

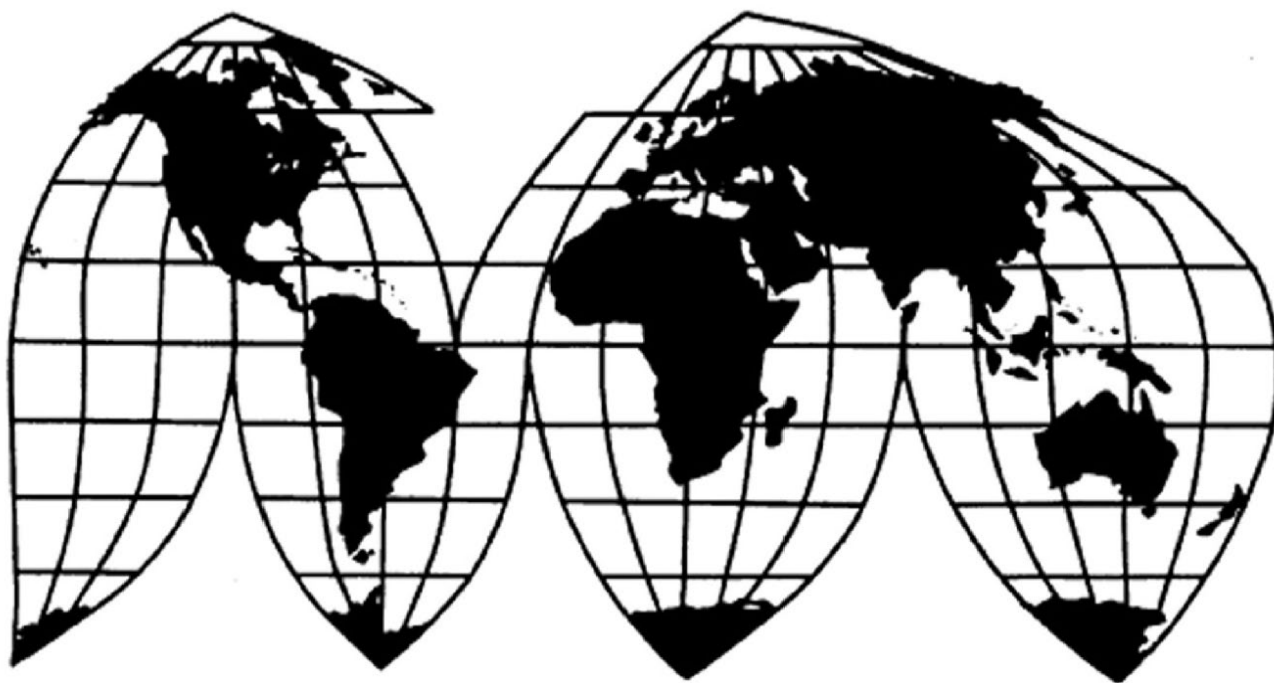
2,4-Dichlorophenoxyacetic Acid ("2,4-D") from China and India

Investigation Nos. 701-TA-710-711 and 731-TA-1673-1674
(Preliminary)

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U.S. International Trade Commission



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Note.—Information that would reveal confidential operations of individual concerns may not be published.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

UNITED STATES INTERNATIONAL TRADE COMMISSION

Investigation Nos. 701-TA-710-711 and 731-TA-1673-1674 (Preliminary)

2,4-Dichlorophenoxyacetic Acid ("2,4-D") from China and India

DETERMINATIONS

On the basis of the record¹ 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 2,4-Dichlorophenoxyacetic acid ("2,4-D") from China and India, provided for in subheading 2918.99.20 of the Harmonized Tariff Schedule of the United States, that are alleged to be sold in the United States at less than fair value ("LTFV") and imports of the subject merchandise from China and India that are alleged to be subsidized by the governments of China and India.²

COMMENCEMENT OF FINAL PHASE INVESTIGATIONS

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

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

² 89 FR 34200 and 34205 (April 30, 2024).

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 14, 2024, Corteva Agriscience LLC (Indianapolis, Indiana) 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 2,4-D from China and India and LTFV imports of 2,4-D from China and India. Accordingly, effective March 14, 2024, the Commission instituted countervailing duty investigation Nos. 701-TA-710-711 and antidumping duty investigation Nos. 731-TA-1673-1674 (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* on March 20, 2024 (89 FR 19876). The Commission conducted its conference on April 4, 2024. All persons who requested the opportunity were permitted to participate.

Views of the Commission

Based on the record in the preliminary phase of these investigations, we determine that there is a reasonable indication that an industry in the United States is materially injured by reason of imports of 2,4-Dichlorophenoxyacetic Acid (“2,4-D”) from China and India that are allegedly sold in the United States at less than fair value and subsidized by the governments of China and India.

I. The Legal Standard for Preliminary Determinations

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

II. Background

Although the antidumping and countervailing duty petitions regarding 2,4-D from China and India were filed on March 14, 2024, the Commission’s investigation schedules were extended because the U.S. Department of Commerce (“Commerce”) extended its deadline for determining the adequacy of the antidumping and countervailing duty petitions for both subject countries.³ Specifically, under the statute, the Commission shall make its preliminary determinations within 25 days after the date on which the Commission receives notice from

¹ 19 U.S.C. §§ 1671b(a), 1673b(a) (2000); *see also American Lamb Co. v. United States*, 785 F.2d 994, 1001-04 (Fed. Cir. 1986); *Aristech Chem. Corp. v. United States*, 20 CIT 353, 354-55 (1996). No party argues that the establishment of an industry in the United States is materially retarded by the allegedly unfairly traded imports.

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

³ *Notice of Extension of the Deadline for Determining the Adequacy of the Antidumping and Countervailing Duty Petitions: 2,4-Dichlorophenoxyacetic Acid from the People’s Republic of China and India*, 89 Fed. Reg. 24,431 (April 8, 2024).

Commerce of initiation of the investigations.⁴ Commerce's initiation notices for the antidumping and countervailing duty investigations of 2,4-D from China and India were published on April 30, 2024.⁵

Parties to the Investigation. Corteva Agriscience LLC ("Corteva" and "Petitioner"), a U.S. producer of 2,4-D, filed the petitions in these investigations on March 14, 2024.⁶ Petitioner appeared at the staff conference and submitted a post-conference brief.⁷

Several respondent entities participated in these investigations. Nufarm Americas Inc. ("Nufarm"), Drexel Chemical Company ("Drexel"), and PBI-Gