these sheets indicate that the products overlap in terms of performance properties and suggested applications. For instance, the ***. *See* Petition at Exh. I-3.

[30] CR/PR at 1.15; Conf. Tr. at 14 (Crans).

[31] Conf. Tr. at 66-67 (Klang).

[32] Conf. Tr. at 14 (Crans).

from the one it uses to produce epoxy acrylate.[33] The record indicates that all MAMMOs are made in relatively large batch sizes.[34]

Channels of Distribution. U.S. producers primarily sell MAMMOs to formulators and other ends users, with the remainder sold to distributors.[35]

Interchangeability. The record indicates that MAMMOs are used as components in the same types of end use products.[36] Although they comprise a range of chemicals, because they are similar products that impart similar characteristics, they can be used interchangeably in many applications.[37] The record indicates that formulators select one or more of them to meet their desired performance characteristics for a given product and commonly blend the individual MAMMOs at their facilities.[38]

Producer and Customer Perceptions. Petitioner asserts that customers and producers view MAMMOs as a single product category and there is no contrary evidence on the current record.[39] According to Petitioner, customers refer to blends of oligomers and monomers as "oligomers," even though the blends frequently contain monomers.[40]

[33] Conf. Tr. at 34-35, 74 (McClung). Allnex reports that in a third, smaller facility, it produces exclusively out-of-scope specialty monomers and oligomers in smaller batches. *Id.* at 35.

[34] Arkema Postconf. Br. at 5, 8; Conf. Tr. at 21 (McClung).

[35] CR/PR at Table 2.1; Conf. Tr. at 19 (McClung), 41 (Crans); Arkema Postconf. Br. at 4.

[36] Arkema Postconf. Br. at 3-4.

[37] *See e.g.,* Petition at Exh. I-3 (***).

[38] Conf. Tr. at 43-44 (Mintzer).

[39] Arkema Postconf. Br. at 5.

[40] Arkema Postconf. Br. at 5.

Price. The pricing data indicate that prices for different MAMMO products generally fell within a similar range during the January 2022 to December 2024 period of investigation ("POI").[41]

Conclusion. All domestically produced MAMMOs within the scope are produced from the same base chemicals through similar production processes. Because of the similar physical properties that they impart, all MAMMOs are used by formulators to produce similar types of downstream products, including radiation-curable inks, OPVs, and coatings. The record indicates that all MAMMOs are sold in the same channels of distribution, are perceived to be a single product category by market participants, and are sold within the same general range of prices. While the scope encompasses a range of eight chemicals, these in-scope chemicals appear to represent a continuum of products with no clear dividing lines separating them, with each chemical possessing unique performance characteristics in addition to the properties common to all MAMMOs that impart durability, scratch, and chemical resistance. Indeed, different MAMMOs are commonly blended together by the U.S. producers and their customers to achieve the desired performance characteristics.[42]

For these reasons, and in the absence of party argument to the contrary, we define a single domestic like product consisting of all MAMMOs, coextensive with Commerce's scope.[43]

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[41] CR/PR at Tables 5.3 – 5.6.

[42] Conf. Tr. at 45-46 (McClung), 49 (Mintzer).

[43] Although U.S. producers of MAMMOs also manufacture out-of-scope "specialty" monomers and oligomers, the record indicates that the out-of-scope products have different physical properties, including functional grouping, viscosity, and molecular weight, and are used in different end-use applications. CR/PR at 1.14, Table 3.9; Arkema Postconf. Br. at 6. Petitioner asserts that "specialty" out-of-scope monomers and oligomers are not interchangeable with the in-scope MAMMOs because the out-of-scope products contain different chemicals, are produced with tighter production tolerances, and have more exacting raw material sourcing requirements. Arkema Postconf. Br. at 7, 9 *citing* Conf. Tr. at

(Continued…)

IV. Domestic Industry

The domestic industry is defined as the domestic "producers as a whole of a domestic like product, or those producers whose collective output of a domestic like product constitutes a major proportion of the total domestic production of the product."[44] 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.

There are no related parties or other domestic industry issues in the preliminary phase of these investigations.[45] Accordingly, consistent with our definition of the domestic like product, we define the domestic industry to include all U.S. producers of MAMMOs.

V. Negligible Imports

Pursuant to Section 771(24) of the Tariff Act, imports from a subject country of merchandise corresponding to a domestic like product that account for less than 3 percent of

20-21 (McClung). Petitioner asserts that out-of-scope products are sold at higher prices and perceived to be different products than in-scope MAMMOs. Arkema Postconf. Br. at 9; Conf. Tr. at 15 (Crans). Accordingly, in the absence of any contrary argument, the record in the preliminary phase of these investigations did not warrant considering inclusion of these products in the domestic like product definition. We remind the parties to indicate in their comments on the draft questionnaires in any final phase of the investigations whether they intend to raise a domestic like product argument, including the proposed definition of the domestic like product, or for us to consider a further like product, and the grounds for such an argument. 19 C.F.R. § 207.20(b).

[44] 19 U.S.C. § 1677(4)(A).

[45] Although IGM Resins Inc. ("IGM Resins"), a former U.S. producer of MAMMOs, qualifies for possible exclusion under the related parties provision as an importer of subject merchandise, it did not submit a questionnaire response in these preliminary phase investigations, meaning that there is no information on the record concerning its domestic production operations that could be excluded from domestic industry data. Petition at I-26; ***'s Foreign Producer Questionnaire at I-7 (indicating that ***). Accordingly, the Commission need not determine the related party status of IGM Resins or whether appropriate circumstances exist for its exclusion for purposes of these preliminary phase investigations.

all such merchandise imported into the United States during the most recent 12 months for which data are available preceding the filing of the petition shall be deemed negligible.[46]

During the 12-month period preceding the filing of the petitions (March 2024 through February 2025), imports of MAMMOs from South Korea accounted for *** percent of total imports and imports of MAMMOs from Taiwan accounted for *** percent of total imports.[47] Because subject imports from each subject country exceed the three percent negligibility threshold, we find that imports from South Korea and Taiwan subject to the antidumping duty investigations and imports from Taiwan subject to the countervailing duty investigation are not negligible.

VI. Cumulation

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

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

[46] 19 U.S.C. §§ 1671b(a), 1673b(a), 1677(24)(A)(i), 1677(24)(B); *see also* 15 C.F.R. § 2013.1 (developing countries for purposes of 19 U.S.C. § 1677(36)).

[47] CR/PR at 4.7. The volumes of subject imports in the antidumping and countervailing investigations concerning MAMMOs from Taiwan are the same.

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

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

(4) whether the subject imports are simultaneously present in the market.[48]

While no single factor is necessarily determinative, and the list of factors is not exhaustive, these factors are intended to provide the Commission with a framework for determining whether the subject imports compete with each other and with the domestic like product.[49] Only a "reasonable overlap" of competition is required.[50]

A. Arguments of the Parties

Petitioner argues that the statutory criteria for cumulation are met because the petitions for South Korea and Taiwan were filed on the same day and there is a reasonable overlap of competition between and among the subject imports and the domestic like product.[51] It contends that domestically produced MAMMOs and subject imports from South Korea and Taiwan are fungible, as they are "off-the-shelf" products that formulators may use interchangeably, regardless of source.[52] Petitioner argues that MAMMOs from all sources share the same channels of distribution in that they are all sold to formulators or distributors.

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

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

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

[51] Arkema Postconf. Br. at 19.

[52] Arkema Postconf. Br. at 20.

It also argues that subject imports and the domestic like product were simultaneously present in the U.S. market throughout the POI, as the pricing data show sales of subject imports from South Korea and Taiwan, as well as the domestic like product, in every quarter of the period.[53] Finally, with respect to geographic overlap, Petitioner asserts that subject imports and the domestic like product were sold in every region of the continental United States during the POI.[54]

B. Analysis and Conclusion

We consider subject imports from South Korea and Taiwan on a cumulated basis for our present material injury analysis because the statutory criteria for cumulation appear to be satisfied. As an initial matter, Petitioner filed the antidumping and countervailing duty petitions with respect to South Korea and Taiwan on the same day, March 27, 2025.[55] As discussed below, the record also indicates that there is a reasonable overlap of competition between and among MAMMOs imported from South Korea and Taiwan, and the domestic like product.

Fungibility. The record indicates that the domestic like product and MAMMOs from each subject source are fungible. *** responding U.S. producers reported that domestically produced MAMMOs and MAMMOs imported from South Korea and Taiwan are always interchangeable.[56] In addition, almost all responding U.S. importers reported that MAMMOs from all sources were always or frequently interchangeable.[57]

[53] Petitioner's Postconf. Br. at 21.
[54] Petitioner's Postconf. Br. at 20-21.
[55] None of the statutory exceptions to cumulation apply.
[56] CR/PR at Table 2.6.
[57] CR/PR at Table 2.7.

In 2024, domestically produced MAMMOs and imports from each subject source overlapped in terms of product type. A majority of U.S. shipments of MAMMOs from the domestic producers and South Korea and almost half from Taiwan were sold neat.[58] Additionally, the Commission's pricing data indicates that there was head-to-head competition for sales of all four pricing products between the domestic like product and subject imports from each source.[59]

Channels of Distribution. From 2022 to 2024, domestically produced MAMMOs and subject imports from South Korea and Taiwan were sold primarily to end users other than ink manufacturers, with smaller shares of MAMMOs from both domestic and subject sources sold to ink manufacturers, followed by distributors.[60]

Geographic Overlap. U.S. producers and importers of subject merchandise reported selling MAMMOs to all regions in the continental United States.[61] Official import statistics indicate that subject imports from South Korea and Taiwan entered the United States through ports in all four regions of the United States in 2024, with most subject imports from both sources entering though the Eastern or Northern borders of entry.[62]

Simultaneous Presence in Market. Based on official import statistics, subject imports from South Korea and Taiwan were present in the U.S. market during each of the 36 months of the POI.[63] Additionally, the Commission's quarterly pricing data indicate that domestically

[58] CR/PR at Table 4.6.
[59] *See* CR/PR at Tables 5.4 – 5.7.
[60] CR/PR at Table 2.1
[61] *See* CR/PR at Table 2.2.
[62] CR/PR at Table 4.7. Official import statistics may include out-of-scope products. *Id.*
[63] CR/PR at Table 4.8.

produced MAMMOs and imports from each subject source were sold in the U.S. market during *** of the POI.[64]

Conclusion. The record of the preliminary phase of these investigations indicates that subject imports from South Korea and Taiwan are fungible with the domestic like product and each other. It also indicates that imports from each subject country and the domestic like product were sold in overlapping channels of distribution and geographic markets and were simultaneously present in the U.S. market throughout the POI. Because there is a reasonable overlap of competition between and among imports from South Korea, Taiwan, and the domestic like product, we consider subject imports from South Korea and Taiwan on a cumulated basis for our analysis of whether there is a reasonable indication of material injury by reason of subject imports.

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

A. Legal Standard

In the preliminary phase of antidumping and countervailing duty investigations, the Commission determines whether there is a reasonable indication that an industry in the United States is materially injured or threatened with material injury by reason of the imports under investigation.[65] In making this determination, the Commission must consider the volume of subject imports, their effect on prices for the domestic like product, and their impact on domestic producers of the domestic like product, but only in the context of U.S. production

[64] CR/PR at Tables 5.4 – 5.7.
[65] 19 U.S.C. §§ 1671b(a), 1673b(a).

operations.[66] The statute defines "material injury" as "harm which is not inconsequential, immaterial, or unimportant."[67] In assessing whether there is a reasonable indication that the domestic industry is materially injured by reason of subject imports, we consider all relevant economic factors that bear on the state of the industry in the United States.[68] 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."[69]

Although the statute requires the Commission to determine whether there is a reasonable indication that the domestic industry is "materially injured or threatened with material injury by reason of" unfairly traded imports,[70] it does not define the phrase "by reason of," indicating that this aspect of the injury analysis is left to the Commission's reasonable exercise of its discretion.[71] 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

[66] 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).

[67] 19 U.S.C. § 1677(7)(A).

[68] 19 U.S.C. § 1677(7)(C)(iii).

[69] 19 U.S.C. § 1677(7)(C)(iii).

[70] 19 U.S.C. §§ 1671b(a), 1673b(a).

[71] *Angus Chemical Co. v. United States*, 140 F.3d 1478, 1484-85 (Fed. Cir. 1998) ("{T}he statute does not 'compel the commissioners' to employ {a particular methodology}."), *aff'g,* 944 F. Supp. 943, 951 (Ct. Int'l Trade 1996).

cause of injury and that there is a sufficient causal, not merely a temporal, nexus between subject imports and material injury.[72]

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.[73] In performing its examination, however, the Commission need not isolate the injury caused by other factors from injury caused by unfairly traded imports.[74] Nor does

[72] 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).

[73] SAA at 851-52 ("{T}he Commission must examine other factors to ensure that it is not attributing injury from other sources to the subject imports."); S. Rep. 96-249 at 75 (1979) (the Commission "will consider information which indicates that harm is caused by factors other than less-than-fair-value imports."); H.R. Rep. 96-317 at 47 (1979) ("in examining the overall injury being experienced by a domestic industry, the ITC will take into account evidence presented to it which demonstrates that the harm attributed by the petitioner to the subsidized or dumped imports is attributable to such other factors;" those factors include "the volume and prices of nonsubsidized imports or imports sold at fair value, contraction in demand or changes in patterns of consumption, trade restrictive practices of and competition between the foreign and domestic producers, developments in technology and the export performance and productivity of the domestic industry"); *accord Mittal Steel*, 542 F.3d at 877.

[74] 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 (Continued…)

the "by reason of" standard require that unfairly traded imports be the "principal" cause of injury or contemplate that injury from unfairly traded imports be weighed against other factors, such as nonsubject imports, which may be contributing to overall injury to an industry.[75] It is clear that the existence of injury caused by other factors does not compel a negative determination.[76]

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."[77] 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

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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.").

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

[76] *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.").

[77] *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*.

sources to the subject imports." [78] The Federal Circuit has examined and affirmed various Commission methodologies and has disavowed "rigid adherence to a specific formula."[79]

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.[80] Congress has delegated this factual finding to the Commission because of the agency's institutional expertise in resolving injury issues.[81]

B. Conditions of Competition and the Business Cycle

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

1. Captive Production

The domestic industry captively consumes a portion of its production of MAMMOs in the manufacture of downstream products. We therefore consider the applicability of the statutory captive production provision, and whether to focus our analysis primarily on the

[78] *Mittal Steel*, 542 F.3d at 873 (quoting from *Gerald Metals*, 132 F.3d at 722), 877-79. We note that one relevant "other factor" may involve the presence of significant volumes of price-competitive nonsubject imports in the U.S. market, particularly when a commodity product is at issue. In appropriate cases, the Commission collects information regarding nonsubject imports and producers in nonsubject countries in order to conduct its analysis.

[79] *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").

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

[81] *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.").

merchant market when assessing market share and the factors affecting the financial performance of the domestic industry.[82]

a. Arguments of the Parties

Petitioner argues that the captive production provision should not apply because the threshold criteria of "significant production" is not met based on the levels of the domestic industry's internal consumption and transfers to related firms during the POI. Therefore, it contends that the Commission should focus its analysis on the overall market.[83]

a. Analysis and Conclusion

Threshold Criterion. The provision can be applied only if, as a threshold matter, significant production of the domestic like product is internally transferred and significant production is sold in the merchant market. The domestic industry internally consumed

[82] The captive production provision can be applied only if, as a threshold matter, significant production of the domestic like product is internally transferred and significant production is sold in the merchant market. The captive production provision, 19 U.S.C. § 1677(7)(C)(iv), as amended by the Trade Preferences Extension Act ("TPEA") of 2015, provides:

> (iv) CAPTIVE PRODUCTION – If domestic producers internally transfer significant production of the domestic like product for the production of a downstream article and sell significant production of the domestic like product in the merchant market, and the Commission finds that-
>
> > (I) the domestic like product produced that is internally transferred for processing into that downstream article does not enter the merchant market for the domestic like product, and
> > (II) the domestic like product is the predominant material input in the production of that downstream article.

The SAA indicates that where a domestic like product is transferred internally for the production of another article coming within the definition of the domestic like product, such transfers do not constitute internal transfers for the production of a "downstream article" for purposes of the captive production provision. SAA at 853.

The TPEA eliminated what had been the third statutory criterion of the captive production provision. Pub. L. 114-27, § 503(c).

[83] Arkema Postconf. Br. at 24.

between *** and *** percent of U.S. producers' U.S. shipments during the POI, while it sold between *** and *** percent of its U.S. shipments commercially.[84] As discussed below, we consider that whether or not the threshold criterion is met, the first and second statutory criteria are not met and therefore the captive production provision does not apply for purposes of these preliminary phase investigations.

First Statutory Criterion. The first criterion of the captive consumption provision focuses on whether any of the domestic like product that is internally transferred for further processing into downstream articles is in fact sold in the merchant market for the domestic like product.[85] ***, reported selling the *** its internal consumption into the merchant market "as is," *i.e.,* as in-scope MAMMOs.[86] As a result, the domestic industry further processed into out-of-scope downstream articles between *** and *** percent of its internal consumption during the POI, while the *** was diverted to the merchant market for the domestic like product.[87] As a majority of the industry's internal consumption was reportedly diverted to the merchant market, we find that this criterion would not be satisfied for purposes of these preliminary phase investigations.

Second Statutory Criterion. In applying the second statutory criterion, the Commission generally considers whether the domestic like product is the predominant material input into a

[84] CR/PR at Table 3.11.

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

[86] CR/PR at 3.13. ***. *** U.S. Producer Questionnaire at II-12.

[87] CR/PR at Table 3.12.

downstream product by referring to its share of the raw material cost of the downstream product,[88] but the Commission has also construed "predominant" material input to mean the main or strongest element, and not necessarily a majority of the inputs by value.[89]

In these investigations, domestic producers reported that internally consumed MAMMOs accounted for *** percent of the quantity and *** percent of the value of the downstream articles' raw material inputs.[90] Based on these shares, we find that the second criterion would not be satisfied for purposes of these preliminary phase investigations.

Conclusion. In light of the above, and in the absence of any contrary argument, we determine that the captive production provision does not apply.

2. Demand Conditions

U.S. demand for MAMMOs depends on the demand for the downstream products in which it is used, including inks, OPVs and coatings, such as those used for wood flooring or food packaging.[91] The record indicates that demand for MAMMOs follows general economic conditions, as well as construction activity, and residential construction in particular.[92] *** responding U.S. producers reported that U.S. demand for MAMMOs *** from

[88] *See e.g.*, *Emulsion Styrene-Butadiene Rubber from Czechia and Russia,* Inv. Nos. 731-TA-1575 and 731-TA-1577 (Final), USITC Pub. 5392 at 19 (Jan. 2023) (confidential version at 25, EDIS Doc. No. 787280) ("In these investigations, Goodyear indicated that internally consumed ESBR accounted for *** percent of the value and *** percent of the total weight of raw materials used to produce tires. We find that these shares are insufficient to satisfy this criterion").

[89] *See Polyvinyl Alcohol from Germany and Japan*, Inv. Nos. 731-TA-1015-16 (Final), USITC Pub. 3604 at 15 n.69 (June 2003).

[90] CR/PR at Table 3.13.

[91] CR/PR at 2.6.

[92] Arkema Postconf. Br. at 16; Conf. Tr. at 22 (Szamosszegi).

2022 to 2024, while a majority of responding importers (10 of 17) reported that it fluctuated down or steadily decreased.[93]

Apparent U.S. consumption of MAMMOs decreased from *** pounds in 2022 to *** pounds in 2023, before increasing to *** pounds in 2024, a level *** percent lower than in 2022.[94]

3. Supply Conditions

The domestic industry, consisting only of Arkema and Allnex after 2023 (the year IGM Resins ceased domestic production),[95] was the largest source of supply to the U.S. market throughout the POI. Its share of apparent U.S. consumption decreased from *** percent in 2022 to *** percent in 2023 before increasing to *** percent in 2024, an overall decrease of *** percentage points.[96]

The domestic industry's practical production capacity decreased from *** pounds in 2022 to *** in 2023 and *** pounds in 2024.[97] Its practical capacity utilization rate decreased from *** percent in 2022 to *** percent in 2023 before increasing to *** percent in 2024.[98] Although one domestic producer reported that it had

[93] CR/PR at 2.7.

[94] CR/PR at Tables 4.9 and C.1.

[95] Petition at I-26; CR/PR at Table 3.3. On June 6, 2023, IGM Resins announced the closure of its production facility in North Carolina. *Id.*

[96] CR/PR at Tables 4.9 and C.1. We note that the domestic industry's market shares in 2022 and 2023, as well as other domestic industry data for those years, are understated due to the absence of data from IGM Resins, which produced MAMMOs domestically in 2022 and 2023.

[97] CR/PR at Table 3.5.

[98] CR/PR at Table 3.5.

experienced supply constraints in 2022, no domestic producers reported any constraints on their supply in 2023 or 2024.[99]

Cumulated subject imports were the second largest source of supply during the POI. Their share of apparent U.S. consumption increased from *** percent in 2022 to *** percent in 2023 and *** percent in 2024, a total increase of *** percentage points.[100]

Nonsubject imports were the smallest source of supply during the POI. Their share of apparent U.S. consumption increased from *** percent in 2022 to *** percent in 2023 before decreasing to *** percent in 2024, an overall decrease of *** percentage points.[101] The largest sources of nonsubject imports were China, Belgium, and Germany.[102]

4. Substitutability and Other Conditions

Based on the record in the preliminary phase of these investigations, we find that there is a high degree of substitutability between domestically produced MAMMOs and cumulated subject imports. *** domestic producers and almost all responding U.S. importers reported that the domestic like product and subject imports from South Korea and Taiwan are always or frequently interchangeable.[103] In addition, *** domestic producers and most U.S. importers reported that differences other than price are only sometimes or never significant.[104] At the

[99] CR/PR at 2.5-2.6. *** reported that lingering effects of the COVID-19 pandemic reduced the availability of raw materials in early 2022, leading to some delays that it described as *** It reported that these conditions had mostly ended by June 2022. *Id.*

[100] CR/PR at Tables 4.9 and C.1. Three importers reported supply constraints in 2022, while 12 importers experienced no supply constraints during the POI. *Id*. at 2.5-2.6.

[101] CR/PR at Tables 4.9 and C.1.

[102] CR/PR at 2.5.

[103] CR/PR at Tables 2.6 and 2.7.

[104] CR/PR at Tables 2.8 and 2.9. Seven of 11 responding importers reported that differences other than price were sometimes or never significant between domestically produced MAMMOs and subject imports from South Korea; seven of 10 responding importers reported that differences other (Continued…)

conference, an official from Allnex testified that MAMMOs are "off-the-shelf" commodity products, "mak{ing} it very easy for materials made here in the United States and then also foreign materials to be interchangeable."[105]

We also find that price is an important factor in purchasing decisions, among others. Purchasers most frequently cited price and quality as the first-most important factors they consider when purchasing MAMMOs.[106] Further, purchasers most frequently cited quality and availability (five firms each) followed by price (four firms) among their top three purchasing factors.[107]

MAMMOs are most commonly sold directly to formulators.[108] U.S. producers and importers primarily sold MAMMOs from inventories ***.[109] For the minority of sales made pursuant to contracts, neither domestic producers nor responding importers reported that such contracts indexed prices to raw material costs.[110] For commercial U.S.

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than price were sometimes or never significant between domestically produced MAMMOs and subject imports from Taiwan. *Id.*

[105] Conf. Tr. at 46 (McClung).

[106] CR/PR at Table 2.5. Quality and price were cited by two firms each, followed by availability/supply, which was cited by one firm. *Id.*

[107] CR/PR at Table 2.5.

[108] CR/PR at Table 2.1; Conf. Tr. at 41 (Crans). Formulators encompass ink manufacturers and "all other end users." *See* CR/PR at Table 2.1.

[109] CR/PR at Table 5.2 and 2.9. U.S. producers made *** percent of their U.S. shipments in the spot market, *** percent pursuant to long-term contracts, and *** percent pursuant to annual contracts. U.S. shipments of subject imports were sold primarily in the spot market (*** percent), but also through short-term contracts (*** percent), annual contracts (*** percent) and long-term contracts (*** percent). *Id.*

[110] CR/PR at 5.2.

shipments from inventories, lead times averaged *** days for domestic producers and *** days for importers.[111]

Raw materials represented the largest component of the domestic industry's cost of goods sold ("COGS") for MAMMOs during the POI.[112] The raw materials used to produce MAMMOs included acrylic acid, methacrylic acid, caustic soda, bisphenol-A epoxy, and "other material." "Other material" accounted for most of the industry's cost of raw materials (*** percent), followed by acrylic acid (*** percent) and bisphenol-A epoxy (*** percent).[113] According to Petitioner, raw material prices ***.[114] As a share of the domestic industry's total COGS, raw materials declined from *** percent in 2022, to *** percent in 2023, and *** percent in 2024.[115]

[111] CR/PR at 2.9. U.S. producers reported that *** percent of their commercial shipments came from inventories. The remaining *** percent of their commercial shipments were produced-to-order, with lead times averaging *** days. Importers reported that *** percent of their shipments came from U.S. inventories, *** percent from foreign inventories with lead times averaging *** days, and *** percent produced to order, with lead times averaging *** days.

[112] CR/PR at 6.11.

[113] CR/PR at 6.11-12, Table 6.4. "Other material" included ***. *Id.* at 6.12.

[114] CR/PR at 6.12 n.5. There is no publicly available data reflecting prices for raw materials during the POI. *Id.* at 5.1.

[115] CR/PR at Table 6.1. The record indicates that per-unit raw material COGS for the domestic industry decreased from $*** per pound in 2022 to $*** per pound in 2023 and $*** per pound in 2024. *Id.*

Effective April 5, 2025, MAMMOs originating in all countries, including South Korea and Taiwan, became subject to an additional 10 percent *ad valorem* duty under the International Emergency Economic Powers Act ("IEEPA").[116] [117]

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."[118]

The volume of cumulated subject imports decreased from *** pounds in 2022 to *** pounds in 2023 before increasing to *** pounds in 2024, for an overall increase of *** percent.[119] As a share of apparent U.S. consumption, U.S. shipments of cumulated subject imports increased from *** percent in 2022 to *** percent in 2023 and *** percent in 2024, a level *** percentage points higher than in 2022.[120]

Based on the record in the preliminary phase of these investigations, we find that the volume of cumulated subject imports and the increase in that volume are significant, both in absolute terms and relative to consumption in the United States.

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[116] CR/PR at 1.8. Effective April 9, 2025, South Korea was assigned an individualized country duty of 25 percent *ad valorem,* and Taiwan was assigned an individualized country duty of 32 percent *ad valorem*. However, effective April 10, 2025, individualized duties were suspended for 90 days, and the duty rate for subject merchandise originating in South Korea and Taiwan was returned to 10 percent *ad valorem*. *Id.*

[117] CR/PR at 1.8.

[118] 19 U.S.C. § 1677(7)(C)(i).

[119] CR/PR at Table 4.2. U.S. shipments of cumulated subject imports increased from *** pounds in 2022 to *** pounds in 2023 and *** pounds in 2024. *Id.* at Table 4.9.

[120] CR/PR at Tables 4.9 and C.1.

D. Price Effects of the Subject Imports

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

> (I) there has been significant price underselling by the imported merchandise as compared with the price of domestic like products of the United States, and
>
> (II) the effect of imports of such merchandise otherwise depresses prices to a significant degree or prevents price increases, which otherwise would have occurred, to a significant degree.[121]

As addressed in section VII.B.4. above, we have found that there is a high degree of substitutability between the domestic like product and cumulated subject imports and that price is an important factor in purchasing decisions for MAMMOs.

We have examined several sources of data for our underselling analysis. The Commission collected quarterly quantity and f.o.b. pricing data on sales of four products shipped to unrelated U.S. customers from January 2022 to December 2024.[122] Both U.S. producers and 10 importers provided useable pricing data for sales of the requested products, although not all firms reported pricing for all products in all quarters.[123] Pricing data reported by these firms accounted for approximately *** percent of U.S. producers' U.S. shipments,

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[121] 19 U.S.C. § 1677(7)(C)(ii).

[122] CR/PR at 4.3. The four pricing products are:

Product 1.-- Bisphenol-A Epoxy Acrylate diluted with 40% TMPTA (Epoxy Acrylate TMPTA Blend), packed in polyethylene IBC containers (also known as totes).

Product 2.-- Trimethylolpropane triacrylate (TMPTA), CAS# 15625-89-5, packed in polyethylene IBC containers (also known as totes).

Product 3.-- Ethoxylated (3) trimethylol-propane triacrylate (written as TMP3EOTA or TMP(EO)3TA), CAS# 28961-43-5, packed in polyethylene IBC containers (also known as totes).

Product 4.-- Dipropylene glycol diacrylate (DPGDA), CAS# 57472-68-1, packed in polyethylene IBC containers (also known as totes).

[123] CR/PR at 5.3.

*** percent of U.S. shipments of subject imports from South Korea, and *** percent of U.S. shipments of subject imports from Taiwan, in 2024.[124]

The pricing data show majority underselling by subject imports during the POI. Subject imports undersold the domestic like product in 61 of 96 quarterly comparisons, or 63.5 percent of the time, at margins ranging between *** and *** percent and averaging *** percent.[125] Subject imports oversold the domestic like product in the remaining 35 quarterly comparisons, or 36.5 percent of the time, at margins ranging from *** to *** percent and averaging *** percent.[126] Further, quarters in which there was underselling accounted for *** percent of reported subject import sales volume (*** pounds), while quarters in which there was overselling accounted for *** percent of reported subject import sales volume (*** pounds).[127]

The Commission also collected landed duty-paid ("LDP") import purchase cost data for the same four pricing products from end users that directly imported these products from subject sources.[128] Four such importers reported import purchase cost data, which accounted for approximately *** percent of subject imports from South Korea and *** percent of subject imports from Taiwan in 2024.[129] These data show that LDP costs for subject imports were below the sales prices for the domestic like product in 41 of 59 quarterly comparisons, or 69.5 percent of the time, at price-cost differentials ranging from *** to *** percent and

[124] CR/PR at 5.3–5.4.
[125] CR/PR at Table 5.15.
[126] CR/PR at Table 5.15.
[127] *Calculated from* CR/PR at Table 5.15.
[128] CR/PR at 5.12.
[129] CR/PR at 5.12.

averaging *** percent.[130] LDP costs for subject imports were higher than the sales prices for the domestic like product in the remaining 18 of 59 quarterly comparisons, or 30.5 percent of the time, at price-cost differentials ranging from *** to *** percent and averaging *** percent.[131] Quarters in which import purchase costs were lower than domestic sales prices accounted for a substantial majority, *** pounds or *** percent, of the quantity of reported subject import purchases.[132]

We recognize that the import purchase cost data may not reflect the total cost of importing and we therefore requested additional information regarding the costs and benefits of importing MAMMOs directly. Two of the four importers providing purchase cost data reported that they incurred additional costs that ranged from *** percent beyond the LDP costs associated with importing MAMMOs.[133] Given that subject import purchase costs were on average *** percent below domestic sales prices in the quarters in which the import purchase costs were lower than domestic prices, as noted above, the inclusion of the additional costs of *** percent would still show that subject import purchase costs were lower than domestic sales prices in those quarters. Indeed, one importer reported that the cost of importing subject MAMMOs is lower than the price of purchasing MAMMOs from a U.S. producer or importer, whether including or excluding the additional costs associated with importing.[134]

[130] CR/PR at Table 5.18.
[131] CR/PR at Table 5.18.
[132] *Calculated from* CR/PR at Table 5.18.
[133] CR/PR at 5.12. Reported additional costs include warehousing and interest paid on inventory. *Id.*
[134] CR/PR at 5.12.

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. The Commission received responses from six purchasers, accounting for 32.4 million pounds of MAMMOs, where total apparent U.S. consumption over the period of investigation was *** pounds.[135] All six responding purchasers reported purchasing subject imports instead of domestically produced MAMMOs, with five of these purchasers also reporting that subject import prices were lower than domestic prices.[136] Three responding purchasers reported that they purchased *** pounds of subject imports instead of domestically produced MAMMOs primarily because of their lower price, equivalent to *** percent of responding purchasers' purchases of subject imports, and *** percent of U.S. importers' total U.S. shipments of subject imports during the POI.[137]

Based on the high degree of substitutability between subject imports and the domestic like product, the importance of price to purchasing decisions, the majority underselling by subject imports, and the purchase cost data showing that subject import purchase costs were generally lower than domestic sales prices, we find that subject import underselling was significant during the POI. The underselling caused a shift in market share from the domestic industry to cumulated subject imports, with the domestic industry losing *** percentage points of market share and subject imports gaining *** percentage points of market share during the POI.[138]

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[135] CR/PR at 5.29, Tables 4.8, C.1.

[136] CR/PR at 5.31, Table 5.23.

[137] CR/PR at Table 5.23 and *calculated from* CR/PR at Tables 5.21, 5.23, C-1 *and* *** U.S. Lost Sales/Lost Revenue Response at 1.

[138] CR/PR at Tables 4.9, C.1.

We have also considered whether subject imports depressed or suppressed prices to a significant degree. In general, sales prices for the domestic industry decreased. Domestic prices for pricing products 1, 2 and 4 fell from the second or third quarter of 2022 to the first or second quarter of 2024 before stabilizing.[139] Between the first and last quarters of the POI, domestic sales prices decreased between *** and *** percent for products 1, 2, and 4, depending on the product, while sales prices for product 3 increased by *** percent.[140] Sales prices for cumulated subject imports followed the same general trend, with prices for all four products falling from the latter half of 2022 through the latter half of 2023, with overall price decreases between the first and last quarters of the POI ranging from *** to *** percent, depending on the product and country.[141]

Responses from purchasers indicate that domestic producers reduced their prices as a direct result of subject import competition. Three of six purchasers responding to the Commission's Lost Sales and Revenues survey reported that domestic producers reduced their prices by an average of *** percent in response to competition with low-priced subject imports from South Korea, and one purchaser reported that a domestic producer reduced its prices by *** percent in response to competition with subject imports from Taiwan.[142] One purchaser reporting that domestic producers had reduced their prices in response to subject

[139] *See* CR/PR at Table 5.12.

[140] CR/PR at 5.21, Tables 5.11, 5.12. We observe that domestic sales prices for product 3 followed the same general trend as the other three pricing products, declining markedly from the third quarter of 2022 to the first quarter of 2024, but then increased through the fourth quarter of 2024, while prices for the other products remained relatively flat. *Id.* at Table 5.12. Between the first quarter of 2022 and the first quarter of 2024, domestic sales prices for product 3 declined *** percent. *Calculated from* CR/PR at Table 5.5.

[141] CR/PR at Tables 5.11, 5.13.

[142] CR/PR at Table 5.25.

import competition stated that prices "***" during the POI and that ***.[143]

Further, as declines in the domestic industry's net sales average unit values ("AUVs") outpaced declines in its unit COGS from 2022 to 2024, the industry experienced a cost-price squeeze as the domestic industry's COGS-to-net-sales ratio increased from *** percent in 2022 to *** percent in 2023 and *** percent in 2024, a level *** percentage points higher than in 2022.[144] Between 2022 and 2024, the domestic industry's net sales AUV declined by $*** per pound, or *** percent, while the industry's unit COGS declined by only $*** per pound, or *** percent, driven by a decline in the industry's unit raw material costs of $*** per pound, or *** percent.[145] Apparent U.S. consumption from 2022 to 2024 declined *** percent, first declining from 2022 to 2023 then increasing by a comparable amount from 2023 to 2024.[146] As apparent U.S. consumption increased by *** percent from 2023 to 2024, the domestic industry's net sales AUV continued to decline.[147] Given that subject imports significantly undersold the domestic like product during the POI as domestic sales prices and net sales unit values declined to a greater degree than the domestic industry's unit COGS, and in view of our findings that there is a high degree of substitutability between subject

[143] CR/PR at Table 5.25.

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

[145] CR/PR at Table 6.2. The industry's net sales' AUVs declined from $*** per pound in 2023 to $*** per pound in 2024 (*** percent) while its per-unit COGS declined from $*** per pound in 2023 to $*** per pound in 2024 (*** percent). *Id.* The industry's per-unit COGS declined from $*** per pound in 2022 to $*** per pound in 2023 and $*** per pound in 2024. The industry's per-unit raw material costs declined from $*** per pound in 2022 to $*** per pound in 2023 and $*** per pound in 2024. *Id.*

[146] CR/PR at Tables 4.9, C.1. Apparent U.S. consumption decreased from *** percent from *** pounds in 2022 to *** pounds in 2023, before increasing by *** percent to *** pounds in 2024.[146]

[147] CR/PR at Table 6.2.

imports and domestic product and that price is an important purchasing factor, as well as the purchaser responses discussed above, we conclude that cumulated subject imports depressed prices for the domestic like product to a significant degree.

In sum, we find that subject imports significantly undersold the domestic like product, 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[148]

Section 771(7)(C)(iii) of the Tariff Act provides that the Commission, in examining the impact of the subject imports on the domestic industry, "shall evaluate all relevant economic factors which have a bearing on the state of the industry." These factors include output, sales, inventories, capacity utilization, market share, employment, wages, productivity, gross profits, net profits, operating profits, cash flow, return on investment, return on capital, ability to raise capital, ability to service debt, research and development, and factors affecting domestic prices. No single factor is dispositive and all relevant factors are considered "within the context of the business cycle and conditions of competition that are distinctive to the affected industry."[149]

[148] Commerce initiated antidumping duty investigations based on estimated dumping margins of 137.84 to 188.01 percent for imports from South Korea and 112.81 percent to 286.12 percent for imports from Taiwan. *Certain Monomers and Oligomers from the Republic of Korea and Taiwan: Initiation of Less-Than-Fair-Value Investigations*, 90 Fed. Reg. 17044 (Apr. 23, 2024).

[149] 19 U.S.C. § 1677(7)(C)(iii). This provision was amended by the Trade Preferences Extension Act of 2015, Pub. L. 114-27.

By almost every measure, the domestic industry's performance declined over the POI. The domestic industry's practical capacity steadily declined,[150] while its production[151] decreased from 2022 to 2023 before increasing in 2024, albeit to levels lower than in 2022.[152] Its capacity utilization rate declined from 2022 to 2023, then increased in 2024, for a slight overall improvement.[153]

The domestic industry's number of production related workers ("PRWs")[154] and total hours worked[155] tracked its trends in production for overall declines from 2022 to 2024. Total wages paid[156] and productivity[157] declined from 2022 to 2023 before increasing in 2024 to levels above those in 2022. Hourly wages[158] and unit labor costs[159] steadily increased from 2022 to 2024.

[150] CR/PR at Tables 3.5, C.1. Practical capacity declined from *** pounds in 2022 to *** pounds in 2023 and *** pounds in 2024, an overall decline of *** percent. *Id.*

[151] CR/PR at Table 3.5, C.1. The domestic industry's production decreased from *** pounds in 2022 to *** pounds in 2023 before increasing to *** pounds in 2024, a level *** percent lower than in 2022. *Id.*

[152] CR/PR at Tables 3.5, C.1. Practical capacity declined from *** pounds in 2022 to *** pounds in 2023 and *** pounds in 2024, an overall decline of *** percent. *Id.*

[153] CR/PR at Table 3.5, C.1. The industry's capacity utilization rate declined from *** percent in 2022 to *** percent in 2023 before increasing to *** percent in 2024, an overall increase of *** percentage points. *Id.*

[154] CR/PR at Tables 3.15, C.1. The industry's PRWs decreased from *** in 2022 to *** in 2023 before increasing to *** in 2024. *Id.*

[155] CR/PR at Tables 3.15, C.1. Total hours worked in the industry (in thousands of hours) decreased from *** in 2022 to *** in 2023 before increasing to *** in 2024. *Id.*

[156] CR/PR at Tables 3.15, C.1. Total wages paid in the industry decreased from $*** in 2022 to $*** in 2023 before increasing to $*** in 2024. *Id.*

[157] CR/PR at Tables 3.15, C.1. Productivity decreased from *** pounds per hour in 2022 to *** pounds per hour in 2023 before increasing to *** pounds per hour in 2024. *Id.*

[158] CR/PR at Tables 3.15, C.1. The industry's hourly wages increased from $*** per hour in 2022 to $*** per hour in 2023 and $*** per hour in 2024. *Id.*

[159] CR/PR at Tables 3.15, C.1. The industry's unit labor costs increased from $*** per pound in 2022 to $*** per pound in 2023 and $*** per pound in 2024. *Id.*

The domestic industry's U.S. shipments decreased from 2022 to 2023 before increasing in 2024, albeit to levels lower than in 2022.[160] The industry's share of apparent U.S. consumption decreased from *** percent in 2022 to *** percent in 2023, an *** percentage point decline, then increased by *** percentage points to *** percent in 2024, for an overall decline of *** percentage points.[161] End-of-period inventories decreased.[162] The domestic industry's financial indicia show near universal declines over the POI. The domestic industry's net sales,[163] gross profits,[164] operating income,[165] and net income[166] all steadily declined from 2022 to 2024. The industry's positive operating and net income margins in 2022 had turned negative by 2024.[167] Capital expenditures steadily increased,[168] in contrast to ("R&D") expenses, which steadily declined.[169] The industry's return on assets also declined,

[160] CR/PR at Table 3.10, C.1. U.S. shipments decreased from *** pounds in 2022 to *** pounds in 2023 before increasing to *** pounds in 2024, a level *** percent lower than in 2022. *Id.*

[161] CR/PR at Tables 4.9, C.1.

[162] CR/PR at Table 3.5, C.1. The industry's end-of-period inventories decreased from *** pounds in 2022 to *** pounds in 2023 and *** pounds in 2024. *Id.*

[163] CR/PR at Tables 6.1, C.1. The domestic industry's net sales value declined from $*** in 2022 to $*** in 2023 before decreasing slightly to $*** in 2024, an overall decrease of *** percent. *Id.* Per-unit net sales values declined from $*** per pound in 2022 to $*** per pound in 2023 and $*** per pound in 2024, an overall decline of *** percent. *Id.*

[164] CR/PR at Tables 6.1, C.1. The domestic industry's gross profits declined from $*** in 2022 to $*** in 2023 and $*** in 2024, an overall decline of *** percent. *Id.*

[165] CR/PR at Tables 6.1, C.1. The industry's operating income declined from $*** in 2022 to $*** in 2023 to *** in 2024. *Id.*

[166] CR/PR at Tables 6.1, C.1. The industry's net income also declined from $*** in 2022 to $*** in 2023 to *** in 2024. *Id.*

[167] CR/PR at Tables 6.1, C.1. Operating and net income as a ratio to net sales declined from *** percent in 2022 to *** percent in 2023 to *** percent in 2024. *Id.*

[168] CR/PR at Tables 6.6, C.1. Capital expenditures increased from $*** in 2022 to $*** in 2023 and $*** in 2024. *Id.*

[169] CR/PR at Tables 6.7, C.1. R&D expenses declined from $*** in 2022 to $*** in 2023 and $*** in 2024. *Id.*

turning from positive in 2022 to negative in 2024.[170] *** U.S. producers reported that subject imports negatively affected their capital investment, return on investment, growth, and development, and *** anticipate that these negative effects are likely to continue.[171]

Between 2022 to 2024, cumulated subject import volume increased significantly, driven by significant underselling, and captured *** percentage points of market share from the domestic industry. As a result, the domestic industry's production, sales, and revenues were lower than they otherwise would have been. At the same time, the significant volumes of low-priced subject imports depressed prices for the domestic like product to a significant degree, with domestic sales prices reaching their lowest levels of the POI in 2024 despite the *** percent increase in apparent U.S. consumption from 2023 to 2024. Although the industry's production and U.S. shipments improved from 2023 to 2024, as apparent U.S. consumption increased, its financial performance continued to worsen and it recorded its poorest financial results of the period in 2024, as subject imports continued to gain market share and depress domestic prices to a significant degree. Based on the above, we find that cumulated subject imports had a significant 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. As discussed in section VII.B.3 above, nonsubject imports were the smallest source of MAMMOs in the U.S. market, declining irregularly as a share of apparent U.S. consumption

[170] CR at Table 6.10. The industry's return on assets declined from *** percent in 2022 to *** percent in 2023 to *** percent in 2024. *Id.*

The industry's total net assets declined from $*** in 2022 to $*** before increasing to $*** in 2024. *Id.* at Tables 6.9, C.1.

[171] CR/PR at Tables 6.12 and 6.13.

from *** percent in 2022 to *** percent in 2024.[172] Nonsubject imports cannot explain the domestic industry's loss of market share during the POI, as they also lost market share over the period. Although the AUVs of nonsubject imports were lower than those of cumulated subject imports throughout the POI,[173] responding purchasers confirmed that domestic producers reduced their prices expressly as a result of competition with low-priced subject imports. Thus, nonsubject imports cannot explain the injury to the domestic industry that we have attributed to cumulated subject imports.

We recognize that apparent U.S. consumption declined irregularly by *** percent from 2022 to 2024. The decline in apparent U.S. consumption, however, does not explain the larger declines in the domestic industry's production and U.S. shipments during the period, by *** and *** percent, respectively, as the industry lost market share to cumulated subject imports. In addition, as noted above, purchasers confirmed that U.S. producers reduced prices in order to compete with low-priced subject imports. Even as apparent U.S. consumption increased *** percent from 2023 to 2024, the domestic industry's net sales AUV and U.S. shipment AUV continued to decline as cumulated subject imports depressed domestic prices to a significant degree.

VIII. Conclusion

For the reasons stated above, we determine that there is a reasonable indication that an industry in the United States is materially injured by reason of imports of MAMMOs from South

[172] CR/PR at Tables 4.9, C.1.

[173] AUVs for subject imports were $*** in 2022, $*** in 2023, and $*** in 2024 while nonsubject import AUVs were $*** in 2022, $*** in 2023, and $*** in 2024. CR/PR at Tables 4.9, C.1.

Korea and Taiwan that are allegedly sold in the United States at less than fair value and imports of MAMMOs from Taiwan that are allegedly subsidized by the government of Taiwan.

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 Arkema, Inc., King of Prussia, Pennsylvania, on March 27, 2025, alleging that an industry in the United States is materially injured and threatened with material injury by reason of subsidized and less-than-fair-value ("LTFV") imports of certain multifunctional acrylate and methacrylate monomers, and acrylated bisphenol-A epoxy based oligomers ("MAMMOs")[1] from South Korea and Taiwan. Table 1.1 presents information relating to the background of these investigations.[2,3]

Table 1.1 MAMMOs: Information relating to the background and schedule of this proceeding

Effective date	Action
March 27, 2025	Petitions filed with Commerce and the Commission; institution of the Commission investigations (90 FR 14475, March 27, 2025)
April 16, 2025	Commerce's notice of initiation (90 FR 17032 and 17044, April 23, 2025)
April 17, 2025	Commission's conference
May 9, 2025	Commission's vote
May 12, 2025	Commission's determinations
May 19, 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] A list of witnesses appearing at the conference is presented in appendix B of this report.

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, alleged 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.

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

Market summary

MAMMOs are generally used as components in radiation curable inks, coatings, overprint varnishes, and similar articles. The leading U.S. producers of MAMMOs are Arkema and Allnex, while leading producers of MAMMOs outside the United States include *** of South Korea and *** of Taiwan. The leading U.S. importers of MAMMOs from South Korea are ***, while the leading importers of MAMMOs from Taiwan are ***. Leading importers of product from nonsubject countries (primarily ***) include ***. U.S. purchasers of MAMMOs are formulators that process MAMMOs into inks, coatings, and overprint varnishes; leading purchasers include ***.

Apparent U.S. consumption of MAMMOs totaled approximately *** pounds ($***) in 2024. Currently, two firms are known to produce MAMMOs in the United States.[6] U.S. producers' U.S. shipments of MAMMOs totaled *** pounds ($***) in 2024, and accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value. U.S. imports from subject sources totaled *** pounds ($***) in 2024 and accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value. U.S. imports from nonsubject sources totaled *** pounds ($***) in 2024 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 2022 to 2024. Except as noted, U.S. industry data are based on questionnaire responses of two firms that accounted for 100 percent of U.S. production of MAMMOs during 2024. U.S. imports are based on

[6] Conference transcript, p. 6 (Mintzer).

questionnaire responses of 17 firms that accounted for an estimated *** percent of subject U.S. imports and an estimated *** percent of all U.S. imports of MAMMOs in 2024.[7]

Previous and related investigations

MAMMOs has been the subject of no prior countervailing or antidumping duty investigations in the United States.

Nature and extent of alleged subsidies and sales at LTFV

Alleged subsidies

On April 23, 2025, Commerce published a notice in the Federal Register of the initiation of its countervailing duty investigations on MAMMOs from Taiwan.[8]

Alleged sales at LTFV

On April 23, 2025, Commerce published a notice in the Federal Register of the initiation of its antidumping duty investigations on MAMMOs from South Korea and Taiwan.[9] Commerce has initiated antidumping duty investigations based on estimated dumping margins of 137.84 to 188.01 percent for MAMMOs from South Korea and 112.81 to 286.12 percent for MAMMOs from Taiwan.

[7] Please see page 4.1, fn. 2 for an explanation of how these coverage estimates were calculated.

[8] For further information on the alleged subsidy programs see Commerce's notice of initiation and related CVD Initiation Checklist. 90 FR 17032, April 23, 2025.

[9] 90 FR 17044, April 23, 2025.

The subject merchandise

Commerce's scope

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

The products subject to these investigations are certain multifunctional acrylate and methacrylate monomers, and acrylated bisphenol-A epoxy based oligomers (collectively, certain monomers and oligomers or CMOs) that are derived from chemical reactions involving the use of acrylic or methacrylic acid. Products within the scope are listed below and have the following Chemical Abstracts Service (CAS) numbers:

CAS Number	Description	Molecular Formula
109-16-0	Triethylene glycol dimethacrylate (TEGDMA)	$C_{14}H_{22}O_6$
13048-33-4	1,6-hexanediol diacrylate (HDDA)	$C_{12}H_{18}O_4$
42978-66-5	Tripropylene glycol diacrylate (TPGDA)	$C_{15}H_{24}O_6$
3290-92-4	Trimethylolpropane trimethacrylate (TMPTMA)	$C_{18}H_{26}O_6$
15625-89-5	Trimethylolpropane triacrylate (TMPTA)	$C_{15}H_{20}O_6$
28961-43-5	Ethoxylated trimethylol-propane triacrylate (EOTMPTA	$(C_2H_4O)_n(C_2H_4O)_n(C_2H_4O)_nC_{15}H_{20}O_6$
57472-68-1	Dipropylene glycol diacrylate (DPGDA)	$C_{12}H_{18}O_5$
55818-57-0	Bisphenol-A-epichlorohydrin copolymer acrylate (EPOXY ACRYLATE)	$(C_{15}H_{16}O_2.C_3H_5ClO)_x.xC_3H_4O_2$

The monomers are generally known as multifunctional acrylates (MFAs) or multifunctional methacrylates (MFMAs) depending on whether the functional groups are acrylate or methacrylate. The monomers generally contain stabilizers/inhibitors, which include but are not limited to Hydroquinone, Methyl Hydroquinone, and Butylated Hydroxy Toluene. The monomers are either difunctional or trifunctional (having 2 or 3

[10] 90 FR 17044, April 23, 2025.

functional groups/molecule), have viscosities of 9 to 15 centipoise (cPs) at 25 degrees Celsius (if difunctional) or 44 to 110 cPs at 25 degrees Celsius (if trifunctional), have (meth) acrylate equivalent weights (molecular weight per number of functional groups) between 99 and 158 and molecular weights between 226 and 472 grams per mol.

The acrylated bisphenol-A epoxy based oligomer is commonly referred to as epoxy acrylate or acrylated epoxy. In contrast to epoxy resin, the main characteristic of the epoxy acrylate oligomer is that it contains acrylate functional groups which make them curable by free-radical polymerization. The epoxy acrylate has a molecular weight between 508 to 536 grams per mol and a viscosity of 2400 to 3600 cPs at 65 degrees Celsius. The epoxy acrylate generally contains stabilizers/inhibitors, which include but are not limited to Hydroquinone, Methyl Hydroquinone, and Butylated Hydroxy Toluene.

Certain monomers and oligomers are subject to the scope even if an in-scope monomer or oligomer is blended or mixed with one or more other in-scope monomers or oligomers.

Certain monomers and oligomers in any blend or mixture are also subject to the scope, so long as the blend or mixture contains no less than 20 percent by weight of in-scope CMOs.

The scope includes merchandise matching the above description that has been processed in a third country, including by commingling, diluting, introducing, or removing ingredients, or performing any other processing that would not otherwise remove the merchandise from the scope of the investigations if performed in the subject country.

The scope also includes CMOs that are commingled, mixed or blended with in-scope product from sources not subject to these investigations.

Only the subject component(s) of such blends, mixtures or commingled products described above is covered by the scope of these investigations. Subject merchandise contained in a blended, mixed or commingled product described above will not have undergone a chemical reaction as a result of being blended, mixed or commingled.

Notwithstanding the above, specifically excluded from the scope are downstream products, including but not limited to, inks, coatings and overprint varnishes. For purposes of this exclusion, the downstream product requires only the application of energy to be cured, e.g.*, inks or varnish applied to packaging, coatings applied to wood flooring,* etc*. The*

energy source required to cure the downstream product to its substrate can be thermal, ultraviolet radiation, visible light, electron beam radiation, or infrared radiation.

Tariff treatment

Based upon the scope set forth by Commerce, information available to the Commission indicates that the merchandise subject to these investigations is provided for under statistical reporting numbers 2916.12.5050, 2916.14.2050, 3824.99.2900, 3907.29.0000 and 3907.30.0000 of the Harmonized Tariff Schedule of the United States ("HTSUS" or "HTS"). Subject merchandise may also be imported under HTS statistical reporting numbers 2916.12.1000 and 3824.99.9397.

The 2025 general rate of duty is 3.7 percent ad valorem for HTS subheadings 2916.12.50 and 2916.14.20; 6.5 percent ad valorem for HTS subheadings 2916.12.10, 3824.99.29, and 3907.29.00; 6.1 percent ad valorem for HTS subheading 3907.30.00; and 5 percent for HTS subheading 3824.99.93.[11] Since March 15, 2012, the import duty applicable to these goods originating from South Korea is "free" under the U.S.-Korea Free Trade Agreement (KORUS FTA), upon proper importer claim. Decisions on the tariff classification and treatment of imported goods are within the authority of U.S. Customs and Border Protection.

IEEPA

Effective April 5, 2025, merchandise originating in South Korea and Taiwan is subject to an additional 10 percent ad valorem reciprocal duty under IEEPA.[12] Effective April 9, 2025, South Korea was instead assigned an individualized country reciprocal duty of 25 percent ad valorem, and Taiwan was instead assigned an individualized reciprocal duty of 32 percent ad valorem. However, effective April 10, 2025, individualized reciprocal duties were suspended, and the reciprocal duty rate for MAMMOs originating in South Korea and Taiwan was returned to 10 percent.[13]

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[11] USITC, HTS (2025) Revision 10, Publication 5615, April 2025.

[12] 90 FR 15041, April 7, 2025. See also HTS heading 9903.01.25 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 99.3.6, 99.3.298.

[13] Individualized reciprocal duties for all subject sources other than China were suspended until July 9, 2025. 90 FR 15041, April 7, 2025. 90 FR 15625, April 15, 2025. See also HTS headings 9903.01.25, 9903.01.54, and 9903.01.61 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. 99.3.12, 99.3.298, 99.3.305, 99.3.321 to 99.3.329.

The product

Description and applications

The products subject to these investigations are multifunctional acrylate monomers, multifunctional methacrylate monomers[14], acrylated bisphenol-A epoxy-based oligomers, and blends containing either the monomer or the oligomer, collectively referred to as MAMMOs. As shown in table 1.2, MAMMOs have the following characteristics: 1) a specific Chemical Abstract Service (CAS) number; 2) two or three functional sites per molecule[15]; 3) a viscosity in the range of 9 to 15 cPs at 25°C for difunctional monomers and 44 to 110 cPs at 25°C for trifunctional monomers; and 4) a molecular weight in the range of 226 to 472 g/mol.[16] [17] MAMMOs are curable resins, existing in liquid form, and have low to clear color.[18]

[14] Multifunctional acrylates have acrylates as their functional groups while multifunctional methacrylates have methacrylates as their functional groups; Petition, vol. I, p. I.4.

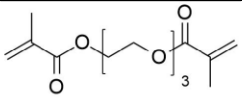
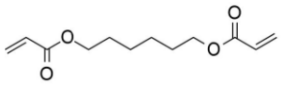
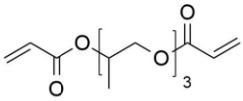
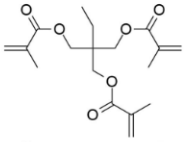
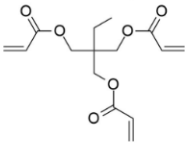
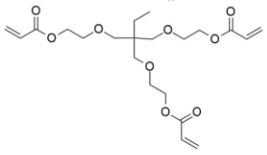
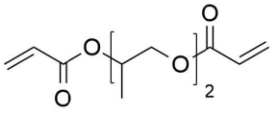
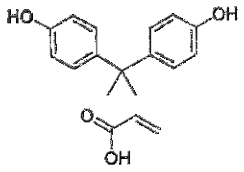
[15] Monomers are classified as either monofunctional or multifunctional and usually contain some stabilizers and inhibitors, which aid in shelf-life stability. Petition, vol. I, p. I.4; conference transcript, pp. 87 to 88 (McClung).

[16] The epoxy acrylate oligomer has a molecular weight in the range of 508 to 536 g/mol and a viscosity in the range of 2400 to 2400 cPs at 65°C. Petition, supplemental 2.I.1, pp. 1 to 2.

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

[18] Conference transcript, p. 62 (Klang).

Table 1.2: List of In-Scope MAMMOs Products

CAS No.	Description	Arkema Product No.	Category	No. of Functional Groups	Molecular Weight (g/mol)	Viscosity at 25°C (cPs)	Structure
109-16-0	Triethylene glycol dimethacrylate (TEGDMA)	SR205	Monomer	2	286	11	
13048-33-4	1,6-hexanediol diacrylate (HDDA)	SR238	Monomer	2	226	9	
42978-66-5	Tripropylene glycol diacrylate (TPGDA)	SR306F	Monomer	2	300	15	
3290-92-4	Trimethylolpropane trimethacrylate (TMPTMA)	SR350	Monomer	3	338	44	
15625-89-5	Trimethylolpropane triacrylate (TMPTA)	SR351H	Monomer	3	296	106	
28961-43-5	Ethoxylated trimethylol-propane triacrylate (EOTMPTA)	SR454	Monomer	3	429	110	
57472-68-1	Dipropylene glycol diacrylate (DPGDA)	SR508	Monomer	2	242	10	
55818-57-0	Bisphenol-A-epichlorohydrin copolymer acrylate (Epoxy Acrylate)	CN110	Oligomer	3	518	2400 to 3600	

Source: Adapted from technical data sheets provided by the petitioner's website, Arkema (Sartomer), "TDS and Literature," accessed various dates, https://sartomer.arkema.com/en/documents/tds--literature/.

MAMMOs share the following characteristics—they are: uncured (i.e., existing in liquid form at room temperature), provide desirable chemical properties to downstream products (e.g., durability, scratch and chemical resistance), formed from chemical reactions primarily involving (meth)acrylic acid, and highly conducive to curing (i.e., very reactive to applications of energy sources such as ultraviolet (UV) radiation).[19] Table 1.2 lists seven different monomers and one oligomer. A customer may decide to go with a specific monomer over another based

[19] Petition, vol. I, p. I.7; petitioner's postconference brief, p. 3.

on the desired characteristics of the downstream product. For example, trimethylolpropane triacrylate (TMPTA) would be favored if fast curing times are needed while 1,6-hexanediol diacrylate (HDDA) would be preferred if the customer requires more adhesion.[20]

The lone oligomer[21] is bisphenol-A epichlorohydrin copolymer acrylate, which is also known as acrylated epoxy or epoxy acrylate.[22] Epoxy acrylate oligomers possess vinyl ester groups with carbon-carbon double bonds at the end of the epoxy resin; furthermore, these oligomers provide desirable properties to downstream products such as chemical resistance, flexibility, hardness, non-yellowing properties, and adhesiveness.[23] The epoxy backbone provides toughness to cured film, and the carbon-carbon and ether bonds improve its chemical resistance.[24]

MAMMOs are primarily used as an input by manufacturers of downstream products, commonly known as formulators.[25] Formulators use MAMMOs as a raw (or base) material to produce radiation-curable applications for products such as inks, overprint varnishes (OPV)[26], and coatings.[27] Further downstream, for example, wood flooring manufacturers use these coatings for their products to be used in in residential construction and home improvement products, and packaging manufacturers use OPV on their products as well.[28] [29] [30] Representatives of the Petitioner testified that MAMMOs are commercial, off-the-shelf commodity products.[31] Formulators commonly purchase MAMMOs to be mixed with other

[20] Conference transcript, p. 48 (McClung).

[21] According to the petitioner, the MAMMO industry refers to bisphenol-A-epichlorohydrin copolymer acrylate (epoxy acrylate) as an "oligomer," even though it technically does not meet the definition of an "oligomer," since epoxy acrylate does not contain the repeating monomer units. Petition, vol. I, p. I.7; petition, vol. I, p. I.1.

[22] Petition, vol. I, p. I.5.

[23] Park et. al, "UV— and Thermal—Curing Behaviors of Dual—Curable Adhesives Based on Epoxy Acrylate Oligomers," International Journal of Adhesion and Adhesives, vol. 29, issue 7, 2009, pp. 710 to 717, https://doi.org/10.1016/j.ijadhadh.2009.02.001.

[24] Park et. al, "UV— and Thermal—Curing Behaviors of Dual—Curable Adhesives Based on Epoxy Acrylate Oligomers," International Journal of Adhesion and Adhesives, vol. 29, issue 7, 2009, pp. 710 to 717, https://doi.org/10.1016/j.ijadhadh.2009.02.001.

[25] Conference transcript, pp. 40 to 41 (Crans).

[26] OPV is a clear coating applied over the printed layer of a package to provide additional protection or promote a glossy appearance. Conference transcript, p. 32 (Crans).

[27] Petition, vol. I, p. I.7.

[28] Conference transcript, p. 5 (Mintzer).

[29] Conference transcript, p. 33 (Crans, Szamosszegi).

[30] Conference transcript, p. 40 (Crans).

[31] Conference transcript, p. 5 (Mintzer).

materials (which may include MAMMOs) to produce their products.[32] Since MAMMOs do not contain the raw materials needed to start the curing process such as thermal initiators or photoinitiators, they cannot be used solely on their own.[33] The downstream products can be cured with the following energy sources: UV radiation, electron beam radiation, infrared radiation, thermal radiation, and visible light.[34]

UV-curing systems are commonplace due to their chemical stability, ability to cure at ambient temperature (solvent-free), high dimensional stability, and rapid production rate.[35] Due to their relatively low energy consumption and low volatile organic compound (VOC), UV curable coatings are considered to be one of the most environmentally friendly coating systems.[36] The radiation curing process of inks, sealants, coatings, and adhesives is a fast process, whereby the liquid form of monomers and oligomers are instantly polymerized (i.e., crosslinked) into solid form.[37] For electron beam curing systems, the curing process is not disrupted by the presence of fillers or pigments.[38] UV-curing systems require the use of photoinitiators, while electron beam curing systems do not.[39] Figure 1.1 provides a visual representation of the curing process for dual-curable resins—that is, resins that are capable of being cured via multiple sources of radiation, which offer flexibility in curing and sometimes higher bond strength along with better mechanical properties.[40]

[32] Conference transcript, p. 40 (Crans).

[33] Conference transcript, p. 17, 34 (Crans).

[34] Petition, vol. I, p. I.6.

[35] Park et. al, "UV— and Thermal—Curing Behaviors of Dual—Curable Adhesives Based on Epoxy Acrylate Oligomers," International Journal of Adhesion and Adhesives, vol. 29, issue 7, 2009, pp. 710 to 717, https://doi.org/10.1016/j.ijadhadh.2009.02.001.

[36] Kardar et. al, "Using Mixture Experimental Design to Study the Effect of Multifunctional Acrylate Monomers on UV Cured Epoxy Acrylate Resins," Progress in Organic Coatings, vol. 64, issue 1, 2009, pp. 74 to 80, https://doi.org/10.1016/j.porgcoat.2008.07.022.

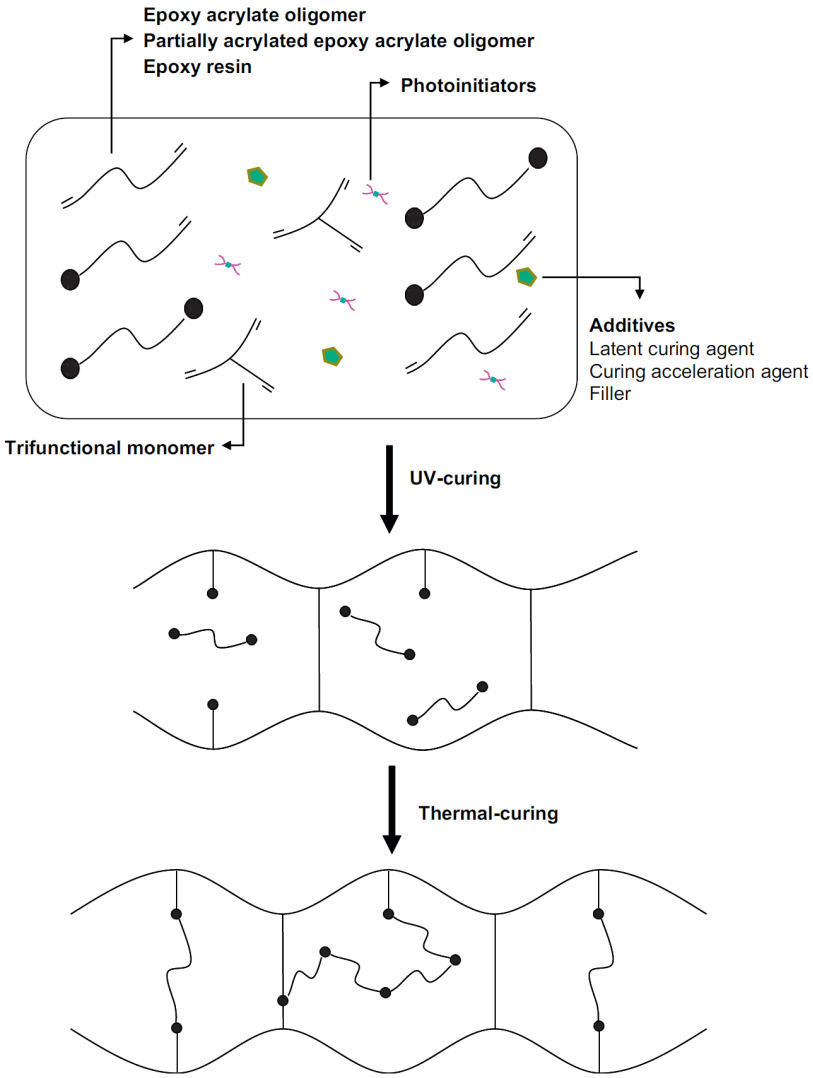
[37] Kardar et. al, "Using Mixture Experimental Design to Study the Effect of Multifunctional Acrylate Monomers on UV Cured Epoxy Acrylate Resins," Progress in Organic Coatings, vol. 64, issue 1, 2009, pp. 74 to 80, https://doi.org/10.1016/j.porgcoat.2008.07.022.

[38] Allnex, "Allnex Webinar on Electron Beam (EB) Curing," Video, 4:19, November 7, 2018, https://www.youtube.com/watch?v=CC5XMEAVXbU.

[39] Allnex, "Allnex Webinar on Electron Beam (EB) Curing," Video, 5:00, November 7, 2018, https://www.youtube.com/watch?v=CC5XMEAVXbU.

[40] Park et. al, "UV— and Thermal—Curing Behaviors of Dual—Curable Adhesives Based on Epoxy Acrylate Oligomers," International Journal of Adhesion and Adhesives, vol. 29, issue 7, 2009, pp. 710 to 717, https://doi.org/10.1016/j.ijadhadh.2009.02.001.

Figure 1.1 Diagram of the curing process for dual-curable resins



Source: Park et. al, "UV— and Thermal—Curing Behaviors of Dual—Curable Adhesives Based on Epoxy Acrylate Oligomers," International Journal of Adhesion and Adhesives, vol. 29, issue 7, 2009, pp. 710 to 717, https://doi.org/10.1016/j.ijadhadh.2009.02.001.

U.S. producers of MAMMOs also produce out-of-scope monomers and oligomers that industry witnesses referred to as "specialty products".[41] When compared to MAMMOs, the specialty products are manufactured with tighter production tolerances and impart different physical characteristics (e.g., more advanced performance characteristics).[42] In comparison to the production batch sizes of MAMMOs, the batch sizes for specialty products tend to be smaller.[43] Out-of-scope MAMMOs have different viscosities and molecular weights along with

[41] Conference transcript, p. 19 (McClung).
[42] Conference transcript, p. 20 (McClung).
[43] Conference transcript, p. 21 (McClung); petitioner's postconference brief, p. 8.

different end uses such electronic applications, UV gel nail products, 3D printing, ink-jet printing, automotive, and specialty industrial applications.[44] Finally, out-of-scope MAMMOs cannot be used in place of in-scope MAMMOs due to the difference in physical properties (e.g., adhesion, toughness, flexibility) and compatibility issues, as specialty products can sometimes require intensive year-long certification processes.[45]

Manufacturing processes

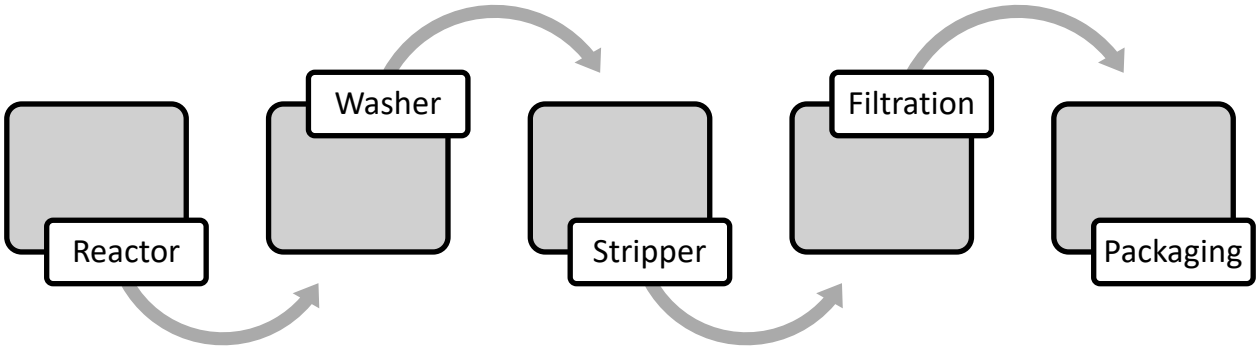
All MAMMOs are produced via a chemical reaction in a reactor using the following inputs: raw materials, catalysts, stabilizers, and inhibitors.[46] For both monomers and oligomers, (meth)acrylic acid is a major input; and the initial raw material could be either acrylic acid or methacrylic acid.[47] On the one hand, acrylates tend to cure more quickly; on the other hand, methacrylates cure more slowly but have better strength and heat resistance after curing, so the raw material chosen will be dependent upon the final product specifications.[48]

As shown in figure 1.2, for the monomer production process, the first stage takes place inside the reactor where the raw materials (i.e., (meth)acrylic acid and alcohol)[49], catalyst, stabilizers, and inhibitors are added to undergo a chemical reaction.[50] For monomers, (meth)acrylic acid is combined with an alcohol[51], and the resulting esterification reaction results in water as a byproduct. The second stage takes place inside the washer.[52] At the end of the esterification process, water and a base chemical *** are added to ***.[53] During the washing stage, two layers are formed—an aqueous layer and an organic layer; the aqueous layer contains the unwanted impurities

[44] Conference transcript, p. 19 (McClung); conference transcript, p. 14 (Crans).
[45] Conference transcript, p. 15 (Crans); petitioner's postconference brief, p. 7.
[46] Petition, vol. I, p. I.7.
[47] Conference transcript, p. 64 (Klang).
[48] Conference transcript, p. 64 (Klang).
[49] The raw material for the oligomer production process would be the bisphenol A-based liquid epoxy resin instead of alcohol. Conference transcript, p. 68 (Klang).
[50] The catalyst speeds up the chemical reaction, and the stabilizers and inhibitors are used to guard against premature polymerization. Stabilizers and inhibitors may include hydroquinone, methyl hydroquinone, and butylated hydroxy toluene. Conference transcript, p. 65 (Klang); email from ***, April 17, 2025.
[51] The alcohol being used can include trimethylolpropane, 1,4-butanediol, 1,6-hexanediol, etc. Email from ***, April 17, 2025.
[52] The second and third stages of the washer and stripper do not apply to the oligomer production process. Conference transcript, p. 65 (Klang).
[53] Email from ***, April 17, 2025.

while the organic solvent layer contains the desired product.[54] The excess raw materials and impurities are removed either by titration or HPLC (high performance liquid chromatography).[55]

Figure 1.3 Simplified manufacturing process of MAMMOs (monomers)



Source: Adapted from Petition, exh. I.4.

The third stage involves the stripper in which the organic solvent that was previously used to facilitate the prior chemical reactions is removed via vacuum distillation so that the desired product can be isolated.[56] The recovered solvent is then sent elsewhere to be re-used in future batches.[57] Inhibitors are also added to prevent polymerization during the stripping process and subsequent storage.[58] Lastly, the final stages involve filtering[59] the liquid products and then packaging them into 55-gallon drums, intermediate bulk container (IBC) totes, or in bulk (i.e., tank trucks). [60] [61] The shelf life of the MAMMOs ranges from six months from the date of shipment to two years after the date of manufacturer.[62]

For the oligomer production process, (meth)acrylic acid is combined with a bisphenol A-based epoxy resin.[63] Epoxy acrylate does not require further processing after the reactor stage.[64] Unlike the monomer production process, the oligomer production process does not

[54] Email from ***, April 17, 2025.
[55] The removed impurities are sent to disposal. Conference transcript, pp. 65, 85 to 86 (Klang); email from ***, April 17, 2025.
[56] Conference transcript, pp. 65 to 66.
[57] Email from ***, April 17, 2025.
[58] Email from ***, April 17, 2025.
[59] Products are generally filtered via a 1-micron mesh filter. Conference transcript, p. 66 (Klang).
[60] IBC totes hold about 275 gallons of liquid product. Conference transcript, p. 66 (Crans).
[61] Petitioner's postconference brief, exh. 1, p. 5.
[62] Conference transcript, p. 87 to 88 (McClung, Crans)
[63] Conference transcript, p. 68 (Klang).
[64] Petition, vol. I, p. I.8.

involve esterification (so water is not generated as a byproduct), does not require solvent, and does not require the washing step.[65]

Domestically, MAMMOs are typically produced in the same manufacturing facilities with employees working on both monomer and oligomer production lines, and there is no information in the record as to whether the foreign industry utilizes a similar production process.[66] MAMMOs are sold "neat"[67], but they can also be blended to create a finished product based on customer requirements. In certain cases, the monomers and oligomers (both in neat form) are blended to form a mixture of two or more products—no chemical reaction takes place during this blending process.[68] For this blended product, the monomer is added to the oligomer once the monomer leaves the reactor but before the filtration and packaging step.[69]

Domestic like product issues

The petitioner proposes that the Commission define a single domestic like product co-extensive with the scope. There were no respondents to these investigations.

[65] Conference transcript, pp. 66 to 67 (Klang).

[66] Conference transcript, p. 67 (Krans); petitioner's postconference brief, pp. 4 to 5.

[67] Neat products are straight, pure products that are not diluted with other substances and refers to one of the eight identified products in table 1.2. Conference transcript, p. 49 (Mintzer).

[68] Conference transcript, p. 67 (Klang).

[69] Petition, vol. I, p. I.7; conference transcript, p. 36 (Mintzer).

Part 2: Conditions of competition in the U.S. market

U.S. market characteristics

MAMMOs are curable resins used in the production of inks, wood coatings, and overprint varnishes.[1] The U.S. MAMMOs market is supplied by two U.S. producers (Allnex and Arkema), subject imports from South Korea and Taiwan, and imports from nonsubject countries.

*** U.S. producers and 12 importers indicated that the U.S. MAMMOs market was not subject to distinctive conditions of competition. However, four importers described distinctive conditions of competition. Importer *** stated that MAMMOs are "some of the most commoditized products" in the acrylate/methacylate markets. It added that U.S. producer and importer Arkema has a competitive advantage over its competitors because it is the only supplier that is backward integrated in acrylic acid (the primary raw material in MAMMOs). Importer *** stated that MAMMOs customers always seek the lowest prices, subject to required quality and other specifications. Importer *** stated that regulatory issues and the push by MAMMOs purchasers toward lower cost water-based product are distinctive conditions. Importer *** described numerous distinctive conditions of competition, including tariff differences between Korean and Taiwanese product; the ability of Korean producers to ethoxylate monomers before acrylation (a process which Taiwanese producers must outsource, leading to increased costs); faster shipping for product from Korea than from Taiwan; customer loyalty; and other differences in MAMMOs from different sources, including quality, brand, color, viscosity, etc.

Apparent U.S. consumption of MAMMOs fluctuated during January 2022 to December 2024. From 2022 to 2023, consumption fell *** percent. It then rose *** percent from 2023 to 2024. Overall, apparent U.S. consumption decreased by *** percent from 2022 to 2024.

Channels of distribution

Table 2.1 presents channels of distribution for MAMMOs in the U.S. market. U.S. producers and importers were asked to report their shipments to distributors, ink manufacturers, and all other end users. U.S. producers sold mainly to *** throughout the period of investigation. Importers from South Korea sold mainly to *** throughout the period of investigation. Importers from Taiwan sold a majority of

[1] Conference transcript, p. 5 (Mintzer).

their shipments to *** in 2022 and 2023 and a plurality to *** in 2024.

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

Shares in percent.

Source	Channel	2022	2023	2024
United States	Distributors	***	***	***
United States	Ink manufacturers	***	***	***
United States	All other end users	***	***	***
South Korea	Distributors	***	***	***
South Korea	Ink manufacturers	***	***	***
South Korea	All other end users	***	***	***
Taiwan	Distributors	***	***	***
Taiwan	Ink manufacturers	***	***	***
Taiwan	All other end users	***	***	***
Subject sources	Distributors	***	***	***
Subject sources	Ink manufacturers	***	***	***
Subject sources	All other end users	***	***	***
Nonsubject sources	Distributors	***	***	***
Nonsubject sources	Ink manufacturers	***	***	***
Nonsubject sources	All other end users	***	***	***
All import sources	Distributors	***	***	***
All import sources	Ink manufacturers	***	***	***
All import sources	All other end users	***	***	***

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

Note: Importer ***.

Geographic distribution

U.S. producers reported selling MAMMOs to *** (table 2.2). Importers reported selling to all regions, with the majority of importers from South Korea and Taiwan reporting shipments to the Northeast, Midwest, and Southeast. 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 MAMMOs: Count of U.S. producers' and U.S. importers' geographic markets

Count in number of firms reporting.

Region	U.S. producers	South Korea	Taiwan	Subject sources
Northeast	***	4	7	11
Midwest	***	6	7	13
Southeast	***	4	7	11
Central Southwest	***	1	4	5
Mountain	***	2	2	4
Pacific Coast	***	2	4	6
Other	***	0	0	0
All regions (except Other)	***	1	2	3
Reporting firms	2	6	7	13

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 MAMMOs from U.S. producers and from subject sources.

Table 2.3 MAMMOs: Supply factors that affect the ability to increase shipments to the U.S. market, by country

Quantity in 1,000 pounds contained MAMMOs; ratio and share in percent; Count in number of firms reporting

Factor	Measure	United States	South Korea	Taiwan
Capacity 2022	Quantity	***	***	***
Capacity 2024	Quantity	***	***	***
Capacity utilization 2022	Ratio	***	***	***
Capacity utilization 2024	Ratio	***	***	***
Inventories to total shipments 2022	Ratio	***	***	***
Inventories to total shipments 2024	Ratio	***	***	***
Home market shipments 2024	Share	***	***	***
Non-US export market shipments 2024	Share	***	***	***
Ability to shift production (firms reporting “yes”)	Count	***	***	***

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

Note: Responding U.S. producers accounted for *** U.S. production of MAMMOs in 2024. Responding foreign producer/exporter firms accounted for all or almost all of U.S. imports of MAMMOs from South Korea or Taiwan during 2024. 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 Parts 3 and 7.

Domestic production

Based on available information, U.S. producers of MAMMOs have the ability to respond to changes in demand with large changes in the quantity of shipments of U.S.-produced MAMMOs to the U.S. market. The main contributing factor to this degree of responsiveness of supply is the availability of unused capacity. Mitigating factors include moderately low inventories, little ability to shift shipments from alternate markets, and no ability to shift production to or from alternate products.

U.S. producers’ capacity and production decreased during 2022 to 2024, while having relatively stable capacity utilization. Most U.S. producers’ shipments were to the U.S. market, and inventories were relatively unchanged from 2022 to 2024.

Subject imports from South Korea

Based on available information, ***, the only responding South Korean producer of MAMMOs, has the ability to respond to changes in demand with large changes in the quantity of shipments of MAMMOs to the U.S. market. The main contributing factors to this degree of responsiveness of supply are the availability of some unused capacity, a demonstrated ability to

increase capacity, moderate inventories, the ability to produce other products, and a large share of shipments to third-country markets.

*** capacity increased faster than its production increased leading to a decline in capacity utilization during 2022 to 2024. Its inventories also increased *** over 2022 to 2024. *** of its shipments were to third-country markets. *** indicated that it could also produce *** using the same equipment as it uses to produce MAMMOs.

Subject imports from Taiwan

Based on available information, producers of MAMMOs from Taiwan have the ability to respond to changes in demand with large changes in the quantity of shipments of MAMMOs to the U.S. market. The main contributing factors to this degree of responsiveness of supply are the availability of unused capacity, a demonstrated ability to increase capacity, moderate inventories, the ability to shift shipments from alternate markets, and some ability to shift production to or from alternate products.

Taiwanese producers increased capacity and production, leading to an increase in capacity utilization during 2022 to 2024; however, their capacity utilization level in 2024 could allow increases in shipments. Inventories increased slightly during 2022 to 2024. Approximately *** of shipments were to third-country markets, and two Taiwanese producers indicated that they could produce other products on the same equipment used to produce MAMMOs. These reported alternate products include ***.

Imports from nonsubject sources

Based on questionnaire responses, nonsubject imports accounted for *** percent of total U.S. imports in 2024, less than the 2022 share of *** percent. Nonsubject countries supplying MAMMOs to the U.S. market included China, Belgium, and Germany, all of which are among the largest global exporters of MAMMOs.

Supply constraints

*** and 12 importers indicated that they had not experienced supply constraints since January 1, 2022. *** and three *** importers indicated that they had in 2022. *** described raw material limitations still in place in 2022 (after the COVID-19 pandemic), resulting in ***

***. It indicated that these conditions had mostly ended by June 2022. Importer *** also noted global feedstock (raw material) shortages from 2021 persisted into 2022. In addition, *** described other disruptions including freezing weather in Texas, alcohol feedstock shortages in East Asia, and a plant explosion and floods in Europe. It indicated that these disruptions were resolved by the third quarter of 2022, at which point the MAMMOs market became oversupplied. Importer *** described experiencing global logistics bottlenecks and port delays, especially early in 2022, due to post-COVID-19 demand surges and container shortages. Importer *** also indicated that it experienced supply constraints in 2022.

Only two firms described experiencing supply constraints in 2023 or 2024. In 2023, importer *** stated that it experienced supply constraints due to lingering logistics issues and raw material tightness in Asia, but added that these conditions improved and that purchasers' inventory overhang limited demand. In 2024, *** indicated that Houthi attacks in the Red Sea (making use of the Suez Canal impractical) had increased shipping times and costs. Importer *** described constraints in 2024 due to ***.

U.S. demand

Based on available information, the overall demand for MAMMOs is likely to experience small-to-moderate changes in response to changes in price. The main contributing factor is the somewhat limited range of substitute products and a highly variable cost share of MAMMOs in most of its end-use products.

End uses and cost share

U.S. demand for MAMMOs depends on the demand for U.S.-produced downstream products, particularly in the coatings industry. Reported end uses include overprint varnishes, curable inks, and coatings, including for wood flooring.[2]

MAMMOs accounts for a highly variable share of the cost of the end-use products in which they are used. Reported cost shares for some end uses were as follows:

- Overprint varnish (OPV) (80-85 percent)
- Inks (20- 80 percent)
- Coating (15-90 percent)
- Rubber compounding (5 percent)

[2] Conference transcript, p. 14 (Crans) and p.22 (Szamosszegi).

- Adhesives/Sealants (20 percent)

Business cycles

*** of the U.S. producers and 8 of 16 importers indicated that the market was subject to business cycles. Specifically, importer *** reported that the MAMMOs market picks up mid-year and slows down towards the end of the year. *** also reported that COVID-19 inventory corrections and destocking cycles impacted demand and pricing of MAMMOs during the period of investigation. Importer *** reported that TMPTA is the only product that has a "truly defined cycle due to heavy presence of traffic stripe coatings that are seasonal".

Demand trends

*** responding U.S. producers reported that domestic demand for MAMMOs *** since January 1, 2022. While ten importers reported that domestic demand for MAMMOs fluctuated down or steadily decreased, seven importers reported that domestic demand for MAMMOs fluctuated up or steadily increased. Importer *** reported that demand has fluctuated both up and down based on the shift to UV technology. Importer *** reported that the demand in the United States was due to the growth of the radiation curing market. Importer *** reported that due to the energy curing technology, the industry is able to apply the new technology which resulted in a market demand increase. Importer *** also reported UV technology having an impact on the demand in the United States.

*** reported that foreign demand for MAMMOs *** since January 1, 2022. Importers response to foreign demand for MAMMOs was more varied. Four importers reported that foreign demand for MAMMOs fluctuated down or steadily decreased, four importers reported that foreign demand for MAMMOs steadily increased or fluctuated up and five importers reported that foreign demand for MAMMOs had no change (table 2.4).

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

Market	Firm type	Steadily Increase	Fluctuate Up	No Change	Fluctuate Down	Steadily Decrease
Domestic demand	U.S. producers	***	***	***	***	***
Domestic demand	Importers	3	4	2	9	1
Foreign demand	U.S. producers	***	***	***	***	***
Foreign demand	Importers	1	3	5	3	1

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

Substitute products

*** U.S producers and the majority of importers reported that there were no substitutes for MAMMOs. Importer *** reported that MAMMOs may be substituted partially or fully with polyester acrylates, urethane acrylates, and vinyl ethers.

Substitutability issues

This section assesses the degree to which U.S.-produced MAMMOs and imports of MAMMOs from subject sources can be substituted for one another by examining the importance of certain purchasing factors and the comparability of MAMMOs 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 MAMMOs and MAMMOs imported from subject sources.[3] Factors contributing to this level of substitutability include interchangeability between domestic and subject sources. Factors reducing substitutability include issues cited by firmsin quality, availability, product range, and technical support.

[3] The degree of substitution between domestic and imported MAMMOs depends upon the extent of product differentiation between the domestic and imported products and reflects how easily purchasers can switch from domestically produced MAMMOs to the MAMMOs imported from subject sources (or vice versa) when prices change. The degree of substitution may include such factors as 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

Most important purchase factors

Purchasers responding to lost sales lost revenue allegations[4] were asked to identify the main purchasing factors their firm considered in their purchasing decisions for MAMMOs. The major purchasing factors identified by firms include availability, price, service/delivery, domestic sourcing, technical assistance, customer service, quality and business relationship, and competitive pricing.

The most often cited top three factors firms consider in their purchasing decisions for MAMMOs were quality (5 firms), availability/supply (5 firms), and price/cost (4 firms), as shown in table 2.5. Quality and price/cost (cited by 2 firms each) were the two most frequently cited first-most important factor, followed by availability/supply (1 firm); quality and availability/supply were the most frequently reported second-most important factor (2 firms each); and availability/supply and price/cost were the most frequently reported third-most important factor (2 firms each).

Table 2.5 MAMMOs: Count of ranking of factors used in purchasing decisions as reported by purchasers, by factor

Factor	First	Second	Third	Total
Quality	2	2	1	5
Availability / Supply	1	2	2	5
Price / Cost	2	0	2	4
All other factors	1	2	1	NA

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

Note: Other factors include service/delivery, domestic sourcing, technical approval, technical assistance, customer service, business relationship and support from vendor competitive pricing.

Lead times

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

[4] This information is compiled from responses by purchasers identified by Petitioners or other U.S. producers to the lost sales lost revenue allegations. See Part 5 for additional information.

Comparison of U.S.-produced and imported MAMMOs

In order to determine whether U.S.-produced MAMMOs can generally be used in the same applications as imports from South Korea or Taiwan, U.S. producers and importers were asked whether the products can always, frequently, sometimes, or never be used interchangeably. As shown in tables 2.6 to 2.7, *** reported that the MAMMOs from the United States and subject sources were always interchangeable. The majority of importers reported that MAMMOs from the United States, subject countries and nonsubject countries were always or frequently interchangeable. Importer *** reported that changing raw materials takes time due to the reformulation process of the product and the extensive testing until the final product is validated across the value chain.

Table 2.6 MAMMOs: Count of U.S. producers reporting the interchangeability between product produced in the United States and in other countries, by country pair

Country pair	Always	Frequently	Sometimes	Never
U.S. vs. South Korea	***	***	***	***
U.S. vs. Taiwan	***	***	***	***
South Korea vs. Taiwan	***	***	***	***
U.S. vs. Other	***	***	***	***
South Korea vs. Other	***	***	***	***
Taiwan vs. Other	***	***	***	***

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

Table 2.7 MAMMOs: Count of importers reporting the interchangeability between product produced in the United States and in other countries, by country pair

Country pair	Always	Frequently	Sometimes	Never
U.S. vs. South Korea	7	4	1	0
U.S. vs. Taiwan	6	3	0	0
South Korea vs. Taiwan	5	4	0	0
U.S. vs. Other	6	2	1	0
South Korea vs. Other	5	3	1	0
Taiwan vs. Other	5	3	0	0

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

In addition, U.S. producers and importers were asked to assess how often differences other than price were significant in sales of MAMMOs from the United States, subject, or nonsubject countries. As seen in tables 2.8 to 2.9, U.S. producers reported that differences other than prices are *** significant. *** reported its customers prefer a local supplier but that still does not “lessen the harm caused by subject imports.” A majority of responding importers reported that there are sometimes or never significant differences other than price. Of the importers that reported there are

frequently significant factors other than price, importer *** reported that imports from South Korea offered better batch consistency, zero import duties, shorter lead times, technical support and quality assurance, as well as better payment terms. Importers *** and *** reported that factors such as available inventory and technical support as significant factors aside from price. Importer *** also reported that product range and quality are significant factors other than price.

Table 2.8 MAMMOs: Count of U.S. producers reporting the significance of differences other than price between product produced in the United States and in other countries, by country pair

Country pair	Always	Frequently	Sometimes	Never
U.S. vs. South Korea	***	***	***	***
U.S. vs. Taiwan	***	***	***	***
South Korea vs. Taiwan	***	***	***	***
U.S. vs. Other	***	***	***	***
South Korea vs. Other	***	***	***	***
Taiwan vs. Other	***	***	***	***

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

Table 2.9 MAMMOs: Count of importers reporting the significance of differences other than price between product produced in the United States and in other countries, by country pair

Country pair	Always	Frequently	Sometimes	Never
U.S. vs. South Korea	0	4	6	1
U.S. vs. Taiwan	0	3	6	1
South Korea vs. Taiwan	0	2	5	1
U.S. vs. Other	0	2	5	1
South Korea vs. Other	0	2	5	1
Taiwan vs. Other	0	1	5	1

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

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 all of U.S. production of MAMMOs during 2024.[1]

U.S. producers

The Commission issued a U.S. producer questionnaire to three firms based on information contained in the petition and two firms provided usable data on their operations.[2] Table 3.1 lists U.S. producers of MAMMOs, their production locations, positions on the petition, and shares of total production.

Table 3.1 MAMMOs: U.S. producers, their positions on the petition, production locations, and shares of reported production, 2024

Firm	Position on petition	Production location(s)	Share of production
Allnex	Support	North Augusta, SC	***
Arkema	Petitioner	West Chester, PA Chatham, VA	***
All firms	Various	Various	100.0

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

[1] Arkema and Allnex Conference transcript, p. 6 (Mintzer).

[2] One additional firm, IGM Resins produced MAMMOs during the data collection period of these investigations. In June 2023, IGM Resins ceased domestic production following a partnership with Qualipoly Chemical Corporation. ***. Petition, vol. I, p. I-23; conference transcript, p. 9 (Montag).

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

Table 3.2 MAMMOs: 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.

As indicated in table 3.2, *** U.S. producers are related to foreign producers of the subject merchandise and *** U.S. producers are related to U.S. importers of the subject merchandise. In addition, as discussed in greater detail below, *** U.S. producers directly import the subject merchandise and *** purchase the subject merchandise from U.S. importers.

Table 3.3 presents events in the U.S. industry since January 1, 2022.

Table 3.3 MAMMOs: Important industry events since 2022

Item	Firm	Event
Plant closings	iGM Resins	On June 6, 2023, iGM Resins announced that it was closing its production facility in Charlotte, NC, as part of a restructuring move.
Plant openings	Miwon Specialty Chemical USA Inc.	On April 12, 2022, Miwon Specialty Chemical USA Inc., a South Korean producer of MAMMOs, commemorated the opening of its manufacturing facility in Richland County, SC. The facility produces the raw materials for inks, coatings, dry film photoresists, adhesives, and photopolymer printing plates (the raw materials are cured by exposure to UV light).
Relocation	Allnex	On November 11, 2024, Allnex announced that its Louisville, KY facility would cease all solvent borne reactor operations by the end of 2025. Allnex also announced that its East St. Louis facility would be the primary U.S. site for solvent borne resin production.

Table continued.

Table 3.3 (Continued) MAMMOs: Important industry events since 2022

Item	Firm	Event
Weather-related or force majeure events	Allnex	On July 10, 2022, a fire broke out at Allnex's East St. Louis, IL resin manufacturing plant. Production was halted after an explosion occurred in a catalyst charging tank containing peroxide. Two employees were injured, and the damages include the roof of the production building and areas surrounding the catalyst tank.
Weather-related or force majeure events	Aalchem	On May 21, 2024, a fire broke out inside a mixing room involving unknown chemicals at the Aalchem's facility in Sparta, MI.
Other	iGM Resins and Qualipoly	On February 21, 2023, iGM Resins (provider of energy curing raw materials) partnered with Qualipoly Chemical Corp. for an exclusive supply and distribution agreement.

Source: Business North Carolina, "IGM Resins Shutting Charlotte Production Facility, Laying Off 58," June 28, 2023, https://businessnc.com/igm-resins-shutting-charlotte-production-facility-laying-off-58/; Miwon Specialty Chemical Co., Ltd., "Products Monomer," https://miwonsc.com/eng/Products/Monomer_1.html, accessed May 5, 2025; Columbia Business Report, "Chemical Company Celebrates Grand Opening of Richland County Facility," April 12, 2022, https://columbiabusinessreport.com/chemical-company-celebrates-grand-opening-of-richland-county-facility/; Coatings World, "Allnex Announces Strategic Investment in East St. Louis Site," November 21, 2024, https://www.coatingsworld.com/contents/view_breaking-news/2024-11-21/allnex-announces-strategic-investment-in-east-st-louis-site/; Repairer Driven News, "Fire Halts Production at East St. Louis Resin Manufacturing Plant," September 6, 2022, https://www.repairerdrivennews.com/2022/09/06/fire-halts-production-at-east-st-louis-resin-manufacturing-plant/; WZZM13, "No Injuries After Structure Fire, Possible Hazmat Situation in Sparta," May 21, 2024, https://www.wzzm13.com/article/news/local/possible-hazmat-situation-structure-fire-sparta/69-2c6af2ea-f949-4fe4-8392-92b3cac3491f; Paint & Coatings Industry, "iGM Resins Partners with Qualipoly for Supply and Distribution Agreement," February 21, 2023, https://www.pcimag.com/articles/111104-igm-resins-partners-with-qualipoly-for-supply-and-distribution-agreement.

Producers in the United States were asked to report any change in the character of their operations or organization relating to the production of MAMMOs since 2022. *** producers indicated in their questionnaires that they had experienced such changes. Table 3.4 presents the changes identified by these producers.

Table 3.4 MAMMOs: U.S. producers' reported changes in operations, since January 1, 2022

Type of change	Firm name and narrative response on changes in operations
Production curtailments	***
Production curtailments	***
Weather-related or force majeure events	***

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

U.S. production, capacity, and capacity utilization

Table 3.5 presents U.S. producers' installed and practical capacity and production on the same equipment. From 2022 to 2024, installed overall capacity decreased modestly by *** percent, while practical overall capacity and practical MAMMOs capacity decreased by *** percent and *** percent, respectively. These declines in capacity were driven by ***.[3] Among U.S. producers, *** had the highest installed overall capacity during the data collection period, accounting for over *** percent of installed overall capacity, practical overall capacity, and practical MAMMOs capacity between 2022 and 2024.

Table 3.5 MAMMOs: U.S. producers' installed and practical capacity and production on the same equipment as in-scope production, by period

Capacity and production in 1,000 pounds contained MAMMOs; utilization in percent

Item	Measure	2022	2023	2024
Installed overall	Capacity	***	***	***
Installed overall	Production	***	***	***
Installed overall	Utilization	***	***	***
Practical overall	Capacity	***	***	***
Practical overall	Production	***	***	***
Practical overall	Utilization	***	***	***
Practical MAMMOs	Capacity	***	***	***
Practical MAMMOs	Production	***	***	***
Practical MAMMOs	Utilization	***	***	***

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

Overall production decreased *** from *** pounds of contained MAMMOs in 2022 to *** pounds in 2023, before recovering by *** percent to *** pounds in 2024. Similarly, production of MAMMOs fell between 2022 and 2023 by *** percent to *** pounds in 2023 before increasing by *** percent to *** pounds in 2024.

As installed overall capacity and overall production declined, installed overall capacity utilization also fell *** percent during 2022–24. Particularly between 2022 and 2023, installed overall capacity utilization decreased from *** percent in 2022 to *** percent in 2023, before increasing to *** percent in 2024. Conversely, practical overall capacity utilization increased from *** percent in 2022 to *** percent in 2024, after a period low of *** percent in 2023.

[3] See tables 3.6 and 3.15 for more information regarding capacity constraints and changes.

Table 3.6 presents U.S. producers' reported narratives regarding practical capacity constraints.

Table 3.6 MAMMOs: U.S. producers' reported capacity constraints since January 1, 2022

Type of constraint	Firm name and narrative response on constraints to practical overall capacity
Existing labor force	***
Existing labor force	***
Supply of material inputs	***
Other constraints	***

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

Table 3.7 and figure 3.1 present U.S. producers' capacity, production, and capacity utilization. Practical MAMMOs capacity declined each year during 2022–24, from *** pounds in 2022 to *** pounds in 2024. U.S. MAMMOs production decreased by *** percent between 2022 and 2023, from *** pounds in 2022 to *** pounds in 2023, before increasing to *** pounds in 2024. As practical capacity and production decreased, MAMMOs capacity utilization increased slightly over the period from *** percent in 2022 to *** percent in 2024, following a period low of *** percent in 2023. In particular, *** MAMMOs capacity grew by *** percentage points throughout 2022–24, while *** MAMMOs capacity declined by *** percentage points over the same period.

*** accounted for a larger share of domestic MAMMOs production than *** during the data collection period, accounting for *** percent to *** percent of U.S. MAMMOs production during 2022–24.

Table 3.7 MAMMOs: U.S. producers' output, by firm and period

Practical capacity

Capacity in 1,000 pounds

Firm	2022	2023	2024
Allnex	***	***	***
Arkema	***	***	***
All firms	***	***	***

Table continued.

Table 3.7 (Continued) MAMMOs: U.S. producers' output, by firm and period

Production

Production in 1,000 pounds

Firm	2022	2023	2024
Allnex	***	***	***
Arkema	***	***	***
All firms	***	***	***

Table continued.

Table 3.7 (Continued) MAMMOs: U.S. producers' output, by firm and period

Capacity utilization

Capacity utilization in percent

Firm	2022	2023	2024
Allnex	***	***	***
Arkema	***	***	***
All firms	***	***	***

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

Table continued.

Table 3.7 (Continued) MAMMOs: U.S. producers' output, by firm and period

Share of production

Share in percent

Firm	2022	2023	2024
Allnex	***	***	***
Arkema	***	***	***
All firms	100.0	100.0	100.0

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

Figure 3.1 MAMMOs: U.S. producers' output, by period

* * * * * * *

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

By product type

As shown in table 3.8, about *** percent of MAMMOs produced by U.S. producers were monomers during the period of data collection. *** firms reported producing monomers and oligomers. Monomer capacity and production followed overall MAMMOs output trends, as monomer capacity declined by *** percent and monomer production decreased by *** percent during 2022–24. As a result, monomer capacity utilization increased by *** percentage points between 2022 and 2024.

Conversely, capacity utilization for oligomer production decreased overall, from *** percent in 2022 to *** percent in 2024, following a period low of *** percent in 2023.

Table 3.8 MAMMOs: U.S. producers' U.S. capacity, production and utilization, by product type and period

Capacity and production in 1,000 pounds contained MAMMOs; Ratio and share in percent

Product type	Measure	2022	2023	2024
Monomers	Capacity	***	***	***
Oligomers	Capacity	***	***	***
All MAMMOs	Capacity	***	***	***
Monomers	Production	***	***	***
Oligomers	Production	***	***	***
All MAMMOs	Production	***	***	***
Monomers	Utilization	***	***	***
Oligomers	Utilization	***	***	***
All MAMMOs	Utilization	***	***	***
Monomers	Share of production	***	***	***
Oligomers	Share of production	***	***	***
All MAMMOs	Share of production	100.0	100.0	100.0

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

Alternative products

Table 3.9 presents U.S. producers' overall production on the same equipment as in-scope production, by product type and period. Between 2022 and 2024, *** percent to *** percent of the product produced by U.S. producers were MAMMOs. *** reported producing *** on the same equipment as in-scope product. U.S. producers referred to out-of-scope monomers and oligomers as specialty products that have different chemistries and require substantial cleaning and adjustments to produce on the same equipment as MAMMOs.[4] MAMMOs and in-scope blends, on the other hand, are considered "commodity products," produced in large batch sizes.[5]

Table 3.9 MAMMOs: U.S. producers' overall production on the same equipment as in-scope production, by product type and period

Quantity in 1,000 pounds contained MAMMOs; Share in percent

Product type	Measure	2022	2023	2024
MAMMOs	Quantity	***	***	***
Other products	Quantity	***	***	***
All products	Quantity	***	***	***
MAMMOs	Share	***	***	***
Other products	Share	***	***	***
All products	Share	100.0	100.0	100.0

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

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

Table 3.10 presents U.S. producers' U.S. shipments, export shipments, and total shipments. U.S. producers' U.S. shipments accounted for over *** percent of total U.S. producers' shipments during the period of data collection. *** reported export shipments, which accounted for *** percent of total shipments in quantity terms in 2024. U.S. producers' U.S. shipments decreased from *** pounds in 2022 to *** pounds in 2023, before increasing by *** percent to *** pounds in 2024. Compared to 2022, U.S. producers' U.S. shipments also declined by *** percent to *** in 2024. Moreover, export shipments fell overall by *** percent in quantity terms and ***

[4] Petitioner's postconference brief, p. 6 –7; petitioner's postconference brief, exh. 1, p. 9.

[5] Conference transcript, p. 72 (Mintzer); conference transcript, p. 73 (Crans); petitioner's postconference brief, p. 8.

percent in value terms during 2022–24. Unit values for U.S. shipments and export shipments were *** throughout the period of data collection and decreased each year.

Table 3.10 MAMMOs: U.S. producers' total shipments, by destination and period

Quantity in 1,000 pounds contained MAMMOs; value in 1,000 dollars; unit value in dollars per pound contained MAMMOs; shares in percent

Item	Measure	2022	2023	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
U.S. shipments	Share of value	***	***	***
Export shipments	Share of value	***	***	***
Total shipments	Share of value	100.0	100.0	100.0

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

Table 3.11 presents U.S. producers' U.S. shipments by type. Over *** percent of U.S. shipments in quantity and value terms were commercial U.S. shipments during the data collection period. Between 2022 and 2024, commercial U.S. shipments decreased overall by *** percent to *** pounds and *** percent to *** in 2024. Similarly, internal consumption, which comprised *** percent of U.S. shipments in value and quantity, decreased by *** percent in quantity terms and *** percent in value terms during 2022–24. The remaining U.S. shipments, transfers to related firms, were less than *** percent of U.S. shipments and grew by *** percent in quantity terms and decreased by *** percent in value terms. Notably, in 2023, commercial U.S. shipments, internal consumption, and transfers to related firms fell roughly *** percent in quantity and value terms. While many of these shipments increased between 2023 and 2024, all quantities and values were lower than 2022. Unit values for U.S. shipments declined throughout 2022–24.

Table 3.11 MAMMOs: U.S. producers' U.S. shipments, by type and period

Quantity in 1,000 pounds contained MAMMOs; value in 1,000 dollars; unit value in dollars per pound contained MAMMOs; shares in percent

Item	Measure	2022	2023	2024
Commercial U.S. shipments	Quantity	***	***	***
Internal consumption	Quantity	***	***	***
Transfers to related firms	Quantity	***	***	***
U.S. shipments	Quantity	***	***	***
Commercial U.S. shipments	Value	***	***	***
Internal consumption	Value	***	***	***
Transfers to related firms	Value	***	***	***
U.S. shipments	Value	***	***	***
Commercial U.S. shipments	Unit value	***	***	***
Internal consumption	Unit value	***	***	***
Transfers to related firms	Unit value	***	***	***
U.S. shipments	Unit value	***	***	***
Commercial U.S. shipments	Share of quantity	***	***	***
Internal consumption	Share of quantity	***	***	***
Transfers to related firms	Share of quantity	***	***	***
U.S. shipments	Share of quantity	100.0	100.0	100.0
Commercial U.S. shipments	Share of value	***	***	***
Internal consumption	Share of value	***	***	***
Transfers to related firms	Share of value	***	***	***
U.S. shipments	Share of value	100.0	100.0	100.0

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

Captive consumption

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

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

Transfers and sales

As reported in table 3.11, internal consumption accounted for between *** and *** percent of U.S. producers' U.S. shipments of MAMMOs in quantity and value terms from 2022 to 2024.

First statutory criterion in captive consumption

The first requirement for application of the captive consumption provision is that the domestic like product that is internally transferred for processing into that downstream article not enter the merchant market for the domestic like product. Table 3.12 presents U.S. producers' production used in downstream products by type of consumption. *** U.S. producer *** reported diverting MAMMOs intended for internal consumption to the merchant market. Between *** percent of MAMMOs for ***'s internal consumption was sold as is in each year throughout the data collection period. *** transfers of MAMMOs were reported by *** and were processed into downstream products during 2022–24.

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

Table 3.12 MAMMOs: U.S. producers' production used in downstream products, by type of consumption and period

Quantity in 1,000 pounds contained MAMMOs; shares in percent

Item	Measure	2022	2023	2024
Internal consumption: Sold as is	Quantity	***	***	***
Internal consumption: Processed into downstream products	Quantity	***	***	***
All internal consumption	Quantity	***	***	***
Internal consumption: Sold as is	Share	***	***	***
Internal consumption: Processed into downstream products	Share	***	***	***
All internal consumption	Share	100.0	100.0	100.0
Transfers: Sold as is	Quantity	***	***	***
Transfers: Processed into downstream products	Quantity	***	***	***
All transfers to related firms	Quantity	***	***	***
Transfers: Sold as is	Share	***	***	***
Transfers: Processed into downstream products	Share	***	***	***
All transfers to related firms	Share	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 "—".

Second statutory criterion in captive consumption

The second criterion of the captive consumption provision concerns whether the domestic like product is the predominant material input in the production of the downstream article that is captively produced. Table 3.13 presents U.S. producers' MAMMOs contribution to downstream products. With respect to the downstream articles resulting from captive production, MAMMOs reportedly comprises *** percent of the finished cost of downstream product.

Table 3.13 MAMMOs: U.S. producers' contribution of MAMMOs to downstream products

Shares in percent

Material input	Share of value	Share of quantity
MAMMOs	***	***
All other material inputs	***	***
All material inputs	100.0	100.0

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

U.S. producers' inventories

Table 3.14 presents U.S. producers' end-of-period inventories and the ratio of these inventories to U.S. producers' production, U.S. shipments, and total shipments. U.S. producers' inventories decreased by *** percent from 2022 to 2024. With respect to U.S. producers' production, U.S. producers' inventories increased from *** percent in 2022 to *** percent in 2023, then decreased to *** percent in 2024. The ratio of U.S. producers' inventories to U.S. shipments and total shipments followed a similar pattern remaining roughly flat after a period high in 2023.

Table 3.14 MAMMOs: U.S. producers' inventories and their ratio to select items, by period

Quantity in 1,000 pounds contained MAMMOs; ratio in percent

Item	2022	2023	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

No U.S. producers reported imports of MAMMOs from subject sources from 2022 to 2024.

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

No U.S. producers reported purchases of imports of MAMMOs from subject sources from 2022 to 2024.

U.S. employment, wages, and productivity

Table 3.15 shows U.S. producers' employment-related data. The number of production and related workers ("PRWs") and total hours worked, decreased irregularly by *** percent and *** percent, respectively, between 2022 and 2024. Hours worked per PRW also declined during this time by *** percent while wages paid increased by *** percent during 2022–24. Hourly wages increased by *** percent, as productivity increased irregularly by *** percent from 2022 to 2024. Unit labor costs increased by at least *** each year during that period.

Table 3.15 MAMMOs: U.S. producers' employment related information, by period

Item	2022	2023	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 (pounds contained MAMMOs per hour)	***	***	***
Unit labor costs (dollars per pound contained MAMMOs)	***	***	***

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

Part 4: U.S. imports, apparent U.S. consumption, and market shares

U.S. importers

The Commission issued importer questionnaires to 58 firms believed to be importers of subject MAMMOs, as well as to all U.S. producers of MAMMOs.[1] Usable questionnaire responses were received from 17 companies, representing an estimated *** percent of U.S. imports from subject sources and an estimated *** percent of U.S. imports from all sources in 2024.[2] Table 4.1 lists all responding U.S. importers of MAMMOs from South Korea and Taiwan and other sources, their locations, and their shares of U.S. imports, in 2024.[3]

[1] The Commission issued questionnaires to those firms identified in the petitions; staff research; and proprietary, Census-edited Customs' import records. Seven firms (***) certified that it had not imported MAMMOs in the United States at any time since January 1, 2022.

[2] MAMMOs are primarily imported under HTS statistical reporting numbers 2916.12.5050 and 2916.14.2050, which are basket categories covering various esters. The petitioner noted the inclusion of out-of-scope products within these HTS numbers. Furthermore, based on information from importer and foreign producer/exporter questionnaire responses and proprietary, Census-edited Customs' import records, Commission staff believe that a substantial majority of imports that enter under HTS statistical reporting numbers 2916.12.5050 and 2916.14.2050 are out-of-scope products. Therefore, the import data presented in this report are based on data submitted in response to the Commission's importer questionnaire.

Petitioner estimated that, in 2024, *** pounds of MAMMOs were imported from South Korea, *** pounds were imported from Taiwan, and *** pounds were imported from nonsubject sources. Petitions, vol. 1, exh. I-10. Questionnaire respondents reported *** pounds of U.S. imports from South Korea, *** pounds from Taiwan, and *** pounds from nonsubject sources. To calculate coverage, staff divided import quantities reported in questionnaires by a denominator that used the higher number between questionnaire data and the petitioner's estimates for each import source (i.e., questionnaire data for South Korea and nonsubject sources and the petitioner's estimate for Taiwan).

[3] Subject import and pricing data for *** are included throughout the report. However, Commission staff were unable to include its *** data due to reporting issues its questionnaire response.

Table 4.1 MAMMOs: U.S. importers, their headquarters, and share of imports within each source, 2024

Share in percent

Firm	Headquarters	South Korea	Taiwan	Subject sources	Nonsubject sources	All import sources
Aalchem	Grand Rapids, MI	***	***	***	***	***
Actega	Cinnaminson, NJ	***	***	***	***	***
Allnex	Alpharetta, GA	***	***	***	***	***
Arkema	Radnor, PA	***	***	***	***	***
Barentz	Avon, OH	***	***	***	***	***
Covestro	Pittsburgh, PA	***	***	***	***	***
DL Trading	Katy, TX	***	***	***	***	***
Eternal	South Chesterfield, VA	***	***	***	***	***
Everchem	Media, PA	***	***	***	***	***
GEO	Hythe, Southampton, UK	***	***	***	***	***
Miwon	Exton, PA	***	***	***	***	***
Pacific	Williamsville, NY	***	***	***	***	***
Rad-solutions	Flower Mound, TX	***	***	***	***	***
Rahn	Aurora,, IL	***	***	***	***	***
Soyventis	Morristown, NJ	***	***	***	***	***
Synth-Edge	Taoyuan City, Taiwan,	***	***	***	***	***
Teckrez	Jacksonville, FL	***	***	***	***	***
All firms	Various	100.0	100.0	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

Tables 4.2 and 4.3 as well as figure 4.1 present data for U.S. imports of MAMMOs from South Korea and Taiwan and all other sources. MAMMOs imports from all import sources decreased from *** pounds in 2022 to *** pounds in 2023, then increased to *** pounds in 2024, representing a *** percent increase from 2022. During that time, MAMMOs imports also decreased by value from $*** in 2022 to $*** in 2023, then increased to $*** in 2024, representing a *** percent decline in value from 2022.

Between 2022 and 2024, MAMMOs imports from subject sources increased irregularly from *** pounds to *** pounds in 2024. Since 2022, imports of MAMMOs from South Korea increased by *** percent to *** pounds in 2024, as imports from Taiwan increased by *** percent to *** pounds in 2024. In value terms, MAMMOs imports from South Korea decreased from $*** in 2022 to $*** in 2023, then increased to $*** in 2024, representing a *** decrease from 2022. Imports from Taiwan followed a similar pattern, decreasing from $*** in 2022 to $*** in 2023, then increasing to $*** in 2024, a *** percent decline from 2022. Unlike imports from subject sources, MAMMOs imports from nonsubject sources decreased each year in quantity terms during 2022–24. Specifically, since 2022, imports fell by *** percent to *** pounds and decreased by *** percent to $*** in 2024.

Unit values of MAMMOs imports from subject sources fell by *** percent from $*** per pound in 2022 to $*** per pound in 2024. Unit values of MAMMOs imports from South Korea decreased by *** percent to $*** per pound in 2023, then further decreased by *** percent to $*** per pound in 2024. Similarly, unit values of imports from Taiwan decreased by *** percent to $*** per pound in 2023, then decreased an additional *** percent to $*** per pound in 2024.

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

Quantity in 1,000 pounds contained MAMMOs; value in 1,000 dollars; unit value in dollars per pound contained MAMMOs.

Source	Measure	2022	2023	2024
South Korea	Quantity	***	***	***
Taiwan	Quantity	***	***	***
Subject sources	Quantity	***	***	***
Nonsubject sources	Quantity	***	***	***
All import sources	Quantity	***	***	***
South Korea	Value	***	***	***
Taiwan	Value	***	***	***
Subject sources	Value	***	***	***
Nonsubject sources	Value	***	***	***
All import sources	Value	***	***	***
South Korea	Unit value	***	***	***
Taiwan	Unit value	***	***	***
Subject sources	Unit value	***	***	***
Nonsubject sources	Unit value	***	***	***
All import sources	Unit value	***	***	***

Table continued.

Table 4.2 (Continued) MAMMOs: Share of U.S. imports by source and period

Share and ratio in percent; Ratio represents the ratio to U.S. production

Source	Measure	2022	2023	2024
South Korea	Share of quantity	***	***	***
Taiwan	Share of quantity	***	***	***
Subject sources	Share of quantity	***	***	***
Nonsubject sources	Share of quantity	***	***	***
All import sources	Share of quantity	100.0	100.0	100.0
South Korea	Share of value	***	***	***
Taiwan	Share of value	***	***	***
Subject sources	Share of value	***	***	***
Nonsubject sources	Share of value	***	***	***
All import sources	Share of value	100.0	100.0	100.0
South Korea	Ratio	***	***	***
Taiwan	Ratio	***	***	***
Subject sources	Ratio	***	***	***
Nonsubject sources	Ratio	***	***	***
All import sources	Ratio	***	***	***

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

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 MAMMOs: U.S. import quantities and average unit values, by source and period

* * * * * * *

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

Imports from South Korea and Taiwan represented the majority of MAMMOs imports by quantity during 2022–24, accounting for *** percent and *** percent of MAMMOs imports in 2024, respectively. The same is true in value terms, in which, imports from South Korea comprised *** percent and imports from Taiwan comprised *** percent of MAMMOs imports in 2024. For quantity and value terms, the shares of MAMMOs imports from South Korea decreased in 2023, before surpassing 2022 amounts by *** percentage points in 2024. The shares of MAMMOs imports from Taiwan by quantity and value increased each year between 2022 and 2024, ending *** percentage points higher in 2024 compared to 2022. Compared to 2022 and 2023, the shares of MAMMOs imports from nonsubject sources declined by at about *** percent to *** percent in quantity terms and *** percent in value terms in 2024.

The ratio of imports from subject sources to U.S. production increased from *** percent in 2022 to *** percent in 2023, then further increased to *** percent in 2024, increasing overall by *** percentage points during 2022–24.

Table 4.3 MAMMOs: Changes in U.S. imports, by source and period

Changes (Δ) in percent (%) or percentage point (ppt)

Source	Measure	2022 to 2024	2022 to 2023	2023 to 2024
South Korea	%Δ Quantity	▲***	▼***	▲***
Taiwan	%Δ Quantity	▲***	▼***	▲***
Subject sources	%Δ Quantity	▲***	▼***	▲***
Nonsubject sources	%Δ Quantity	▼***	▼***	▼***
All import sources	%Δ Quantity	▲***	▼***	▲***
South Korea	%Δ Value	▼***	▼***	▲***
Taiwan	%Δ Value	▼***	▼***	▲***
Subject sources	%Δ Value	▼***	▼***	▲***
Nonsubject sources	%Δ Value	▼***	▼***	▼***
All import sources	%Δ Value	▼***	▼***	▲***
South Korea	%Δ Unit value	▼***	▼***	▼***
Taiwan	%Δ Unit value	▼***	▼***	▼***
Subject sources	%Δ Unit value	▼***	▼***	▼***
Nonsubject sources	%Δ Unit value	▼***	▼***	▼***
All import sources	%Δ Unit value	▼***	▼***	▼***
South Korea	ppt Δ Quantity	▲***	▼***	▲***
Taiwan	ppt Δ Quantity	▲***	▲***	▲***
Subject sources	ppt Δ Quantity	▲***	▼***	▲***
Nonsubject sources	ppt Δ Quantity	▼***	▲***	▼***
All import sources	ppt Δ Quantity	***	***	***
South Korea	ppt Δ Value	▲***	▼***	▲***
Taiwan	ppt Δ Value	▲***	▲***	▲***
Subject sources	ppt Δ Value	▲***	▲***	▲***
Nonsubject sources	ppt Δ Value	▼***	▼***	▼***
All import sources	ppt Δ Value	***	***	***
South Korea	ppt Δ Ratio	▲***	▼***	▲***
Taiwan	ppt Δ Ratio	▲***	▲***	▲***
Subject sources	ppt Δ Ratio	▲***	▲***	▲***
Nonsubject sources	ppt Δ Ratio	▼***	▲***	▼***
All import sources	ppt Δ Ratio	▲***	▲***	▲***

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

Table 4.4 presents U.S. producers' and their affiliates imports. ***.

Table 4.4 MAMMOs: U.S. producers' and their affiliates imports, by source and period

Quantity in 1,000 pounds contained MAMMOs; Ratio in percent and reflects ratio by source to data reported in Table 4.2

Source	Measure	2022	2023	2024
South Korea	Quantity	***	***	***
Taiwan	Quantity	***	***	***
Subject sources	Quantity	***	***	***
Nonsubject sources	Quantity	***	***	***
All import sources	Quantity	***	***	***
South Korea	Ratio	***	***	***
Taiwan	Ratio	***	***	***
Subject sources	Ratio	***	***	***
Nonsubject sources	Ratio	***	***	***
All import sources	Ratio	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.
Note: Zeroes, null values, and undefined calculations are suppressed and shown as "—".

Negligibility

The statute requires that an investigation be terminated without an injury determination if imports of the subject merchandise are found to be negligible.[4] 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.[5] Imports from South Korea accounted for *** percent and Taiwan accounted for *** percent of total imports of MAMMOs by quantity from March 2024 to February 2025 (table 4.5).

[4] 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)).

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

Table 4.5 MAMMOs: U.S. imports in the twelve-month period preceding the filing of the petition, March 2024 through February 2025

Quantity in 1,000 pounds contained MAMMOs; share in percent

Source of imports	Quantity	Share of quantity
South Korea	***	***
Taiwan	***	***
All other sources	***	***
All import sources	***	100.0

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

Cumulation considerations

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

Fungibility

Table 4.6 and figure 4.2 present U.S. importers' U.S. shipments of imports in 2024 by MAMMOs content: individually sold, pure blends of MAMMOs, mixed blends between 50 and 100 percent, and mixed blends between 20 and 50 percent. The majority of U.S. MAMMOs shipments were individually sold (neat) MAMMOs, comprising *** percent, *** percent, and *** percent of U.S. producers, imports from South Korea, and imports from Taiwan shipments, respectively, in 2024. Pure blends were the next largest share from all sources, accounting for at least *** percent of shipments of MAMMOs from U.S. producers, imports from South Korea, and imports of Taiwan. Conversely, only *** percent of shipments of nonsubject imports were individually sold MAMMOs. The majority of nonsubject imports shipments (*** percent) were mixed blends with between 50 and 100 percent MAMMOs content, followed by pure blends at *** percent of U.S. shipments from nonsubject sources in 2024.

In 2024, U.S. producers' U.S. shipments constituted *** percent, *** percent, and *** percent of U.S. shipments individually sold MAMMOs, pure blends, and mixed blends with MAMMOs content between 20 and 50 percent, respectively. U.S. shipments from imports

from Taiwan comprised *** percent of U.S. shipments of mixed blends with MAMMOs content between 50 and 100 percent. That year, imports from South Korea were the second largest source of U.S. shipments individually sold MAMMOs (*** percent) and pure blends (*** percent).

Table 4.6 MAMMOs: U.S. producers' and U.S. importers' U.S. shipments, by source and MAMMOs content, 2024

Quantity in 1,000 pounds contained MAMMOs

Source	Individually sold	Pure blends	Mixed blends: =>50 but <100 percent	Mixed blends: =>20 but <50 percent	All MAMMOs contents
U.S. producers	***	***	***	***	***
South Korea	***	***	***	***	***
Taiwan	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
All sources	***	***	***	***	***

Table continued.

Table 4.6 (Continued) MAMMOs: U.S. producers' and U.S. importers' U.S. shipments, by source and MAMMOs content, 2024

Share across in percent

Source	Individually sold	Pure blends	Mixed blends: =>50 but <100 percent	Mixed blends: =>20 but <50 percent	All MAMMOs contents
U.S. producers	***	***	***	***	100.0
South Korea	***	***	***	***	100.0
Taiwan	***	***	***	***	100.0
Subject sources	***	***	***	***	100.0
Nonsubject sources	***	***	***	***	100.0
All import sources	***	***	***	***	100.0
All sources	***	***	***	***	100.0

Table continued.

Table 4.6 (Continued) MAMMOs: U.S. producers' and U.S. importers' U.S. shipments, by source and MAMMOs content, 2024

Share down in percent

Source	Individually sold	Pure blends	Mixed blends: =>50 but <100 percent	Mixed blends: =>20 but <50 percent	All MAMMOs contents
U.S. producers	***	***	***	***	***
South Korea	***	***	***	***	***
Taiwan	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
All sources	100.0	100.0	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 "—".

Figure 4.2 MAMMOs: U.S. producers' and U.S. importers' U.S. shipments, by source and MAMMOs content, 2024

* * * * * * *

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

Figure 4.3 MAMMOs: U.S. producers' and U.S. importers' U.S. shipments, by source and MAMMOs content, for 2024

* * * * * * *

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

Note: The shares represent the share in the overall dataset for the total market. Certain MAMMOs contents and sources are not separately labeled in the figure if they are relatively small.

Geographical markets

Table 4.7 presents U.S. imports of MAMMOs and other esters of methacrylic and acrylic acid by source and by border of entry in 2024.[6] U.S. imports of MAMMOs and other esters of methacrylic and acrylic acid from subject sources entered predominately in the Eastern border (51.1 percent) and Northern border (36.4 percent), and to a lesser extent, in the Western border (11.4 percent). Imports of MAMMOs and other esters of methacrylic and acrylic acid from subject sources constituted 87.9 percent of imports in the Western border and 48.9 percent of imports in the Eastern border. Nonsubject imports were the major source of

[6] Data are limited to the two primary HTS statistical reporting numbers containing MAMMOs. In-scope data under other HTS numbers may not be included such as a variety of in-scope blends and the sole in-scope oligomer. Data for these other HTS statistical numbers are overly inclusive basket categories and not presented.

MAMMOs and other esters of methacrylic and acrylic acid in the Southern and Northern border, accounting for 92.8 percent and 64.8 percent of imports, respectively.

Table 4.7 MAMMOs and other esters of methacrylic and acrylic acid: U.S. imports, by source and by border of entry, 2024

Quantity in 1,000 pounds contained MAMMOs

Source	East	North	South	West	All borders
South Korea	50,686	31,273	1,481	13,179	96,618
Taiwan	26,699	23,897	158	4,037	54,791
Subject sources	77,385	55,170	1,639	17,216	151,410
Nonsubject sources	80,940	101,441	21,192	2,377	205,950
All import sources	158,325	156,611	22,831	19,593	357,359

Table continued.

Table 4.7 (Continued) MAMMOs and other esters of methacrylic and acrylic acid: U.S. imports, by source and by border of entry, 2024

Share across in percent

Source	East	North	South	West	All borders
South Korea	52.5	32.4	1.5	13.6	100.0
Taiwan	48.7	43.6	0.3	7.4	100.0
Subject sources	51.1	36.4	1.1	11.4	100.0
Nonsubject sources	39.3	49.3	10.3	1.2	100.0
All import sources	44.3	43.8	6.4	5.5	100.0

Table continued.

Table 4.7 (Continued) MAMMOs and other esters of methacrylic and acrylic acid: U.S. imports, by source and by border of entry, 2024

Share down in percent

Source	East	North	South	West	All borders
South Korea	32.0	20.0	6.5	67.3	27.0
Taiwan	16.9	15.3	0.7	20.6	15.3
Subject sources	48.9	35.2	7.2	87.9	42.4
Nonsubject sources	51.1	64.8	92.8	12.1	57.6
All import sources	100.0	100.0	100.0	100.0	100.0

Source: Compiled from official U.S. import statistics of the U.S. Department of Commerce Census Bureau using statistical reporting numbers 2916.12.5050 and 2916.14.2050, accessed April 3, 2025. Imports are based on the imports for consumption data series.
Note: Data are limited to the two primary HTS statistical reporting numbers containing MAMMOs. In-scope data under other HTS numbers may not be included such as a variety of in-scope blends and the sole in-scope oligomer. Data for these other HTS statistical numbers are overly inclusive basket categories and not presented.

Presence in the market

Table 4.8 as well as figures 4.4 and 4.5 present U.S. imports of MAMMOs and other esters of methacrylic and acrylic acid by month and source. In 2022, imports of MAMMOs and other esters of methacrylic and acrylic acid from South Korea and Taiwan decreased overall to a period low during the first quarter of 2023. Since that time, imports have generally increased to roughly 2022 levels in 2024. Nonsubject imports of MAMMOs and other esters of methacrylic and acrylic acid decreased in 2020 to a period low in January 2023, before increasing by about 2 million pounds during the months following and roughly matching subject import levels in 2024.

Table 4.8 MAMMOs: MAMMOs and other esters of methacrylic and acrylic acid: U.S. imports, by month and source, 2022–24

Quantity in 1,000 pounds

Year	Month	South Korea	Taiwan	Subject sources	Nonsubject sources	All import sources
2022	January	3,047	1,410	4,457	6,299	10,756
2022	February	1,524	1,266	2,790	6,905	9,695
2022	March	3,917	2,082	6,000	6,708	12,707
2022	April	2,785	1,921	4,706	9,058	13,765
2022	May	3,367	2,647	6,014	8,218	14,232
2022	June	2,832	1,873	4,705	7,347	12,052
2022	July	1,455	1,341	2,797	7,387	10,183
2022	August	2,030	1,911	3,941	6,687	10,628
2022	September	2,778	1,781	4,559	8,390	12,948
2022	October	2,100	1,161	3,261	4,941	8,202
2022	November	2,098	644	2,742	5,128	7,870
2022	December	1,553	392	1,946	3,798	5,744
2023	January	1,374	279	1,653	3,864	5,517
2023	February	1,253	506	1,759	4,277	6,036
2023	March	2,444	1,115	3,558	6,300	9,858
2023	April	2,839	1,233	4,073	6,963	11,036
2023	May	2,617	1,415	4,031	5,881	9,912
2023	June	2,118	1,542	3,660	5,147	8,807
2023	July	2,372	1,341	3,713	4,497	8,211
2023	August	2,779	936	3,715	5,334	9,049
2023	September	2,315	1,231	3,547	3,954	7,501
2023	October	2,261	1,381	3,642	4,286	7,928
2023	November	2,797	768	3,565	3,597	7,162
2023	December	3,022	1,642	4,664	4,369	9,034

Table continued.

Table 4.8 (Continued) MAMMOs and other esters of methacrylic and acrylic acid: U.S. imports, by month and source, 2022–24

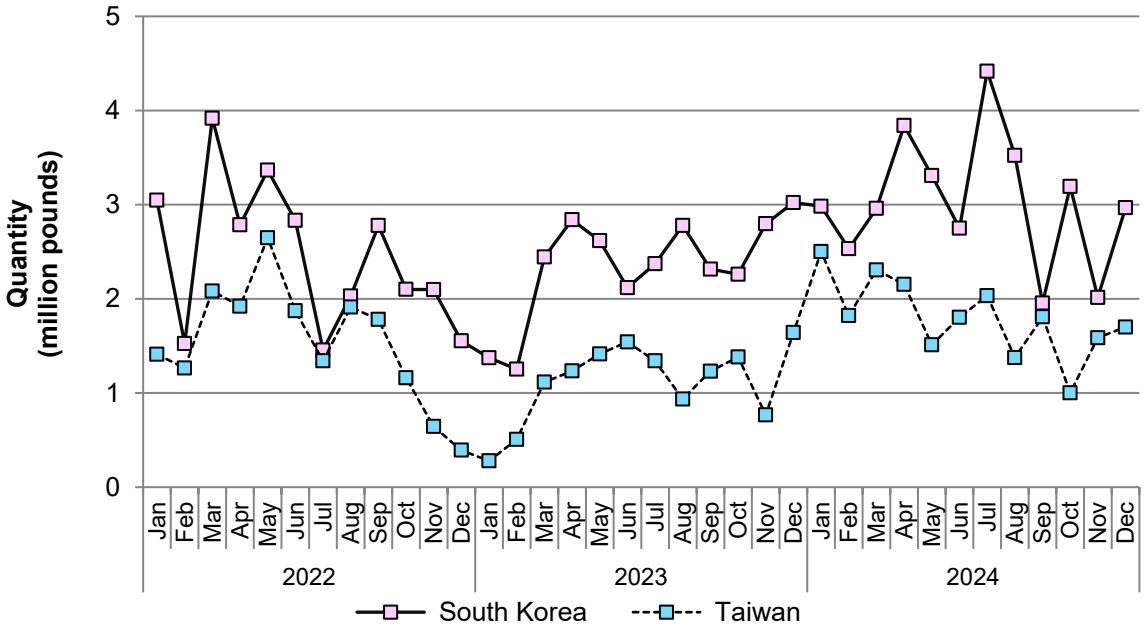
Quantity in 1,000 pounds

Year	Month	South Korea	Taiwan	Subject sources	Nonsubject sources	All import sources
2024	January	2,983	2,501	5,484	4,264	9,748
2024	February	2,532	1,822	4,354	4,176	8,529
2024	March	2,960	2,307	5,267	7,089	12,356
2024	April	3,840	2,153	5,993	6,017	12,010
2024	May	3,309	1,512	4,821	6,544	11,365
2024	June	2,750	1,803	4,553	4,819	9,372
2024	July	4,417	2,034	6,450	5,822	12,273
2024	August	3,522	1,376	4,898	4,299	9,197
2024	September	1,955	1,808	3,763	6,525	10,288
2024	October	3,193	1,002	4,196	5,338	9,534
2024	November	2,015	1,586	3,601	3,680	7,281
2024	December	2,967	1,701	4,668	3,756	8,423

Source: Compiled from official U.S. import statistics of the U.S. Department of Commerce Census Bureau using statistical reporting numbers 2916.12.5050 and 2916.14.2050, accessed April 3, 2025. Imports are based on the imports for consumption data series.

Note: Data are limited to the two primary HTS statistical reporting numbers containing MAMMOs. In-scope data under other HTS numbers may not be included such as a variety of in-scope blends and the sole in-scope oligomer. Data for these other HTS statistical numbers are overly inclusive basket categories and not presented.

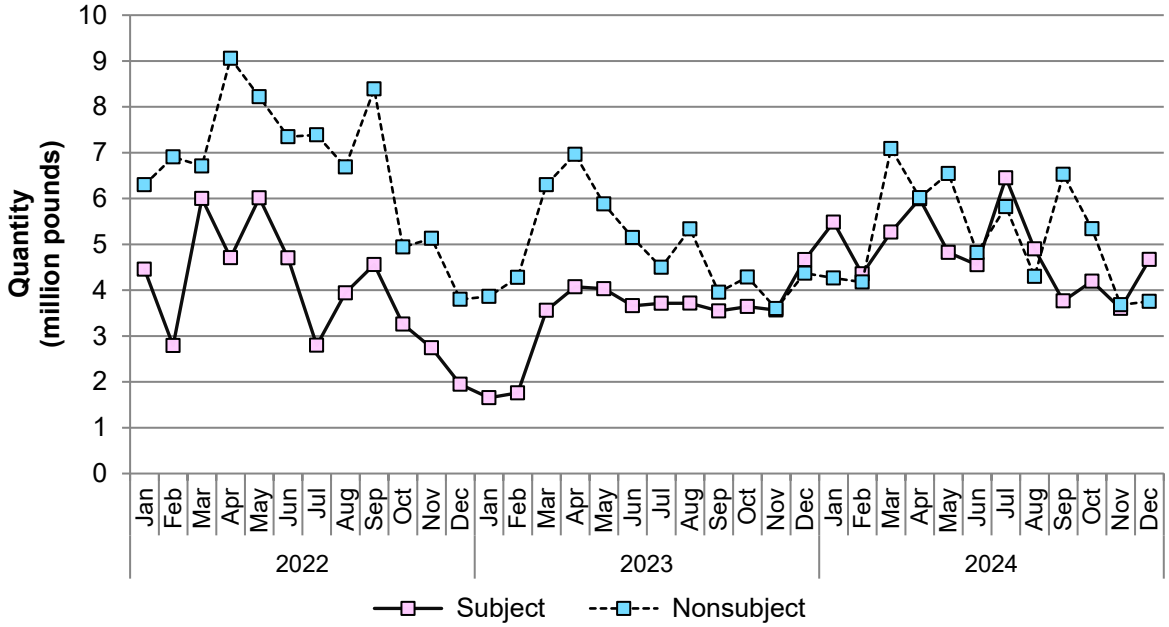
Figure 4.4 MAMMOs and other esters of methacrylic and acrylic acid: U.S. imports from individual subject sources, by source and by month, 2022–24



Source: Compiled from official U.S. import statistics of the U.S. Department of Commerce Census Bureau using statistical reporting numbers 2916.12.5050 and 2916.14.2050, accessed April 3, 2025. Imports are based on the imports for consumption data series.

Note: Data are limited to the two primary HTS statistical reporting numbers containing MAMMOs. In-scope data under other HTS numbers may not be included such as a variety of in-scope blends and the sole in-scope oligomer. Data for these other HTS statistical numbers are overly inclusive basket categories and not presented.

Figure 4.5 MAMMOs and other esters of methacrylic and acrylic acid: U.S. imports from aggregated subject and nonsubject sources, by month, 2024



Source: Compiled from official U.S. import statistics of the U.S. Department of Commerce Census Bureau using statistical reporting numbers 2916.12.5050 and 2916.14.2050, accessed April 3, 2025. Imports are based on the imports for consumption data series.

Note: Data are limited to the two primary HTS statistical reporting numbers containing MAMMOs. In-scope data under other HTS numbers may not be included such as a variety of in-scope blends and the sole in-scope oligomer. Data for these other HTS statistical numbers are overly inclusive basket categories and not presented.

Apparent U.S. consumption and market shares

Quantity

Table 4.9 and figure 4.6 present data on apparent U.S. consumption and U.S. market shares by quantity for MAMMOs. Apparent U.S. consumption by quantity decreased by *** percent from 2022 to *** pounds in 2023, then increased by *** percent to *** pounds in 2024, for an overall *** percent decrease between 2022 and 2024. U.S. producers' U.S. shipments accounted for the largest share of apparent U.S. consumption by quantity, although that share decreased from *** percent in 2022 to *** percent in 2023, before increasing to *** percent in 2024. As U.S. producers' market share by quantity decreased irregularly by *** percentage points from 2022 to 2024, subject import market share increased by *** percentage points over the same period. In particular, the market share of imports from South Korea and Taiwan increased overall by *** percentage points and *** percentage points, respectively, during that time. Since 2022, nonsubject import market share decreased by *** percentage points to *** percent in 2024.

Table 4.9 MAMMOs: Apparent U.S. consumption and market shares based on quantity, by source and period

Quantity in 1,000 pounds contained MAMMOs; shares in percent.

Source	Measure	2022	2023	2024
U.S. producers	Quantity	***	***	***
South Korea	Quantity	***	***	***
Taiwan	Quantity	***	***	***
Subject sources	Quantity	***	***	***
Nonsubject sources	Quantity	***	***	***
All import sources	Quantity	***	***	***
All sources	Quantity	***	***	***
U.S. producers	Share	***	***	***
South Korea	Share	***	***	***
Taiwan	Share	***	***	***
Subject sources	Share	***	***	***
Nonsubject sources	Share	***	***	***
All import sources	Share	***	***	***
All sources	Share	100.0	100.0	100.0

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

Figure 4.6 MAMMOs: Apparent U.S. consumption based on quantity, by source and period

* * * * * * *

Source: Compiled from data submitted in response to Commission questionnaires

Value

Table 4.10 and figure 4.7 present data on apparent U.S. consumption and U.S. market shares by value for MAMMOs. Since 2022, apparent U.S. consumption by value decreased by *** percent in 2023, then increased by *** percent to $*** in 2024, for an overall *** percent decrease during 2022–24. U.S. producers' market share by value decreased irregularly by *** percentage points from *** percent in 2022 to *** percent in 2024, while subject import market share increased by *** percentage points to *** percent in 2024. Specifically, the market share of imports from South Korea and Taiwan increased overall by *** percentage points and *** percentage points, respectively, during that time. During the period of data collection, nonsubject import market share decreased by *** percentage points to *** percent in 2024.

Table 4.10 MAMMOs: Apparent U.S. consumption and market shares based on value, by source and period

Value in 1,000 dollars; shares in percent.

Source	Measure	2022	2023	2024
U.S. producers	Value	***	***	***
South Korea	Value	***	***	***
Taiwan	Value	***	***	***
Subject sources	Value	***	***	***
Nonsubject sources	Value	***	***	***
All import sources	Value	***	***	***
All sources	Value	***	***	***
U.S. producers	Share	***	***	***
South Korea	Share	***	***	***
Taiwan	Share	***	***	***
Subject sources	Share	***	***	***
Nonsubject sources	Share	***	***	***
All import sources	Share	***	***	***
All sources	Share	100.0	100.0	100.0

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

Figure 4.7 MAMMOs: Apparent U.S. consumption based on value, by source and period

* * * * * * *

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

Part 5: Pricing data

Factors affecting prices

Raw material costs

MAMMOs are produced using the following inputs: raw materials, catalysts, stabilizers and inhibitors. For monomers, (meth)acrylic acid or acrylic acid are the raw material inputs while oligomers require (meth)acrylic acid and bisphenol A based epoxy resin.[1] There is no publicly available data on the cost of the above-mentioned raw materials. Raw materials, as a share of U.S. producers' cost of goods sold (COGS), declined from *** percent in 2022 to *** percent in 2024.

Transportation costs to the U.S. market

Transportation costs for MAMMOs shipped from subject countries to the United States averaged 4.7 percent for South Korea and 7.2 percent for Taiwan during 2024. These estimates were derived from official import data and represent the transportation and other charges on imports.[2]

U.S. inland transportation costs

The majority of U.S. producers and importers reported that they typically ***. U.S. producer *** reported that its U.S. inland transportation costs were *** percent, while most importers reported costs of 2.0 to 5.0 percent.

Pricing practices

Pricing methods

U.S. producers and importers reported setting prices using *** (table 5.1). Importer *** reported that other methods for setting prices include vendors providing quarterly and monthly pricing.

[1] Conference transcript, p. 64 (Klang) and p.68 (Klang).

[2] The estimated transportation costs were obtained by subtracting the customs value from the c.i.f. value of the imports for 2024 and then dividing by the customs value based on the HTS statistical reporting number 2916.12.5050 and 2916.14.2050.

Table 5.1 MAMMOs: Count of U.S. producers' and importers' reported price setting methods

Method	U.S. producers	Importers
Transaction-by-transaction	***	16
Contract	***	8
Set price list	***	6
Other	***	4
Responding firms	2	17

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

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

U.S. producers and importers reported selling the vast majority of their MAMMOs *** (table 5.2).

Table 5.2 MAMMOs: U.S. producers' and importers' shares of commercial U.S. shipments by type of sale, 2024

Share in percent.

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

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

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

*** U.S. producer who reported selling MAMMOs ***. *** U.S. producer who reported selling MAMMOs ***.

Importers who reported selling MAMMOs under short-term contracts reported that they typically last 90 to 180 days. The majority of responding U.S. importers reported fixing to both price and quantity and renegotiating contracts for short-term, annual, and long-term contracts. The majority of importers reported that they do not index prices to raw materials for short-term and annual contracts, while one importer reported indexing prices to raw materials in long-term contracts.

Sales terms and discounts

Both U.S. producers and 8 of 14 responding U.S. importers typically quote prices on an f.o.b. basis. Producers and importers reported offering total quantity and total volume discounts.

Price and purchase cost data

The Commission requested U.S. producers and importers to provide quarterly data for the total quantity and f.o.b. value of the following MAMMO products shipped to unrelated U.S. customers during January 2022 to December 2024. Firms that imported these products from South Korea or Taiwan for own use were requested to provide import purchase cost data.

Product 1.-- Bisphenol-A Epoxy Acrylate diluted with 40% TMPTA (Epoxy Acrylate TMPTA Blend), packed in polyethylene IBC containers (also known as totes).

Product 2.-- Trimethylolpropane triacrylate (TMPTA), CAS# 15625-89-5, packed in polyethylene IBC containers (also known as totes).

Product 3.-- Ethoxylated (3) trimethylol-propane triacrylate (written as TMP3EOTA or TMP(EO)3TA), CAS# 28961-43-5, packed in polyethylene IBC containers (also known as totes).

Product 4.-- Dipropylene glycol diacrylate (DPGDA), CAS# 57472-68-1, packed in polyethylene IBC containers (also known as totes).

Price data

Both U.S. producers and ten importers provided usable pricing data for sales of the requested products, although not all firms reported pricing for all products for all quarters.[3] Pricing data reported by these firms accounted for approximately *** percent of U.S. producers' U.S. shipments of MAMMOs, *** percent of U.S. shipments from South Korea,

[3] 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.

and *** percent of U.S. shipments from Taiwan in 2024.[4] [5] Price data for products 1-4 are presented in tables 5.3 to 5.6 and figures 5.1 to 5.4.

Table 5.3 MAMMOs: 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 1,000 pounds contained MAMMOs; prices in dollars per pound contained MAMMOs; margins in percent.

Period	U.S. price	U.S. quantity	South Korea price	South Korea quantity	South Korea margin	Taiwan price	Taiwan quantity	Taiwan margin
2022 Q1	***	***	***	***	***	***	***	***
2022 Q2	***	***	***	***	***	***	***	***
2022 Q3	***	***	***	***	***	***	***	***
2022 Q4	***	***	***	***	***	***	***	***
2023 Q1	***	***	***	***	***	***	***	***
2023 Q2	***	***	***	***	***	***	***	***
2023 Q3	***	***	***	***	***	***	***	***
2023 Q4	***	***	***	***	***	***	***	***
2024 Q1	***	***	***	***	***	***	***	***
2024 Q2	***	***	***	***	***	***	***	***
2024 Q3	***	***	***	***	***	***	***	***
2024 Q4	***	***	***	***	***	***	***	***

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

Note: Product 1: Bisphenol-A Epoxy Acrylate diluted with 40% TMPTA (Epoxy Acrylate TMPTA Blend), packed in polyethylene IBC containers (also known as totes).

[4] Pricing coverage is based on imports reported in questionnaires

[5] Importer ***.

Figure 5.1 MAMMOs: 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: Bisphenol-A Epoxy Acrylate diluted with 40% TMPTA (Epoxy Acrylate TMPTA Blend), packed in polyethylene IBC containers (also known as totes).

Table 5.4 MAMMOs: 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 1,000 pounds contained MAMMOs; prices in dollars per pound contained MAMMOs; margins in percent.

Period	U.S. price	U.S. quantity	South Korea price	South Korea quantity	South Korea margin	Taiwan price	Taiwan quantity	Taiwan margin
2022 Q1	***	***	***	***	***	***	***	***
2022 Q2	***	***	***	***	***	***	***	***
2022 Q3	***	***	***	***	***	***	***	***
2022 Q4	***	***	***	***	***	***	***	***
2023 Q1	***	***	***	***	***	***	***	***
2023 Q2	***	***	***	***	***	***	***	***
2023 Q3	***	***	***	***	***	***	***	***
2023 Q4	***	***	***	***	***	***	***	***
2024 Q1	***	***	***	***	***	***	***	***
2024 Q2	***	***	***	***	***	***	***	***
2024 Q3	***	***	***	***	***	***	***	***
2024 Q4	***	***	***	***	***	***	***	***

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

Note: Product 2: Trimethylolpropane triacrylate (TMPTA), CAS# 15625-89-5, packed in polyethylene IBC containers (also known as totes).

Figure 5.2 MAMMOs: 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: Trimethylolpropane triacrylate (TMPTA), CAS# 15625-89-5, packed in polyethylene IBC containers (also known as totes).

Table 5.5 MAMMOs: Weighted-average f.o.b. prices and quantities of domestic and imported product 3 and margins of underselling/(overselling), by source and quarter

Quantity in 1,000 pounds contained MAMMOs; prices in dollars per pound contained MAMMOs; margins in percent.

Period	U.S. price	U.S. quantity	South Korea price	South Korea quantity	South Korea margin	Taiwan price	Taiwan quantity	Taiwan margin
2022 Q1	***	***	***	***	***	***	***	***
2022 Q2	***	***	***	***	***	***	***	***
2022 Q3	***	***	***	***	***	***	***	***
2022 Q4	***	***	***	***	***	***	***	***
2023 Q1	***	***	***	***	***	***	***	***
2023 Q2	***	***	***	***	***	***	***	***
2023 Q3	***	***	***	***	***	***	***	***
2023 Q4	***	***	***	***	***	***	***	***
2024 Q1	***	***	***	***	***	***	***	***
2024 Q2	***	***	***	***	***	***	***	***
2024 Q3	***	***	***	***	***	***	***	***
2024 Q4	***	***	***	***	***	***	***	***

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

Note: Product 3: Ethoxylated (3) trimethylol-propane triacrylate (written as TMP3EOTA or TMP(EO)3TA), CAS# 28961-43-5, packed in polyethylene IBC containers (also known as totes).

Figure 5.3 MAMMOs: Weighted-average f.o.b. prices and quantities of domestic and imported product 3, by source and quarter

Price of product 3

* * * * * * *

Volume of product 3

* * * * * * *

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

Note: Product 3: Ethoxylated (3) trimethylol-propane triacrylate (written as TMP3EOTA or TMP(EO)3TA), CAS# 28961-43-5, packed in polyethylene IBC containers (also known as totes).

Table 5.6 MAMMOs: Weighted-average f.o.b. prices and quantities of domestic and imported product 4 and margins of underselling/(overselling), by source and quarter

Quantity in 1,000 pounds contained MAMMOs; prices in dollars per pound contained MAMMOs; margins in percent.

Period	U.S. price	U.S. quantity	South Korea price	South Korea quantity	South Korea margin	Taiwan price	Taiwan quantity	Taiwan margin
2022 Q1	***	***	***	***	***	***	***	***
2022 Q2	***	***	***	***	***	***	***	***
2022 Q3	***	***	***	***	***	***	***	***
2022 Q4	***	***	***	***	***	***	***	***
2023 Q1	***	***	***	***	***	***	***	***
2023 Q2	***	***	***	***	***	***	***	***
2023 Q3	***	***	***	***	***	***	***	***
2023 Q4	***	***	***	***	***	***	***	***
2024 Q1	***	***	***	***	***	***	***	***
2024 Q2	***	***	***	***	***	***	***	***
2024 Q3	***	***	***	***	***	***	***	***
2024 Q4	***	***	***	***	***	***	***	***

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

Note: Product 4: Dipropylene glycol diacrylate (DPGDA), CAS# 57472-68-1, packed in polyethylene IBC containers (also known as totes).

Figure 5.4 MAMMOs: Weighted-average f.o.b. prices and quantities of domestic and imported product 4, by source and quarter

Price of product 4

* * * * * * *

Volume of product 4

* * * * * * *

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

Note: Product 4: Dipropylene glycol diacrylate (DPGDA), CAS# 57472-68-1, packed in polyethylene IBC containers (also known as totes).

Import purchase cost data

Four importers reported useable import purchase cost data for products 1-4. Purchase cost data reported by these firms accounted for *** percent of U.S. imports from South Korea, and *** percent of U.S. imports from Taiwan in 2024. Landed duty-paid purchase cost data for imports from South Korea or Taiwan are presented in tables 5.7 to 5.10, along with U.S. producers' sales prices.[6]

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

Two of four importers reported that they incurred additional costs beyond landed duty-paid costs by importing MAMMOs themselves rather than purchasing from a U.S. producer or U.S. importer. Estimates of the total additional cost incurred ranged from *** percent compared to the landed duty-paid value. Firms were also asked to identify specific additional costs they incurred as a result of importing MAMMOs. Reported costs include warehousing costs and interest on inventories.

Firms were also asked to describe how these additional costs incurred by importing MAMMOs themselves compare with additional costs incurred when purchasing from a U.S. producer or U.S. importer. Firms reported that inventory costs would be similar whether they imported themselves or purchased from a U.S. producer or U.S. importer and that they would only carry 30 days of U.S. produced inventory compared to the current 90 days.

One importer reported that it compares costs of importing to the cost of purchasing from a U.S. producer in determining whether to import MAMMOs and three importers did not compare costs of purchasing from either U.S. producers or importers.

Four importers identified benefits from importing MAMMOs themselves instead of purchasing from U.S. producers or importers, including lower costs, and a diversified supply chain

Firms were also asked whether the import costs (both excluding and including additional costs) of MAMMOs they imported are lower than the price of purchasing MAMMOs from a U.S. producer or importer. One firm reported that import costs (both excluding and including additional costs were lower than the price of purchasing from a U.S. producer or importer but did not report any estimated savings.

[6] 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.

Table 5.7 MAMMOs: Import landed duty-paid purchase costs and domestic prices, quantities of product 1, and price-cost differentials, by source and quarter

Quantity in 1,000 pounds contained MAMMOs; prices and unit LDP values in dollars per pound contained MAMMOs; differentials in percent.

Period	U.S. price	U.S. quantity	South Korea LDP unit cost	South Korea quantity	South Korea Price-cost differential	Taiwan LDP unit cost	Taiwan quantity	Taiwan Price-cost differential
2022 Q1	***	***	***	***	***	***	***	***
2022 Q2	***	***	***	***	***	***	***	***
2022 Q3	***	***	***	***	***	***	***	***
2022 Q4	***	***	***	***	***	***	***	***
2023 Q1	***	***	***	***	***	***	***	***
2023 Q2	***	***	***	***	***	***	***	***
2023 Q3	***	***	***	***	***	***	***	***
2023 Q4	***	***	***	***	***	***	***	***
2024 Q1	***	***	***	***	***	***	***	***
2024 Q2	***	***	***	***	***	***	***	***
2024 Q3	***	***	***	***	***	***	***	***
2024 Q4	***	***	***	***	***	***	***	***

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

Note: Product 1: Bisphenol-A Epoxy Acrylate diluted with 40% TMPTA (Epoxy Acrylate TMPTA Blend), packed in polyethylene IBC containers (also known as totes).

Note: U.S. producer price data is the same as that presented in table 5.3.

Figure 5.5 MAMMOs: U.S. producer prices and import purchase costs, and quantities, of 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: Bisphenol-A Epoxy Acrylate diluted with 40% TMPTA (Epoxy Acrylate TMPTA Blend), packed in polyethylene IBC containers (also known as totes).

Table 5.8 MAMMOs: Import landed duty-paid purchase costs and domestic prices, quantities of product 2, and price-cost differentials, by source and quarter

Quantity in 1,000 pounds contained MAMMOs; prices and unit LDP values in dollars per pound contained MAMMOs; differentials in percent.

Period	U.S. price	U.S. quantity	South Korea LDP unit cost	South Korea quantity	South Korea Price-cost differential	Taiwan LDP unit cost	Taiwan quantity	Taiwan Price-cost differential
2022 Q1	***	***	***	***	***	***	***	***
2022 Q2	***	***	***	***	***	***	***	***
2022 Q3	***	***	***	***	***	***	***	***
2022 Q4	***	***	***	***	***	***	***	***
2023 Q1	***	***	***	***	***	***	***	***
2023 Q2	***	***	***	***	***	***	***	***
2023 Q3	***	***	***	***	***	***	***	***
2023 Q4	***	***	***	***	***	***	***	***
2024 Q1	***	***	***	***	***	***	***	***
2024 Q2	***	***	***	***	***	***	***	***
2024 Q3	***	***	***	***	***	***	***	***
2024 Q4	***	***	***	***	***	***	***	***

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

Note: Product 2: Trimethylolpropane triacrylate (TMPTA), CAS# 15625-89-5, packed in polyethylene IBC containers (also known as totes).

Note: U.S. producer price data is the same as that presented in table 5.4.

Figure 5.6 MAMMOs: U.S. producer prices and import purchase costs, and quantities, of 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: Trimethylolpropane triacrylate (TMPTA), CAS# 15625-89-5, packed in polyethylene IBC containers (also known as totes).

Table 5.9 MAMMOs: Import landed duty-paid purchase costs and domestic prices, quantities of product 3, and price-cost differentials, by source and quarter

Quantity in 1,000 pounds contained MAMMOs; prices and unit LDP values in dollars per pound contained MAMMOs; differentials in percent.

Period	U.S. price	U.S. quantity	South Korea LDP unit cost	South Korea quantity	South Korea Price-cost differential	Taiwan LDP unit cost	Taiwan quantity	Taiwan Price-cost differential
2022 Q1	***	***	***	***	***	***	***	***
2022 Q2	***	***	***	***	***	***	***	***
2022 Q3	***	***	***	***	***	***	***	***
2022 Q4	***	***	***	***	***	***	***	***
2023 Q1	***	***	***	***	***	***	***	***
2023 Q2	***	***	***	***	***	***	***	***
2023 Q3	***	***	***	***	***	***	***	***
2023 Q4	***	***	***	***	***	***	***	***
2024 Q1	***	***	***	***	***	***	***	***
2024 Q2	***	***	***	***	***	***	***	***
2024 Q3	***	***	***	***	***	***	***	***
2024 Q4	***	***	***	***	***	***	***	***

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

Note: Product 3: Ethoxylated (3) trimethylol-propane triacrylate (written as TMP3EOTA or TMP(EO)3TA), CAS# 28961-43-5, packed in polyethylene IBC containers (also known as totes).

Note: U.S. producer price data is the same as that presented in table 5.5.

Figure 5.7 MAMMOs: U.S. producer prices and import purchase costs, and quantities, of product 3, by source and quarter

U.S. price and import purchase cost of product 3

* * * * * * *

Volume of product 3

* * * * * * *

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

Note: Product 3: Ethoxylated (3) trimethylol-propane triacrylate (written as TMP3EOTA or TMP(EO)3TA), CAS# 28961-43-5, packed in polyethylene IBC containers (also known as totes).

Table 5.10 MAMMOs: Import landed duty-paid purchase costs and domestic prices, quantities of product 4, and price-cost differentials, by source and quarter

Quantity in 1,000 pounds contained MAMMOs; prices and unit LDP values in dollars per pound contained MAMMOs; differentials in percent.

Period	U.S. price	U.S. quantity	South Korea LDP unit cost	South Korea quantity	South Korea Price-cost differential	Taiwan LDP unit cost	Taiwan quantity	Taiwan Price-cost differential
2022 Q1	***	***	***	***	***	***	***	***
2022 Q2	***	***	***	***	***	***	***	***
2022 Q3	***	***	***	***	***	***	***	***
2022 Q4	***	***	***	***	***	***	***	***
2023 Q1	***	***	***	***	***	***	***	***
2023 Q2	***	***	***	***	***	***	***	***
2023 Q3	***	***	***	***	***	***	***	***
2023 Q4	***	***	***	***	***	***	***	***
2024 Q1	***	***	***	***	***	***	***	***
2024 Q2	***	***	***	***	***	***	***	***
2024 Q3	***	***	***	***	***	***	***	***
2024 Q4	***	***	***	***	***	***	***	***

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

Note: Product 4: Dipropylene glycol diacrylate (DPGDA), CAS# 57472-68-1, packed in polyethylene IBC containers (also known as totes).

Note: U.S. producer price data is the same as that presented in table 5.6.

Figure 5.8 MAMMOs: U.S. producer prices and import purchase costs, and quantities, of product 4, by source and quarter

U.S. price and import purchase cost of product 4

* * * * * * *

Volume of product 4

* * * * * * *

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

Note: Product 4: Dipropylene glycol diacrylate (DPGDA), CAS# 57472-68-1, packed in polyethylene IBC containers (also known as totes).

Price and purchase cost trends

In general, prices decreased during January 2022 to December 2024. Table 5.11 summarizes the price trends, by country and by product. As shown in the table, domestic price decreases ranged from *** to *** percent for products 1, 2, and 4, while the domestic price of product 3 increased by *** percent during January 2022 to December 2024. Import price decreases ranged from *** to *** percent. Landed duty-paid cost decreases ranged from *** to *** percent.

Table 5.11 MAMMOs: Summary of price and cost data, by product and source

Quantity in 1,000 pounds contained MAMMOs; prices and unit LDP values in dollars per pound contained MAMMOs; change in percent.

Product	Source	Number of quarters	Volume of shipments	Low price/ cost	High price/ cost	First quarter price/ cost	Last quarter price/ cost	Percent change in price/cost over period
Product 1	United States	12	***	***	***	***	***	***
Product 1	South Korea price	12	***	***	***	***	***	***
Product 1	South Korea cost	7	***	***	***	***	***	***
Product 1	Taiwan price	12	***	***	***	***	***	***
Product 1	Taiwan cost	9	***	***	***	***	***	***
Product 2	United States	12	***	***	***	***	***	***
Product 2	South Korea price	12	***	***	***	***	***	***
Product 2	South Korea cost	8	***	***	***	***	***	***
Product 2	Taiwan price	12	***	***	***	***	***	***
Product 2	Taiwan cost	12	***	***	***	***	***	***
Product 3	United States	12	***	***	***	***	***	***
Product 3	South Korea price	12	***	***	***	***	***	***
Product 3	South Korea cost	2	***	***	***	***	***	***
Product 3	Taiwan price	12	***	***	***	***	***	***
Product 3	Taiwan cost	10	***	***	***	***	***	***
Product 4	United States	12	***	***	***	***	***	***
Product 4	South Korea price	12	***	***	***	***	***	***
Product 4	South Korea cost	2	***	***	***	***	***	***
Product 4	Taiwan price	12	***	***	***	***	***	***
Product 4	Taiwan cost	9	***	***	***	***	***	***

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

Note: Percentage change from the first quarter in which data were available in 2022 to the last quarter in which data were available in 2024.

Figure 5.9: MAMMOs: Indexed U.S. producer prices, by quarter

* * * * * * *

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

Table 5.12: MAMMOs: Indexed U.S. producer prices, by quarter

Index in percent, 2022 Q1= 100.0 percent.

Period	Product 1	Product 2	Product 3	Product 4
2022 Q1	100.0	100.0	100.0	100.0
2022 Q2	***	***	***	***
2022 Q3	***	***	***	***
2022 Q4	***	***	***	***
2023 Q1	***	***	***	***
2023 Q2	***	***	***	***
2023 Q3	***	***	***	***
2023 Q4	***	***	***	***
2024 Q1	***	***	***	***
2024 Q2	***	***	***	***
2024 Q3	***	***	***	***
2024 Q4	***	***	***	***

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 5.10: MAMMOs: Indexed U.S. Importer prices, by quarter

* * * * * * *

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

Table 5.13: MAMMOs: Indexed U.S. Importer prices, by quarter

Index in percent, 2022 Q1= 100.0 percent.

Period	Product 1	Product 2	Product 3	Product 4
2022 Q1	100.0	100.0	100.0	100.0
2022 Q2	***	***	***	***
2022 Q3	***	***	***	***
2022 Q4	***	***	***	***
2023 Q1	***	***	***	***
2023 Q2	***	***	***	***
2023 Q3	***	***	***	***
2023 Q4	***	***	***	***
2024 Q1	***	***	***	***
2024 Q2	***	***	***	***
2024 Q3	***	***	***	***
2024 Q4	***	***	***	***

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 5.11: MAMMO: Indexed subject purchase cost U.S. importer prices, by quarter

* * * * * * *

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

Table 5.14: MAMMOs: Indexed subject purchase cost U.S. Importer prices, by quarter

Index in percent, 2022 Q1= 100.0 percent.

Period	Product 1	Product 2	Product 3	Product 4
2022 Q1	100.0	100.0	100.0	—
2022 Q2	***	***	***	***
2022 Q3	***	***	***	***
2022 Q4	***	***	***	***
2023 Q1	***	***	***	***
2023 Q2	***	***	***	***
2023 Q3	***	***	***	***
2023 Q4	***	***	***	***
2024 Q1	***	***	***	***
2024 Q2	***	***	***	***
2024 Q3	***	***	***	***
2024 Q4	***	***	***	***

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 “—“.

Price and purchase cost comparisons

Price comparisons

As shown in table 5.16, prices for product imported from South Korea were below those for U.S.-produced product in 36 of 48 instances (*** pounds); margins of underselling ranged from *** to *** percent. In the remaining 12 instances (*** pounds), prices for product from South Korea were between *** and *** percent above prices for the domestic product. Prices for product imported from Taiwan were below those for U.S.-produced product in 25 of 48 instances (*** pounds); margins of underselling ranged from *** to *** percent. In the remaining 23 instances (*** pounds), prices for product from Taiwan were between *** and *** percent above prices for the domestic product.

Table 5.15 MAMMOs: Instances of underselling and overselling and the range and average of margins, by product

Quantity in 1,000 pounds contained MAMMOs; margins in percent.

Product	Type	Number of quarters	Quantity	Average margin	Min margin	Max margin
Product 1	Underselling	18	***	***	***	***
Product 2	Underselling	17	***	***	***	***
Product 3	Underselling	22	***	***	***	***
Product 4	Underselling	4	***	***	***	***
Total	Underselling	61	***	***	***	***
Product 1	Overselling	6	***	***	***	***
Product 2	Overselling	7	***	***	***	***
Product 3	Overselling	2	***	***	***	***
Product 4	Overselling	20	***	***	***	***
Total	Overselling	35	***	***	***	***

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 5.16 MAMMOs: Instances of underselling and overselling and the range and average of margins, by source

Quantity in 1,000 pounds contained MAMMOs; margins in percent.

Source	Type	Number of quarters	Quantity	Average margin	Min margin	Max margin
South Korea	Underselling	36	***	***	***	***
Taiwan	Underselling	25	***	***	***	***
Total	Underselling	61	***	***	***	***
South Korea	Overselling	12	***	***	***	***
Taiwan	Overselling	23	***	***	***	***
Total	Overselling	35	***	***	***	***

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 5.17 MAMMOs: Instances of underselling and overselling and the range and average of margins, by year

Quantity in 1,000 pounds contained MAMMOs; margins in percent.

Year	Type	Number of quarters	Quantity	Average margin	Min margin	Max margin
2022	Underselling	22	***	***	***	***
2023	Underselling	20	***	***	***	***
2024	Underselling	19	***	***	***	***
Total, all years	Underselling	61	***	***	***	***
2022	Overselling	10	***	***	***	***
2023	Overselling	12	***	***	***	***
2024	Overselling	13	***	***	***	***
Total, all years	Overselling	35	***	***	***	***

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.

Price-cost comparisons

As shown in table 5.19, landed duty-paid costs for MAMMOs imported from South Korea were below the sales price for U.S.-produced product in 14 of 19 instances (*** pounds); price-cost differentials ranged from *** to *** percent. In the remaining 5 instances (*** pounds), landed duty-paid costs for MAMMOs from South Korea were between *** and *** percent above sales prices for the domestic product. Landed duty-paid costs for MAMMOs imported from Taiwan were below the sales price for U.S.-produced product in 27 of 40 instances (*** pounds); price-cost differentials ranged from *** to *** percent. In the remaining 13 instances (*** pounds), landed duty-paid

costs for MAMMOs from Taiwan were between *** and *** percent above sales prices for the domestic product.

Table 5.18 MAMMOs: Instances of lower and higher import purchase costs and the range and average of price-cost differentials, by product

Quantity in 1,000 pounds contained MAMMOs; differentials in percent.

Product	Type	Number of quarters	Quantity	Average price-cost differential	Min price-cost differential	Max price-cost differential
Product 1	Lower than U.S. price	12	***	***	***	***
Product 2	Lower than U.S. price	13	***	***	***	***
Product 3	Lower than U.S. price	11	***	***	***	***
Product 4	Lower than U.S. price	5	***	***	***	***
Total	Lower than U.S. price	41	***	***	***	***
Product 1	Higher than U.S. price	4	***	***	***	***
Product 2	Higher than U.S. price	7	***	***	***	***
Product 3	Higher than U.S. price	1	***	***	***	***
Product 4	Higher than U.S. price	6	***	***	***	***
Total	Higher than U.S. price	18	***	***	***	***

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 5.19 MAMMOs: Instances of lower and higher import purchase costs and the range and average of price-cost differentials, by source

Quantity in 1,000 pounds contained MAMMOs; differentials in percent.

Source	Type	Number of quarters	Quantity	Average price-cost differential	Min price-cost differential	Max price-cost differential
South Korea	Lower than U.S. price	14	***	***	***	***
Taiwan	Lower than U.S. price	27	***	***	***	***
Total	Lower than U.S. price	41	***	***	***	***
South Korea	Higher than U.S. price	5	***	***	***	***
Taiwan	Higher than U.S. price	13	***	***	***	***
Total	Higher than U.S. price	18	***	***	***	***

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 5.20 MAMMOs: Instances of lower and higher import purchase costs and the range and average of price-cost differentials, by year

Quantity in 1,000 pounds contained MAMMOs; differentials in percent.

Year	Type	Number of quarters	Quantity	Average margin	Min margin	Max margin
2022	Lower than U.S. price	14	***	***	***	***
2023	Lower than U.S. price	10	***	***	***	***
2024	Lower than U.S. price	17	***	***	***	***
Total, all years	Lower than U.S. price	41	***	***	***	***
2022	Higher than U.S. price	6	***	***	***	***
2023	Higher than U.S. price	7	***	***	***	***
2024	Higher than U.S. price	5	***	***	***	***
Total, all years	Higher than U.S. price	18	***	***	***	***

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

The Commission requested that U.S. producers of MAMMOs report purchasers with which they experienced instances of lost sales or revenue due to competition from imports of MAMMOs from South Korea during January 2022 to December 2024. Of the two responding U.S. producers, *** had to reduce prices, *** had to roll back announced price increases, and *** had lost sales. Two U.S. producers (***) submitted lost sales and lost revenue allegations. They identified 18 firms with which they two lost sales, five lost revenues, and eleven lost both sales and revenue. U.S. producer *** reported four allegations with respect to South Korea, six with respect to Taiwan, and one allegation with respect to both South Korea and Taiwan. U.S. producer *** reported that six of these lost sale and lost revenue allegations took place between 2022 and 2023 while one occurred in 2024. Four of these allegations reported lost sales and revenue to Taiwan, one to South Korea, and two to both South Korea and Taiwan.

Staff contacted thirteen purchasers and received responses from six purchasers. Responding purchasers reported purchasing and importing *** pounds of MAMMOs during January 2022 to December 2024 (table 5.21).

Table 5.21 MAMMOs: Purchasers' reported purchases and imports, by firm and source

Quantity in 1,000 pounds contained MAMMOs; Change in shares in percentage points.

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

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

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

During 2024, responding purchasers purchased *** percent from U.S. producers, *** percent from South Korea, and *** percent from Taiwan. Purchasers were asked about changes in their purchasing patterns from different sources since 2022. Purchaser responses on the changes in their purchasing patterns were mixed (table 5.22). Purchaser *** reported that its purchases of MAMMOs from the United States had steadily declined due to loss in revenue which resulted in purchasing imports instead. Purchaser *** also reported its purchases from Taiwan steadily went down due to Taiwan's imports being less competitive. Purchaser *** reported that its purchases from the United States had not changed. Purchaser *** reported that its domestic purchases of MAMMOs steadily went down since a U.S. manufacturer moved to Taiwan (IGM). Purchaser *** also reported that its purchases of MAMMOs from South Korea steadily went down as "Korea is not a major source of supply for *** for these products." On the other hand, purchaser *** reported that its purchases of MAMMOs from Taiwan steadily went up as they leveraged their relationship with *** and continued to purchase *** goods.

Table 5.22 MAMMOs: Count of changes in purchase patterns from U.S., subject, and nonsubject countries

Count in number of firms reporting.

Source of purchases	Steadily Increase	Fluctuate Up	No change	Fluctuate Down	Steadily Decrease	Did not purchase
United States	1	1	1	1	2	0
South Korea	0	2	0	1	2	1
Taiwan	2	0	0	1	1	1
All other sources	0	0	0	1	0	4
Sources unknown	0	0	0	1	0	3

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

Of the six responding purchasers, all reported that, since 2022, they had purchased imported MAMMOs from South Korea (4 firms) or Taiwan (4 firms) instead of U.S.-produced product. Five of these purchasers reported that subject import prices were lower than U.S.-produced product, and three of these purchasers reported that price was a primary reason for the decision to purchase imported product rather than U.S.-produced product. Three purchasers estimated the quantity of MAMMOs from South Korea and Taiwan purchased instead of domestic product; quantities ranged from *** (table 5.23). Purchasers identified availability and supply chain reliability as non-price reasons for purchasing imported rather than U.S.-produced product. Purchasers reported purchasing *** million pounds of MAMMOs from South Korea and *** million pounds of MAMMOs from Taiwan instead of U.S.-produced product (table 5.24).

Of the five responding purchasers, three reported that U.S. producers had reduced prices in order to compete with lower-priced imports from South Korea and Taiwan; three reported that they did not know (table 5.25). The reported estimated price reductions ranged from *** to *** percent. Purchasers reported that the average price reduction was *** for product from South Korea and *** percent for product from Taiwan (table 5.26).

Table 5.23 MAMMOs: Purchasers' responses to purchasing subject imports instead of domestic product, by firm

Quantity in 1,000 pounds contained MAMMOs; count in numbers of firms reporting.

Purchaser	Purchased subject imports instead of domestic	Imports priced lower	Choice based on price	Quantity	Explanation
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
All firms	Yes: 6; No: 0	Yes: 5; No: 0	Yes: 3; No: 0	***	NA

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

Table 5.24 MAMMOs: Purchasers' responses to purchasing subject imports instead of domestic product, by source

Quantity in 1,000 pounds contained MAMMOs; count in numbers of firms reporting.

Source	Count of purchasers reporting subject instead of domestic	Count of purchasers reported that imports were priced lower	Count of purchasers reporting that price was a primary reason for shift	Quantity
South Korea	4	4	2	***
Taiwan	4	3	2	***
Any subject source	6	5	3	***

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

Table 5.25 MAMMOs: Purchasers' responses to U.S. producer price reductions, by firm

Count in number of firms reporting; price reductions in percent.

Purchaser	Reported producers lowered prices	Estimated percent of U.S. price reduction	Explanation
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
All firms	Yes: 3; No: 0	***	NA

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

Note: Purchaser *** provided additional explanations. EDIS Doc ID: ***.

Table 5.26 MAMMOs: Purchasers' responses to U.S. producer price reductions, by source

Price reductions in percent.

Source	Count of purchasers reporting U.S. producers reduced prices	Average percent of estimated U.S. price reduction	Range of percent of estimated U.S. price reductions
South Korea	3	***	***
Taiwan	1	***	***
Total / average	3	***	***

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

In responding to the lost sales lost revenue survey, some purchasers provided additional information on purchases and market dynamics. Purchaser *** reported that Allnex has consistently supported it with both materials, competitive pricing, and reliable delivery while Arkema had failed to meet these needs by cancelling orders without notice. Purchaser *** further reported that Arkema's inability to meet its needs resulted in production shutdowns and it is not able to rely on a single supplier for raw materials and therefore sources materials from alternate suppliers to maintain uninterrupted production.

Part 6: Financial experience of U.S. producers

Background[1]

Allnex and Arkema provided usable financial results on their MAMMOs operations. Both U.S. producers reported financial data for a fiscal year ending December 31 and provided their financial data on the basis of ***. Revenue primarily reflects commercial sales, but also includes transfers and a small volume of internal consumption. Collectively, internal consumption and transfers accounted for *** percent of net sales quantity in 2024.[2]

Figure 6.1 presents each responding firm's share of the total reported net sales quantity in 2024.

[1] The following abbreviations are used in the tables and/or text of this section: international financial reporting standards ("IFRS"), 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] ***. U.S. producers' questionnaire response of ***, question 2-12 and email from ***, April 25, 2025. ***. U.S. producers' questionnaire response of ***, question 2-12.

Figure 6.1 MAMMOs: U.S. producers' share of net sales quantity in 2024, by firm

* * * * * * *

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

Operations on MAMMOs

Table 6.1 presents aggregated data on U.S. producers' operations in relation to MAMMOs, while table 6.2 presents corresponding changes in AUVs. Table 6.3 presents selected company-specific financial data. Information on the merchant market is available in appendix D at tables D.3 and D.4.[3]

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

Quantity in 1,000 pounds contained MAMMOs; value in 1,000 dollars; ratios in percent

Item	Measure	2022	2023	2024
Commercial sales	Quantity	***	***	***
Internal consumption	Quantity	***	***	***
Transfers to related firms	Quantity	***	***	***
Total net sales	Quantity	***	***	***
Commercial sales	Value	***	***	***
Internal consumption	Value	***	***	***
Transfers to related firms	Value	***	***	***
Total net sales	Value	***	***	***
COGS: Raw materials	Value	***	***	***
COGS: Direct labor	Value	***	***	***
COGS: Other factory	Value	***	***	***
COGS: Total	Value	***	***	***
Gross profit or (loss)	Value	***	***	***
SG&A expenses	Value	***	***	***
Operating income or (loss)	Value	***	***	***
Other expense / (income), net	Value	***	***	***
Net income or (loss)	Value	***	***	***
Depreciation/amortization	Value	***	***	***
Cash flow	Value	***	***	***
COGS: Raw materials	Ratio to NS	***	***	***
COGS: Direct labor	Ratio to NS	***	***	***
COGS: Other factory	Ratio to NS	***	***	***
COGS: Total	Ratio to NS	***	***	***
Gross profit	Ratio to NS	***	***	***
SG&A expense	Ratio to NS	***	***	***
Operating income or (loss)	Ratio to NS	***	***	***
Net income or (loss)	Ratio to NS	***	***	***

Table continued.

[3] ***. Email from ***, April 22, 2025.

Table 6.1 (Continued) MAMMOs: U.S. producers' results of operations, by item and period

Shares in percent; unit values in dollars per pound contained MAMMOs; count in number of firms reporting

Item	Measure	2022	2023	2024
COGS: Raw materials	Share	***	***	***
COGS: Direct labor	Share	***	***	***
COGS: Other factory	Share	***	***	***
COGS: Total	Share	100.0	100.0	100.0
Commercial sales	Unit value	***	***	***
Internal consumption	Unit value	***	***	***
Transfers to related firms	Unit value	***	***	***
Total net sales	Unit value	***	***	***
COGS: Raw materials	Unit value	***	***	***
COGS: Direct labor	Unit value	***	***	***
COGS: Other factory	Unit value	***	***	***
COGS: Total	Unit value	***	***	***
Gross profit or (loss)	Unit value	***	***	***
SG&A expenses	Unit value	***	***	***
Operating income or (loss)	Unit value	***	***	***
Net income or (loss)	Unit value	***	***	***
Operating losses	Count	***	***	***
Net losses	Count	***	***	***
Data	Count	2	2	2

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

Note: Shares represent the share of COGS.

Table 6.2 MAMMOs: Changes in AUVs between comparison periods

Changes in percent

Item	2022–24	2022–23	2023–24
Commercial sales	▼***	▼***	▼***
Internal consumption	▼***	▼***	▼***
Transfers to related firms	▼***	▼***	▼***
Total net sales	▼***	▼***	▼***
COGS: Raw materials	▼***	▼***	▼***
COGS: Direct labor	▲***	▲***	▲***
COGS: Other factory	▼***	▼***	▲***
COGS: Total	▼***	▼***	▼***

Table continued.

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

Changes in dollars per pound contained MAMMOs

Item	2022–24	2022–23	2023–24
Commercial sales	▼***	▼***	▼***
Internal consumption	▼***	▼***	▼***
Transfers to related firms	▼***	▼***	▼***
Total net sales	▼***	▼***	▼***
COGS: Raw materials	▼***	▼***	▼***
COGS: Direct labor	▲***	▲***	▲***
COGS: Other factory	▼***	▼***	▲***
COGS: Total	▼***	▼***	▼***
Gross profit or (loss)	▼***	▼***	▼***
SG&A expense	▼***	▲***	▼***
Operating income or (loss)	▼***	▼***	▼***
Net income or (loss)	▼***	▼***	▼***

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

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

Table 6.3 MAMMOs: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Net sales quantity

Quantity in 1,000 pounds contained MAMMOs

Firm	2022	2023	2024
Allnex	***	***	***
Arkema	***	***	***
All firms	***	***	***

Table continued.

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

Net sales value

Value in 1,000 dollars

Firm	2022	2023	2024
Allnex	***	***	***
Arkema	***	***	***
All firms	***	***	***

Table continued.

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

COGS

Value in 1,000 dollars

Firm	2022	2023	2024
Allnex	***	***	***
Arkema	***	***	***
All firms	***	***	***

Table continued.

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

Gross profit or (loss)

Value in 1,000 dollars

Firm	2022	2023	2024
Allnex	***	***	***
Arkema	***	***	***
All firms	***	***	***

Table continued.

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

SG&A expenses

Value in 1,000 dollars

Firm	2022	2023	2024
Allnex	***	***	***
Arkema	***	***	***
All firms	***	***	***

Table continued.

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

Operating income or (loss)

Value in 1,000 dollars

Firm	2022	2023	2024
Allnex	***	***	***
Arkema	***	***	***
All firms	***	***	***

Table continued.

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

Net income or (loss)

Value in 1,000 dollars

Firm	2022	2023	2024
Allnex	***	***	***
Arkema	***	***	***
All firms	***	***	***

Table continued.

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

COGS to net sales ratio

Ratios in percent

Firm	2022	2023	2024
Allnex	***	***	***
Arkema	***	***	***
All firms	***	***	***

Table continued.

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

Gross profit or (loss) to net sales ratio

Ratios in percent

Firm	2022	2023	2024
Allnex	***	***	***
Arkema	***	***	***
All firms	***	***	***

Table continued.

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

SG&A expenses to net sales ratio

Ratios in percent

Firm	2022	2023	2024
Allnex	***	***	***
Arkema	***	***	***
All firms	***	***	***

Table continued.

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

Operating income or (loss) to net sales ratio

Ratios in percent

Firm	2022	2023	2024
Allnex	***	***	***
Arkema	***	***	***
All firms	***	***	***

Table continued.

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

Net income or (loss) to net sales ratio

Ratios in percent

Firm	2022	2023	2024
Allnex	***	***	***
Arkema	***	***	***
All firms	***	***	***

Table continued.

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

Unit net sales value

Unit values in dollars per pound contained MAMMOs

Firm	2022	2023	2024
Allnex	***	***	***
Arkema	***	***	***
All firms	***	***	***

Table continued.

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

Unit raw material costs

Unit values in dollars per pound contained MAMMOs

Firm	2022	2023	2024
Allnex	***	***	***
Arkema	***	***	***
All firms	***	***	***

Table continued.

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

Unit direct labor costs

Unit values in dollars per pound contained MAMMOs

Firm	2022	2023	2024
Allnex	***	***	***
Arkema	***	***	***
All firms	***	***	***

Table continued.

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

Unit other factory costs

Unit values in dollars per pound contained MAMMOs

Firm	2022	2023	2024
Allnex	***	***	***
Arkema	***	***	***
All firms	***	***	***

Table continued.

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

Unit COGS

Unit values in dollars per pound contained MAMMOs

Firm	2022	2023	2024
Allnex	***	***	***
Arkema	***	***	***
All firms	***	***	***

Table continued.

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

Unit gross profit or (loss)

Unit values in dollars per pound contained MAMMOs

Firm	2022	2023	2024
Allnex	***	***	***
Arkema	***	***	***
All firms	***	***	***

Table continued.

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

Unit SG&A expenses

Unit values in dollars per pound contained MAMMOs

Firm	2022	2023	2024
Allnex	***	***	***
Arkema	***	***	***
All firms	***	***	***

Table continued.

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

Unit operating income or (loss)

Unit values in dollars per pound contained MAMMOs

Firm	2022	2023	2024
Allnex	***	***	***
Arkema	***	***	***
All firms	***	***	***

Table continued.

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

Unit net income or (loss)

Unit values in dollars per pound contained MAMMOs

Firm	2022	2023	2024
Allnex	***	***	***
Arkema	***	***	***
All firms	***	***	***

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

Net sales

As shown in table 6.1, the industry's total net sales quantity and value declined by *** percent and *** percent from 2022 to 2023 and increased by *** percent and *** percent from 2023 to 2024, respectively. Overall, total net sales quantity and value declined from 2022 to 2024 by *** percent and *** percent, respectively. On a company-by-company basis shown in table 6.3, *** reported an overall decrease in net sales quantity and value from 2022 to 2024. The average unit sales value declined by *** percent from 2022 to 2024, and *** reported a decline in unit sales value from 2022 to 2024.

Cost of goods sold and gross profit or loss

As shown in table 6.1, raw materials represent the single largest component of total COGS in all years ranged from *** percent of total COGS in 2024 to *** percent of total COGS in 2022. Per-unit raw material costs declined by *** percent from 2022 to 2024. As shown in table 6.3, *** reported a decline in raw material costs per unit from 2022 to 2024. As a ratio to net sales, raw material costs increased from 2022 to 2024. Raw materials consisted of acrylic acid, methacrylic acid, caustic soda, bisphenol-a epoxy, and other material

inputs. The “other material inputs” category included ***.[4] [5]

Table 6.4 presents raw materials, by type.[6]

Table 6.4 MAMMOs: U.S. producers’ raw material costs in 2024

Value in 1,000 dollars; share of value in percent

Item	Value	Share of value
Acrylic acid	***	***
Methacrylic acid	***	***
Caustic Soda	***	***
Bisphenol-A Epoxy	***	***
Other material inputs	***	***
All raw materials	***	100.0

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

As a share of total COGS, direct labor costs ranged from *** percent in 2022 to *** percent in 2024, while other factory costs ranged from *** percent in 2022 to *** percent in 2024. As a ratio to net sales and on a per unit basis, direct labor costs increased from 2022 to 2024, while other factory costs irregularly declined on a per unit basis and consistently increased as a ratio to net sales in the same period.[7]

[4] ***. Email from ***, April 16, 2025.

[5] ***. Email from ***, April 17, 2025.

[6] ***. U.S. producers’ questionnaire response of ***, question 3-6 and 3-7a.

[7] ***. Emails from ***, April 29 and 30, 2025. ***. Email from ***, April 29, 2025.

Total COGS declined by *** percent from 2022 to 2023 and increased by *** percent from 2023 to 2024, and overall total COGS declined by *** percent from 2022 to 2024. As shown in table 6.3, *** reported an overall decline in total COGS from 2022 to 2024. As a ratio to net sales, total COGS increased from 2022 to 2024 whereas COGS per unit declined in the same period mainly driven by increased raw material costs to net sales ratios and declined raw material costs per unit, respectively.

Table 6.1 shows that U.S. producers' aggregate gross profit declined from 2021 to 2023 because the decline in total net sales value was greater than the decline in total COGS. As a ratio to net sales and on a per unit basis, gross profit declined from 2022 to 2024. As shown in table 6.3, *** reported a decline in total gross profit from 2022 to 2024.

SG&A expenses and operating income or loss

As shown in table 6.1, the U.S. industry's SG&A expenses declined irregularly from 2022 to 2024. SG&A expenses as a ratio to net sales increased from 2022 to 2024, while SG&A expenses per unit declined irregularly from 2022 to 2024. As shown in table 6.3, *** reported an increase in SG&A expenses as a ratio from 2022 to 2024.[8]

Table 6.1 shows that U.S. producers' aggregate operating income declined from *** 2022 to *** in 2024. The operating income margin (operating income as a ratio to net sales) exhibited the same trend as the operating income. As shown in table 6.3, the operating income of *** declined from 2022 to 2024, and *** reported an operating loss in 2024.

All other expenses and net income or loss

Interest expense, other expense, and other income are classified below the operating income level. In table 6.1, these items are aggregated and only the net amount is shown, which in these investigations are negative values in 2022 and 2023 reflecting net other income. Net other income declined from 2022 to 2023, and net other expenses were reported in 2024. *** is then only firm which reported net other income/expenses.

[8] ***. Email from ***, April 29, 2025. ***. Email from ***, April 29, 2025.

As shown in table 6.1, net income declined from *** in 2022 to *** in 2024. The net income margin (net income as a ratio to net sales) exhibited the same trend as the net income. As shown in table 6.3, *** reported a decline in net income, and *** reported a net loss in 2024.[9]

[9] A variance analysis is most useful for products that do not have substantial changes in product mix over the period for which data were collected, and the methodology is most sensitive at the plant or firm level, rather than the aggregated industry level. A variance analysis is not shown due to the large variety of product mixes (monomers and oligomers) and cost structures among the reporting firms.

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.

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

Value in 1,000 dollars

Firm	2022	2023	2024
Allnex	***	***	***
Arkema	***	***	***
All firms	***	***	***

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

Table 6.6 MAMMOs: U.S. producers' narrative descriptions of their capital expenditures, by firm

Firm	Narrative on capital expenditures
Allnex	***
Arkema	***

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

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

Value in 1,000 dollars

Firm	2022	2023	2024
Allnex	***	***	***
Arkema	***	***	***
All firms	***	***	***

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

Table 6.8 MAMMOs: U.S. producers' narrative descriptions of their R&D expenses, by firm

Firm	Narrative on R&D expenses
Allnex	***
Arkema	***

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.[10] Table 6.11 presents U.S. producers' narrative responses explaining their major asset categories and any significant changes in asset levels over time.

Table 6.9 MAMMOs: U.S. producers' total net assets, by firm and period

Value in 1,000 dollars

Firm	2022	2023	2024
Allnex	***	***	***
Arkema	***	***	***
All firms	***	***	***

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

Table 6.10 MAMMOs: U.S. producers' ROA, by firm and period

Ratio in percent

Firm	2022	2023	2024
Allnex	***	***	***
Arkema	***	***	***
All firms	***	***	***

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

Table 6.11 MAMMOs: U.S. producers' narrative descriptions of their total net assets, by firm

Firm	Narrative on assets
Allnex	***
Arkema	***

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

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

Capital and investment

The Commission requested U.S. producers of MAMMOs to describe any actual or potential negative effects of imports of MAMMOs from South Korea and Taiwan 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 MAMMOs: Count of firms indicating actual and anticipated negative effects of imports from subject sources on investment, growth, and development since January 1, 2022, 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 MAMMOs: U.S. producers' narratives relating to actual and anticipated negative effects of imports on investment, growth, and development, since January 1, 2022, 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 alleged 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."

Subject countries

The Commission issued foreign producers' or exporters' questionnaires to 19 firms believed to produce and/or export MAMMOs from South Korea and Taiwan.[3] Usable responses to the Commission's questionnaire were received from 5 firms in total.

Table 7.1 presents the number of producers/exporters that responded to the Commission's questionnaire, their estimated share of total production of MAMMOs, and their exports to the United States as a share of U.S. imports, by each subject country in 2024.[4]

Table 7.1 MAMMOs: Number of responding producers/exporters, approximate share of production, and exports to the United States as a share of U.S. imports, by subject foreign industry, 2024

Subject foreign industry	Number of responding firms	Approximate share of production (percent)	Exports as a share of U.S. imports from subject country (percent)
South Korea	1	***	***
Taiwan	4	***	***
All subject foreign industries	5	NA	***

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 country production of MAMMOs in 2024. 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. For countries in which more than one firm responded, the average denominator for reasonably reported estimates is used in the share presented. Approximate shares are rounded to the nearest whole number. Exports as a share of U.S. imports by source are 2024 reported exports to the United States. from foreign producer questionnaire responses divided by U.S. imports as reported in Table 4.2.

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

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

[4] Two firms (***) certified that it had not produced or exported MAMMOs to at any time since January 1, 2022.

Table 7.2 presents information on the MAMMOs operations of the responding producers in South Korea and Taiwan (or the responding subject producers, by firm) and table 7.3 presents summary information on responding resellers of subject MAMMOs.

Table 7.2 MAMMOs: Summary data on responding subject foreign producers in 2024, by firm

Subject foreign industry: Producer	Production (1,000 pounds contained MAMMOs)	Share of reported production (percent)	Exports to the United States (1,000 pounds contained MAMMOs)	Share of reported exports to the United States (percent)	Total shipments (1,000 pounds contained MAMMOs)	Share of firm's total shipments exported to the United States (percent)
South Korea: Miwon	***	***	***	***	***	***
Taiwan: Covestro	***	***	***	***	***	***
Taiwan: Eternal	***	***	***	***	***	***
Taiwan: Qualipoly	***	***	***	***	***	***
All individual producers	***	100.0	***	100.0	***	***

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

Table 7.3 MAMMOs: Summary data on subject foreign industries in 2024, by source

Subject foreign industry: Producer	Resales exported to the United States (1,000 pounds contained MAMMOs)	Share of resales exported to the United States (percent)
Taiwan: Covestro	***	***
Taiwan: Synth-Edge	***	***
All individual resellers	***	100.0

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

Table 7.4 presents events in the subject countries' industries since January 1, 2022.

Table 7.4 MAMMOs: Important industry events in the subject foreign industry since 2022

Item	Firm: Event
Expansions	Qualipoly: On December 24, 2024, Qualipoly announced the investment of over NT$2 billion to expand its manufacturing plant in Tainan Industrial Park, Taiwan, increasing its production capacity for UV curing materials.
Plant Openings	Miwon Specialty Chemical Co., Ltd.: On January 1, 2022, Miwon Specialty Chemical Co. signed an investment agreement to build a factory for energy curing resins in North Chungcheongbuk, South Korea.
Plant Openings	Miwon Specialty Chemical Co., Ltd.: On July 18, 2024, Miwon Specialty Chemical Co. announced the investment of 60.5 billion won to build a new production facility in Wanju Techno Valley, South Korea, for energy-curing resins.
Weather-related or force majeure events	Sumitex Techsheet: On July 14, 2023, a fire broke out at Sumitex's acrylic sheet manufacturing plan in Kaohsiung City, Taiwan. The plant manufactures acrylic sheets that use pure methyl methacrylate monomers as a raw material (sourced by Sumitomo Chemical in Japan).
Other	Covestro: On May 20, 2022, Covestro Taiwan Ltd announced the opening of its new R&D center, specializing in resin synthesis and fiberoptic coating. The R&D center aims to make its UV-cured resin synthesis process more sustainable and replace fossil-based material with plant-based material.

Source: Taiwan Ministry of Economic Affairs, "Qualipoly Chemical Corp. Invests NT$2 Billion to Expand Tainan Plant, Creating Hundreds of Jobs and Leading the UV Curing Materials Market," December 12, 2024, https://www.moea.gov.tw/MNS/english/news/News.aspx?kind=6&menu_id=176&news_id=118224; KPI News, "Established Miwon Specialty Chemical Display Material Factory in Eumseong, Chungbuk," January 1, 2022, Petition, exh. I.18, pp. 22 to 23; Newsis, "Miwon SC Invests 60.5 Billion Won in Wanju Techno Valley New Factory," July 18, 2024, Petition, exh. I.18, p. 15; Taiwan News, "Fire Breaks Out at Sumitex TechSheet Acrylic Factory in South Taiwan," July 14, 2023, https://www.taiwannews.com.tw/news/4944286; Taipei Times, "Covestro Opens NCU Research and Development Center," May 20, 2022, https://www.taipeitimes.com/News/biz/archives/2022/05/20/2003778487.

Changes in operations

Subject producers were asked to report any change in the character of their operations or organization relating to the production of MAMMOs since 2022. *** of *** foreign producers indicated in their questionnaires that they had experienced such changes. Tables 7.5 presents the changes identified by these producers.

Table 7.5 MAMMOs: Reported changes in operations in the subject countries since January 1, 2022, by reported change category, subject foreign industry, and firm

Item	Subject foreign industry, firm name and accompanying narrative response regarding changes in operations
Plant closings	***
Production curtailments	***
Expansions	***
Expansions	***
Acquisitions	***
Weather-related or force majeure events	***
Other	***
Other	***

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

Table 7.6 presents anticipated changes in operations identified by subject producers.

Table 7.6 MAMMOs: Reported anticipated changes in operations in the subject countries since January 1, 2022, by change, subject foreign industry, and firm

Subject foreign industry: Firm name	Narrative on anticipated changes in operations
***	***
***	***

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

Installed and practical overall capacity

Table 7.7 presents data on subject producers' installed capacity, practical overall capacity, and practical MAMMOs capacity and production on the same equipment. South Korean and Taiwanese producers' installed overall capacity increased by *** percent from 2022 to 2023, then increased by *** percent from 2023 to 2024, for an overall increase of *** percent between 2022 and 2024. Following a similar trend, practical overall capacity increased by *** percent from 2022 to 2023, then increased by *** percent from 2023 to 2024, increasing overall by *** percent during 2022–24. Likewise, practical MAMMOs capacity increasing by *** percent during the data collection period and growing mostly between 2023 and 2024 by *** percent to *** pounds in 2024.

Foreign producers' from subject sources installed overall capacity utilization decreased by *** percentage points to *** percent in 2023, then increased by *** percentage points to *** percent in 2024, ending *** percentage points higher in 2024 compared to 2022. Practical overall capacity utilization decreased by *** percentage points to *** percent in 2023, then increased by *** percentage points to *** percent in 2024, increasing overall by *** percentage points during 2022–24.

Table 7.7 MAMMOs: Subject producers' installed and practical capacity and production on the same equipment as in-scope production, by period

Capacity and production in 1,000 pounds contained MAMMOs; utilization in percent

Item	Measure	2022	2023	2024
Installed overall	Capacity	***	***	***
Installed overall	Production	***	***	***
Installed overall	Utilization	***	***	***
Practical overall	Capacity	***	***	***
Practical overall	Production	***	***	***
Practical overall	Utilization	***	***	***
Practical MAMMOs	Capacity	***	***	***
Practical MAMMOs	Production	***	***	***
Practical MAMMOs	Utilization	***	***	***

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

Constraints on capacity

Table 7.8 presents subject producers' reported production and capacity constraints since January 1, 2022. Foreign producers noted *** types of overall capacity constraints among ***.

Table 7.8 MAMMOs: Subject producers' reported practical overall capacity constraints since January 1, 2022, by constraint and firm

Type of constraint	Subject foreign industry, firm name, and narrative response on constraints to practical overall capacity
Production bottlenecks	***
Production bottlenecks	***
Production bottlenecks	***
Production bottlenecks	***
Existing labor force	***
Existing labor force	***
Existing labor force	***
Existing labor force	***
Storage capacity	***
Storage capacity	***
Storage capacity	***

Table continued.

Table 7.8 (Continued) MAMMOs: Subject producers' reported practical overall capacity constraints since January 1, 2022, by constraint and firm

Type of constraint	Subject foreign industry, firm name, and narrative response on constraints to practical overall capacity
Logistics/transportation	***
Logistics/transportation	***
Other constraints	***
Other constraints	***

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

Operations on MAMMOs

Aggregate MAMMOs operations in the subject countries

Table 7.9 presents information on the MAMMOs operations of the responding producers/exporters (aggregate data for all subject foreign industries). Foreign production of MAMMOs decreased by *** percent to *** pounds in 2023, then increased by *** percent to *** pounds in 2024, for an overall *** percent increase between 2022 and 2024. Unlike installed overall and practical overall capacity utilization, foreign producers' capacity utilization decreased overall by *** percentage points between 2022 and 2024, declining by *** percentage points to *** percent in 2023, before increasing by *** percentage points to *** percent in 2024. Capacity and production are both projected to be lower in 2025 and higher 2026 compared to 2024, as capacity utilization is expected to be higher in 2025 and 2026.

Export shipments accounted for above *** percent of responding foreign producers' total shipments during the data collection period. In that period, roughly half of these shipments (*** percent) were exports to other markets that included *** Exports to all other markets declined irregularly overall by *** percent during 2022–24, because of a *** percent decrease in 2023 followed by a *** percent increase in 2024. Foreign producers' exports to the United States increased by *** percent to *** pounds in 2023, then further increased by *** percent to *** pounds in 2024, increasing overall by *** percent between 2022 and 2024. Exports to the United States comprised *** percent of total shipments in 2022 and grew to *** percent in 2023 where it remained in 2024. These exports are projected to be lower in 2025 and higher in 2026

compared to 2024, while exports to all other markets are projected to follow the same pattern. Between 2022 and 2024, the share of home market shipments increased modestly from *** percent in 2022 to *** percent in 2024.

Table 7.9 MAMMOs: Data on subject foreign industries, by item and period

Quantity in 1,000 pounds contained MAMMOs

Item	2022	2023	2024	Projection 2025	Projection 2026
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 7.9 (Continued) MAMMOs: Data on subject foreign industries, by period

Ratio and share in percent

Item	2022	2023	2024	Projection 2025	Projection 2026
Capacity utilization ratio	***	***	***	***	***
Inventory ratio to production	***	***	***	***	***
Inventory ratio to total shipments	***	***	***	***	***
Internal consumption share	***	***	***	***	***
Commercial home market shipments share	***	***	***	***	***
Home market shipments share	***	***	***	***	***
Exports to the United States share	***	***	***	***	***
Exports to all other markets share	***	***	***	***	***
Export shipments share	***	***	***	***	***
Total shipments share	***	***	***	***	***
Share of total exports to the U.S. by producers	***	***	***	***	***
Share of total exports to the U.S. by resellers	***	***	***	***	***
Adjusted shares of total shipments exported to the United States	***	***	***	***	***

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

Table 7.10 presents subject foreign producers output by product type during the period of data collection. About *** of foreign producers' capacity and production of MAMMOs were for monomers, though oligomer production in levels and in share terms increased overall in this period.

Table 7.10 MAMMOs: Foreign producers' in the subject foreign industries, by product type and period

Capacity and production in 1,000 pounds contained MAMMOs; ratio and share in percent

Product type	Measure	2022	2023	2024
Monomers	Capacity	***	***	***
Oligomers	Capacity	***	***	***
All MAMMOs	Capacity	***	***	***
Monomers	Production	***	***	***
Oligomers	Production	***	***	***
All MAMMOs	Production	***	***	***
Monomers	Utilization	***	***	***
Oligomers	Utilization	***	***	***
All MAMMOs	Utilization	***	***	***
Monomers	Share of production	***	***	***
Oligomers	Share of production	***	***	***
All MAMMOs	Share of production	100.0	100.0	100.0

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

Practical MAMMOs capacity and production by subject foreign industry

Table 7.11 presents information on subject foreign industries' production, capacity, and capacity utilization by country. South Korean producers of MAMMOs comprised the majority of MAMMOs practical capacity and production during the data collection period. In particular, the production of MAMMOs in South Korea was *** percent of MAMMOs production in subject sources in 2024, down *** percent from 2022. Practical capacity for both South Korean and Taiwanese producers increased about *** percent overall during 2022–24. Since 2022, while South Korean production of MAMMOs decreased irregularly by *** percent to *** pounds in 2024, Taiwanese production of MAMMOs increased by *** percent to *** pounds in 2024. The responding producers reported that capacity is expected to remain relatively flat for each subject country in 2025 and 2026. However, production is projected to increase by at least *** percent for South Korean MAMMOs producers in 2025 and 2026, while Taiwanese producers anticipate a *** percent decline in production in 2025 followed by a *** percent higher production in 2026 compared to 2022.

Decreases in foreign producers' capacity utilization during the period of data collection were driven by the experience of responding South Korean producers. Capacity utilization declined by *** percentage points, from *** in 2022 percent to *** percent in 2024. South Korean producers project capacity utilization increase by *** percentage points in 2025 and *** percentage points in 2026, compared to 2024. Taiwanese producers expect capacity utilization to decrease by *** percentage points in 2025 and to be *** percentage points higher in 2026 compared to 2024.

Table 7.11 MAMMOs: Subject foreign industries' output: Practical capacity, by source and period

Practical capacity

Capacity in 1,000 pounds contained MAMMOs

Subject foreign industry	2022	2023	2024	Projection 2025	Projection 2026
South Korea	***	***	***	***	***
Taiwan	***	***	***	***	***
All subject foreign industries	***	***	***	***	***

Table continued.

Table 7.11 (Continued) MAMMOs: Subject foreign industries' output: Production, by source and period

Production

Production in 1,000 pounds contained MAMMOs

Subject foreign industry	2022	2023	2024	Projection 2025	Projection 2026
South Korea	***	***	***	***	***
Taiwan	***	***	***	***	***
All subject foreign industries	***	***	***	***	***

Table continued.

Table 7.11 (Continued) MAMMOs: Subject foreign industries' output: Capacity utilization, by source and period

Capacity utilization

Capacity utilization in percent

Subject foreign industry	2022	2023	2024	Projection 2025	Projection 2026
South Korea	***	***	***	***	***
Taiwan	***	***	***	***	***
All subject foreign industries	***	***	***	***	***

Table continued.

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

Table 7.11 (Continued) MAMMOs: Subject foreign industries' output: Share of production, by source and period

Share of production

Share in percent

Subject foreign industry	2022	2023	2024	Projection 2025	Projection 2026
South Korea	***	***	***	***	***
Taiwan	***	***	***	***	***
All subject foreign industries	***	***	***	***	***

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

MAMMOs exports, by subject country

Table 7.12 presents information on subject producers' (and resellers) exports of MAMMOs by subject country. Less than *** percent of South Korean MAMMOs shipments when to the United States compared to *** percent of Taiwanese MAMMOs shipments during the data collection period. These exports increased overall by *** for South Korean shipments and *** percent for Taiwanese shipments throughout 2022–24. South Korean firms anticipate exports to the United States to increase by *** percent in 2025 and to be *** percent higher in 2026 compared to 2024. Conversely, Taiwanese firms expect exports to the United States to decline by *** percent in 2025 and to be *** percent lower

in 2026 compared to 2024. Total exports from both sources are project to increase in 2025 and 2026.

Table 7.12 MAMMOs: Subject foreign industries' exports: Exports to the United States, by source and period

Exports to the United States

Quantity in 1,000 pounds contained MAMMOs

Subject foreign industry	2022	2023	2024	Projection 2025	Projection 2026
South Korea	***	***	***	***	***
Taiwan	***	***	***	***	***
All subject foreign industries	***	***	***	***	***

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

Table 7.12 (Continued) MAMMOs: Subject foreign industries' exports: Share of total shipments exported to the United States, by source and period

Share of total shipments exported to the United States

Share in percent

Subject foreign industry	2022	2023	2024	Projection 2025	Projection 2026
South Korea	***	***	***	***	***
Taiwan	***	***	***	***	***
All subject foreign industries	***	***	***	***	***

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

Table 7.12 (Continued) MAMMOs: Subject foreign industries' exports: Exports to all destination markets, by source and period

Total exports

Quantity in 1,000 pounds contained MAMMOs

Subject foreign industry	2022	2023	2024	Projection 2025	Projection 2026
South Korea	***	***	***	***	***
Taiwan	***	***	***	***	***
All subject foreign industries	***	***	***	***	***

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

Table 7.12 (Continued) MAMMOs: Subject foreign industries' exports: Share of total shipments exported to all destinations, by source and period

Share of total shipments exported

Share in percent

Subject foreign industry	2022	2023	2024	Projection 2025	Projection 2026
South Korea	***	***	***	***	***
Taiwan	***	***	***	***	***
All subject foreign industries	***	***	***	***	***

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

MAMMOs inventories, by subject foreign industry

Table 7.13 presents information on ending inventory of the responding producers by subject foreign country. End of period inventories were less than *** percent of total shipments for foreign producers during the data collection period. Foreign firms in South Korea anticipate inventories to decrease in 2025 and 2026, while Taiwanese producers project inventories will increase in 2026 following a decline in 2025.

Table 7.13 MAMMOs: Subject foreign industries' inventories: End of period inventories, by source and period

Quantity in 1,000 pounds contained MAMMOs

Subject foreign industry	2022	2023	2024	Projection 2025	Projection 2026
South Korea	***	***	***	***	***
Taiwan	***	***	***	***	***
All subject foreign industries	***	***	***	***	***

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

Table 7.13 (Continued) MAMMOs: Subject foreign industries' inventories: Ratio of end of period inventories to total shipments, by source and period

Ratio in percent

Subject foreign industry	2022	2023	2024	Projection 2025	Projection 2026
South Korea	***	***	***	***	***
Taiwan	***	***	***	***	***
All subject foreign industries	***	***	***	***	***

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

Alternative products

As shown in table 7.14, responding firms in South Korea and Taiwan produced other products on the same equipment and machinery used to produce MAMMOs. The share of foreign producers' overall production accounted for by out-of-scope products increased by *** percentage points from 2022 to 2024, reflecting the larger increase in production of other products over this period compared to the increase in production of MAMMOs. *** foreign producers reported production of out-of-scope products. Out-of-scope products include ***.

Table 7.14 MAMMOs: Subject foreign industries' overall production on the same equipment as in-scope production, by product type and period

Quantity in 1,000 pounds contained MAMMOs; share in percent

Product type	Measure	2022	2023	2024
MAMMOs	Quantity	***	***	***
Other products	Quantity	***	***	***
All products	Quantity	***	***	***
MAMMOs	Share	***	***	***
Other products	Share	***	***	***
All products	Share	100.0	100.0	100.0

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

Exports

Table 7.15 presents Global Trade Atlas ("GTA") data for exports of esters of acrylic and methacrylic acid from subject countries to the United States and to all destination markets. Exports to the United States collectively reported for the subject foreign industries under this category increased 21.8 percent, from 85.2 million pounds in 2022 to 103.7 million pounds in 2024. During this period, exports from South Korea to the United States grew by 55.6 percent while exports from Taiwan of the same decreased by 11.2 percent. Exports to all destination markets collectively reported for the subject foreign industries under this category increased by 14.5 percent, from 591.9 million pounds in 2022 to 677.6 million pounds in 2024. Contrarily, global exports from Korea decreased by 19.1 percent as global exports from Taiwan increased by 42.5 percent between 2022 and 2024. From 2022, South Korean exports of esters of acrylic and methacrylic acid to the United States as a share of global exports increased by 14.4 percentage points to 30.0 percent in 2024. During this time, the share of Taiwanese exports to the United States to its global exports decreased by 5.0 percentage points to 8.3 percent in 2024.

Table 7.15 Esters of acrylic and methacrylic acid: Global exports from subject foreign industries: Exports to the United States, by subject foreign country and period

Quantity in 1,000 pounds

Exporter	Measure	2022	2023	2024
South Korea	Quantity	42,109	48,834	65,522
Taiwan	Quantity	43,064	26,418	38,224
Subject exporters	Quantity	85,173	75,252	103,746

Table continued.

Table 7.15 (Continued) Esters of acrylic and methacrylic acid: Global exports from subject foreign industries: Exports to all destination markets, by subject foreign country and period

Quantity in 1,000 pounds

Exporter	Measure	2022	2023	2024
South Korea	Quantity	269,543	258,867	218,161
Taiwan	Quantity	322,334	387,833	459,444
Subject exporters	Quantity	591,877	646,700	677,605

Table continued.

Table 7.15 (Continued) Esters of acrylic and methacrylic acid: Global exports from subject foreign industries: Share of exports exported to the United States, by subject foreign country and period

Share in percent

Exporter	Measure	2022	2023	2024
South Korea	Share	15.6	18.9	30.0
Taiwan	Share	13.4	6.8	8.3
Subject exporters	Share	14.4	11.6	15.3

Source: Official exports statistics and official global imports statistics from South Korea and Taiwan under HS subheadings 2916.12 and 2916.14 as reported by various national statistical authorities in the Global Trade Atlas Suite database, accessed April 3, 2025.

U.S. inventories of imported merchandise

Table 7.16 presents data on U.S. importers' reported inventories of MAMMOs. Inventories of imports from all subject sources decreased by *** percent from 2022 to 2023, then increased by *** percent from 2023 to 2024, for an overall *** percent decrease between 2022 and 2024. Inventories of MAMMOs imports from South Korea decreased irregularly by *** percent during the data collection period, while inventories of MAMMOs imports from Taiwan increased by *** percent. Comparatively, inventories of imports from nonsubject sources decreased by *** percent from 2022 to 2024. Inventories of imports from South Korea as a ratio to imports declined from *** percent of imports in 2022 to *** percent in 2024. As a ratio to imports, inventories of MAMMOs imports from Taiwan decreased *** percentage points during 2022–24. Conversely, inventories of nonsubject imports of MAMMOs as a ratio to imports increased *** percentage points in that period.

Table 7.16 MAMMOs: U.S. importers' inventories and their ratio to select items, by source and period

Quantity in 1,000 pounds contained MAMMOs; ratio in percent

Measure	Source	2022	2023	2024
Inventories quantity	South Korea	***	***	***
Ratio to imports	South Korea	***	***	***
Ratio to U.S. shipments of imports	South Korea	***	***	***
Ratio to total shipments of imports	South Korea	***	***	***
Inventories quantity	Taiwan	***	***	***
Ratio to imports	Taiwan	***	***	***
Ratio to U.S. shipments of imports	Taiwan	***	***	***
Ratio to total shipments of imports	Taiwan	***	***	***
Inventories quantity	Subject sources	***	***	***
Ratio to imports	Subject sources	***	***	***
Ratio to U.S. shipments of imports	Subject sources	***	***	***
Ratio to total shipments of imports	Subject sources	***	***	***
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.

U.S. importers' outstanding orders

The Commission requested importers to indicate whether they imported or arranged for the importation of MAMMOs from South Korea and Taiwan after December 31, 2024. Their reported data are presented in table 7.17. Of the 17 responding importers, *** firms reported arranged imports of MAMMOs from South Korea, *** firms reported arranged imports of MAMMOs from Taiwan, and *** firms reported arranged imports of MAMMOs from nonsubject sources. Imports from South Korea and Taiwan represent *** percent and *** percent of U.S. importers' total arranged imports, respectively.

Table 7.17 MAMMOs: U.S. importers' arranged imports, by source and period

Quantity in 1,000 pounds contained MAMMOs

Source	Q1 2025	Q2 2025	Q3 2025	Q4 2025	Total
South Korea	***	***	***	***	***
Taiwan	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***

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

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

Third-country trade actions

Based on available information, MAMMOs from the subject sources have not been subject to other antidumping or countervailing duty investigations outside the United States.[5]

Information on nonsubject countries

Table 7.18 presents data for global exports of esters of acrylic and methacrylic acid under HS subheadings 2916.12 and 2916.14. Exports under these subheadings include both in-scope MAMMOs and out-of-scope products. From 2022 to 2024, there was a 14.5 percent increase in the volume of total exports from the subject sources (South Korea and Taiwan). During the period of investigation, the largest exporter was China by a large margin, as China increased its volume of global exports by 48.5 percent from 2022 to 2024. During the same period, the subject exporters share of global exports increased from 8.7 percent to 10.1 percent while China's share of global exports increased from 16.9 percent to 25.6 percent.

[5] Conference transcript, p. 61 (Mintzer).

Table 7.18 Esters of acrylic and methacrylic acid: Global exports by reporting market and period
Quantity in 1,000 pounds; value in 1,000 dollars

Exporting country	Measure	2022	2023	2024
United States	Quantity	843,534	802,131	833,255
South Korea	Quantity	269,543	258,867	218,161
Taiwan	Quantity	322,334	387,833	459,444
Subject exporters	Quantity	591,877	646,700	677,605
China	Quantity	1,153,116	1,117,312	1,712,077
Belgium	Quantity	823,398	775,595	766,000
Germany	Quantity	708,714	598,338	645,407
Malaysia	Quantity	279,751	601,716	325,916
Japan	Quantity	339,577	326,345	325,113
France	Quantity	300,667	255,637	316,490
Netherlands	Quantity	228,978	236,137	271,835
Singapore	Quantity	288,156	210,294	211,773
Thailand	Quantity	260,150	230,415	197,677
All other exporters	Quantity	989,273	705,390	402,105
All reporting exporters	Quantity	6,807,192	6,506,009	6,685,254
United States	Value	949,761	656,450	644,097
South Korea	Value	344,718	253,808	247,645
Taiwan	Value	372,645	312,095	406,588
Subject exporters	Value	717,363	565,903	654,233
China	Value	1,122,149	791,491	1,266,075
Belgium	Value	986,005	718,231	654,149
Germany	Value	835,650	565,286	571,030
Malaysia	Value	203,658	176,858	184,296
Japan	Value	444,007	335,560	374,938
France	Value	411,657	267,066	293,177
Netherlands	Value	374,257	301,439	338,423
Singapore	Value	252,882	143,392	167,693
Thailand	Value	206,057	152,633	160,758
All other exporters	Value	897,861	676,024	317,012
All reporting exporters	Value	7,401,306	5,350,334	5,625,881

Table continued.

Table 7.18 (Continued) Esters of acrylic and methacrylic acid: Global exports by reporting market and period

Unit values in dollars per pound; shares in percent

Exporting country	Measure	2022	2023	2024
United States	Unit value	1.13	0.82	0.77
South Korea	Unit value	1.28	0.98	1.14
Taiwan	Unit value	1.16	0.80	0.88
Subject exporters	Unit value	1.21	0.88	0.97
China	Unit value	0.97	0.71	0.74
Belgium	Unit value	1.20	0.93	0.85
Germany	Unit value	1.18	0.94	0.88
Malaysia	Unit value	0.73	0.29	0.57
Japan	Unit value	1.31	1.03	1.15
France	Unit value	1.37	1.04	0.93
Netherlands	Unit value	1.63	1.28	1.24
Singapore	Unit value	0.88	0.68	0.79
Thailand	Unit value	0.79	0.66	0.81
All other exporters	Unit value	0.91	0.96	0.79
All reporting exporters	Unit value	1.09	0.82	0.84
United States	Share of quantity	12.4	12.3	12.5
South Korea	Share of quantity	4.0	4.0	3.3
Taiwan	Share of quantity	4.7	6.0	6.9
Subject exporters	Share of quantity	8.7	9.9	10.1
China	Share of quantity	16.9	17.2	25.6
Belgium	Share of quantity	12.1	11.9	11.5
Germany	Share of quantity	10.4	9.2	9.7
Malaysia	Share of quantity	4.1	9.2	4.9
Japan	Share of quantity	5.0	5.0	4.9
France	Share of quantity	4.4	3.9	4.7
Netherlands	Share of quantity	3.4	3.6	4.1
Singapore	Share of quantity	4.2	3.2	3.2
Thailand	Share of quantity	3.8	3.5	3.0
All other exporters	Share of quantity	14.5	10.8	6.0
All reporting exporters	Share of quantity	100.0	100.0	100.0

Source: Official exports statistics under HS subheadings 2916.12 and 2916.14 as reported by various national statistical authorities in the Global Trade Atlas Suite database, accessed April 3, 2025.

Note: United States is shown at the top followed by the countries under investigation, all remaining top exporting countries in descending order of 2024 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
90 FR 14475, March 27, 2025	Multifunctional Acrylate and Methacrylate Monomers, and Acrylated Bisphenol-A Epoxy Based Oligomers From South Korea and Taiwan; Institution of Antidumping and Countervailing Duty Investigations and Scheduling of Preliminary Phase Investigations	https://www.govinfo.gov/content/pkg/FR-2025-04-02/pdf/2025-05617.pdf z
90 FR 17032, April 23, 2025	Certain Monomers and Oligomers From Taiwan: Initiation of Countervailing Duty Investigation	https://www.govinfo.gov/content/pkg/FR-2025-04-23/pdf/2025-06934.pdf
90 FR 17044, April 23, 2025	Certain Monomers and Oligomers From the Republic of Korea and Taiwan: Initiation of Less-Than-Fair-Value Investigations	https://www.govinfo.gov/content/pkg/FR-2025-04-23/pdf/2025-06933.pdf

APPENDIX B

LIST OF STAFF CONFERENCE WITNESSES

CALENDAR OF PUBLIC PRELIMINARY CONFERENCE

Those listed below are scheduled to appear as witnesses at the United States International Trade Commission's preliminary conference:

Subject: Multifunctional Acrylate and Methacrylate Monomers and Oligomers (MAMMOs) from South Korea and Taiwan

Inv. Nos.: 701-TA-759 and 731-TA-1740-1741 (Preliminary)

Date and Time: April 17, 2025 – 9:30 a.m.

Sessions will be held in connection with these preliminary phase investigations all virtually via Webex.

OPENING REMARKS:	**TIME ALLOCATION:**
In Support of Imposition (**Sydney Mintzer,** Mayer Brown LLP)	5 minutes

In Support of the Imposition of the Antidumping and Countervailing Duty Orders:	**TIME ALLOCATION:**
Mayer Brown LLP Washington, DC on behalf of Arkema Inc.	60 minutes

Matthew Crans, Business Director of Sartomer, Arkema, Inc.

Jeffrey Klang, Global R&D Director, Synthesis and Innovation, Arkema Inc.

Stephanie Montag, President of Sartomer Americas, Arkema Inc.

Sarah Arsenault-Preece, Director of Product Management and Commercial Excellence for the Americas, Allnex USA Inc.

Jennifer McClung, Product Line Manager, Radcure America, Allnex USA Inc.

In Support of the Imposition of the

Antidumping and Countervailing Duty Orders (continued):

Andrew Szamosszegi, Principal, Capital Trade, Inc.

Sydney Mintzer)
Jacob Reiskin) – OF COUNSEL
Valerie Denaburg)

REBUTTAL/CLOSING REMARKS:

In Support of Imposition (**Sydney Mintzer**, Mayer Brown LLP) 10 minutes

APPENDIX C

SUMMARY DATA

Total market

Table C.1
MAMMOs: Summary data concerning the U.S. total market, by item and period
Quantity=1,000 pounds contained MAMMOs; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per pound contained MAMMOs; Productivity=pounds contained MAMMOs per hour; Period changes=percent--exceptions noted

Item	Reported data			Period change comparisons		
	Calendar year			Calendar year		
	2022	2023	2024	2022–24	2022–23	2023–24
U.S. total market consumption quantity:						
Amount	***	***	***	▼***	▼***	▲***
Producers' share (fn1)	***	***	***	▼***	▼***	▲***
Importers' share (fn1):						
South Korea	***	***	***	▲***	▲***	▲***
Taiwan	***	***	***	▲***	▲***	▼***
Subject sources	***	***	***	▲***	▲***	▲***
Nonsubject sources	***	***	***	▼***	▲***	▼***
All import sources	***	***	***	▲***	▲***	▼***
U.S. total market consumption value:						
Amount	***	***	***	▼***	▼***	▼***
Producers' share (fn1)	***	***	***	▼***	▼***	▲***
Importers' share (fn1):						
South Korea	***	***	***	▲***	▲***	▲***
Taiwan	***	***	***	▲***	▲***	▲***
Subject sources	***	***	***	▲***	▲***	▲***
Nonsubject sources	***	***	***	▼***	▼***	▼***
All import sources	***	***	***	▲***	▲***	▼***
U.S. importers' U.S. shipments of imports from:						
South Korea:						
Quantity	***	***	***	▲***	▼***	▲***
Value	***	***	***	▼***	▼***	▲***
Unit value	***	***	***	▼***	▼***	▼***
Ending inventory quantity	***	***	***	▼***	▼***	▲***
Taiwan:						
Quantity	***	***	***	▲***	▲***	▲***
Value	***	***	***	▼***	▼***	▲***
Unit value	***	***	***	▼***	▼***	▼***
Ending inventory quantity	***	***	***	▲***	▼***	▲***
Subject sources:						
Quantity	***	***	***	▲***	▲***	▲***
Value	***	***	***	▼***	▼***	▲***
Unit value	***	***	***	▼***	▼***	▼***
Ending inventory quantity	***	***	***	▼***	▼***	▲***
Nonsubject sources:						
Quantity	***	***	***	▼***	▼***	▼***
Value	***	***	***	▼***	▼***	▼***
Unit value	***	***	***	▼***	▼***	▼***
Ending inventory quantity	***	***	***	▼***	▼***	▼***
All import sources:						
Quantity	***	***	***	▲***	▼***	▲***
Value	***	***	***	▼***	▼***	▼***
Unit value	***	***	***	▼***	▼***	▼***
Ending inventory quantity	***	***	***	▼***	▼***	▲***

Table continued.

Table C.1 Continued
MAMMOs: Summary data concerning the U.S. total market, by item and period
Quantity=1,000 pounds contained MAMMOs; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per pound contained MAMMOs; Productivity=pounds contained MAMMOs per hour; Period changes=percent--exceptions noted

Item	Reported data			Period change comparisons		
	Calendar year			Calendar year		
	2022	2023	2024	2022–24	2022–23	2023–24
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	***	***	***	▲***	▲***	▲***
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. 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.

Merchant market

Table C.2
MAMMOs: Summary data concerning the U.S. merchant market, by item and period
Quantity=1,000 pounds contained MAMMOs; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per pound contained MAMMOs; Period changes=percent--exceptions noted

Item	Reported data			Period change comparisons		
	Calendar year			Calendar year		
	2022	2023	2024	2022–24	2022–23	2023–24
U.S. merchant market consumption quantity:						
Amount	***	***	***	▼***	▼***	▲***
Producers' share (fn1)	***	***	***	▼***	▼***	▲***
Importers' share (fn1):						
South Korea	***	***	***	▲***	▲***	▲***
Taiwan	***	***	***	▲***	▲***	▼***
Subject sources	***	***	***	▲***	▲***	▲***
Nonsubject sources	***	***	***	▼***	▲***	▼***
All import sources	***	***	***	▲***	▲***	▼***
U.S. merchant market consumption value:						
Amount	***	***	***	▼***	▼***	▼***
Producers' share (fn1)	***	***	***	▼***	▼***	▲***
Importers' share (fn1):						
South Korea	***	***	***	▲***	▲***	▲***
Taiwan	***	***	***	▲***	▲***	▲***
Subject sources	***	***	***	▲***	▲***	▲***
Nonsubject sources	***	***	***	▼***	▼***	▼***
All import sources	***	***	***	▲***	▲***	▼***
U.S. importers' U.S. shipments of imports from:						
South Korea:						
Quantity	***	***	***	▲***	▼***	▲***
Value	***	***	***	▼***	▼***	▲***
Unit value	***	***	***	▼***	▼***	▼***
Ending inventory quantity	***	***	***	▼***	▼***	▲***
Taiwan:						
Quantity	***	***	***	▲***	▲***	▲***
Value	***	***	***	▼***	▼***	▲***
Unit value	***	***	***	▼***	▼***	▼***
Ending inventory quantity	***	***	***	▲***	▼***	▲***
Subject sources:						
Quantity	***	***	***	▲***	▲***	▲***
Value	***	***	***	▼***	▼***	▲***
Unit value	***	***	***	▼***	▼***	▼***
Ending inventory quantity	***	***	***	▼***	▼***	▲***
Nonsubject sources:						
Quantity	***	***	***	▼***	▼***	▼***
Value	***	***	***	▼***	▼***	▼***
Unit value	***	***	***	▼***	▼***	▼***
Ending inventory quantity	***	***	***	▼***	▼***	▼***
All import sources:						
Quantity	***	***	***	▲***	▼***	▲***
Value	***	***	***	▼***	▼***	▼***
Unit value	***	***	***	▼***	▼***	▼***
Ending inventory quantity	***	***	***	▼***	▼***	▲***

Table continued.

Table C.2 Continued
MAMMOs: Summary data concerning the U.S. merchant market, by item and period
Quantity=1,000 pounds contained MAMMOs; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per pound contained MAMMOs; Period changes=percent--exceptions noted

Item	Reported data			Period change comparisons		
	Calendar year			Calendar year		
	2022	2023	2024	2022–24	2022–23	2023–24
U.S. producers':						
Commercial U.S. shipments:						
Quantity	***	***	***	▼***	▼***	▲***
Value	***	***	***	▼***	▼***	▼***
Unit value	***	***	***	▼***	▼***	▼***
Commercial sales:						
Quantity	***	***	***	▼***	▼***	▲***
Value	***	***	***	▼***	▼***	▼***
Unit value	***	***	***	▼***	▼***	▼***
Cost of goods sold (COGS)	***	***	***	▼***	▼***	▲***
Gross profit or (loss) (fn2)	***	***	***	▼***	▼***	▼***
SG&A expenses	***	***	***	▼***	▼***	▲***
Operating income or (loss) (fn2)	***	***	***	▼***	▼***	▼***
Net income or (loss) (fn2)	***	***	***	▼***	▼***	▼***
Unit COGS	***	***	***	▼***	▼***	▼***
Unit SG&A expenses	***	***	***	▲***	▲***	▼***
Unit operating income or (loss) (fn2)	***	***	***	▼***	▼***	▼***
Unit net income or (loss) (fn2)	***	***	***	▼***	▼***	▼***
COGS/sales (fn1)	***	***	***	▲***	▲***	▲***
Operating income or (loss)/sales (fn1)	***	***	***	▼***	▼***	▼***
Net income or (loss)/sales (fn1)	***	***	***	▼***	▼***	▼***

Source: Compiled from data submitted in response to Commission questionnaires. 508-compliant tables for these data are contained in appendix D 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.

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APPENDIX D

MERCHANT MARKET DATA

Tables D.1 and D.2 as well as figures D.1 and D.2 present data for apparent U.S. merchant market consumption for MAMMOs over the data collection period. Tables D.3 and D.4 present financial data for U.S. producers' merchant market operations.[1]

Table D.1 MAMMOs: Apparent U.S. merchant market consumption and market shares based on quantity data, by source and period

Quantity in 1,000 pounds contained MAMMOs; shares in percent

Source	Measure	2022	2023	2024
U.S. producers	Quantity	***	***	***
South Korea	Quantity	***	***	***
Taiwan	Quantity	***	***	***
Subject sources	Quantity	***	***	***
Nonsubject sources	Quantity	***	***	***
All import sources	Quantity	***	***	***
All sources	Quantity	***	***	***
U.S. producers	Share	***	***	***
South Korea	Share	***	***	***
Taiwan	Share	***	***	***
Subject sources	Share	***	***	***
Nonsubject sources	Share	***	***	***
All import sources	Share	***	***	***
All sources	Share	100.0	100.0	100.0

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

[1] Nonsubject import data do not include *** due to reporting issues discussed in Part 4.

Figure D.1 MAMMOs: Apparent U.S. merchant market consumption based on quantity data, by source and period

* * * * * * *

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

Table D.2 MAMMOs: Apparent U.S. merchant market consumption and market shares based on value data, by source and period

Value in 1,000 dollars; shares in percent

Source	Measure	2022	2023	2024
U.S. producers	Value	***	***	***
South Korea	Value	***	***	***
Taiwan	Value	***	***	***
Subject sources	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

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

Figure D.2 MAMMOs: Apparent U.S. merchant market consumption based on value data, by source and period

* * * * * * *

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

Table D.3 MAMMOs: U.S. producers' results of merchant market operations, by item and period

Quantity in 1,000 pounds contained MAMMOs; value in 1,000 dollars; ratios in percent

Item	Measure	2022	2023	2024
Commercial sales	Quantity	***	***	***
Commercial sales	Value	***	***	***
COGS: Raw materials	Value	***	***	***
COGS: Direct labor	Value	***	***	***
COGS: Other factory	Value	***	***	***
COGS: Total	Value	***	***	***
Gross profit or (loss)	Value	***	***	***
SG&A expenses	Value	***	***	***
Operating income or (loss)	Value	***	***	***
Other expense / (income), net	Value	***	***	***
Net income or (loss)	Value	***	***	***
Depreciation/amortization	Value	***	***	***
Cash flow	Value	***	***	***
COGS: Raw materials	Ratio to NS	***	***	***
COGS: Direct labor	Ratio to NS	***	***	***
COGS: Other factory	Ratio to NS	***	***	***
COGS: Total	Ratio to NS	***	***	***
Gross profit	Ratio to NS	***	***	***
SG&A expense	Ratio to NS	***	***	***
Operating income or (loss)	Ratio to NS	***	***	***
Net income or (loss)	Ratio to NS	***	***	***

Table continued.

Table D.3 (Continued) MAMMOs: U.S. producers' results of merchant market operations, by item and period

Shares in percent; unit values in dollars per pound contained MAMMOs; count in number of firms reporting

Item	Measure	2022	2023	2024
COGS: Raw materials	Share	***	***	***
COGS: Direct labor	Share	***	***	***
COGS: Other factory	Share	***	***	***
COGS: Total	Share	100.0	100.0	100.0
Commercial sales	Unit value	***	***	***
COGS: Raw materials	Unit value	***	***	***
COGS: Direct labor	Unit value	***	***	***
COGS: Other factory	Unit value	***	***	***
COGS: Total	Unit value	***	***	***
Gross profit or (loss)	Unit value	***	***	***
SG&A expenses	Unit value	***	***	***
Operating income or (loss)	Unit value	***	***	***
Net income or (loss)	Unit value	***	***	***
Operating losses	Count	***	***	***
Net losses	Count	***	***	***
Data	Count	2	2	2

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

Note: ***. Email from ***, April 22, 2025.

Table D.4 MAMMOs: Changes in AUVs between comparison periods for the merchant market

Changes in percent

Item	2022–24	2022–23	2023–24
Commercial sales	▼***	▼***	▼***
COGS: Raw materials	▼***	▼***	▼***
COGS: Direct labor	▲***	▲***	▲***
COGS: Other factory	▼***	▼***	▲***
COGS: Total	▼***	▼***	▼***

Table continued.

Table D.4 (Continued) MAMMOs: Changes in AUVs between comparison periods for the merchant market

Changes in dollars per pound contained MAMMOs

Item	2022–24	2022–23	2023–24
Commercial sales	▼***	▼***	▼***
COGS: Raw materials	▼***	▼***	▼***
COGS: Direct labor	▲***	▲***	▲***
COGS: Other factory	▼***	▼***	▲***
COGS: Total	▼***	▼***	▼***
Gross profit or (loss)	▼***	▼***	▼***
SG&A expense	▲***	▲***	▼***
Operating income or (loss)	▼***	▼***	▼***
Net income or (loss)	▼***	▼***	▼***

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

Note: Percentages and unit values shown as “0.00” represent values greater than zero, but less than “0.005,”. Period changes preceded by a “▲” represent an increase, while period changes preceded by a “▼” represent a decrease.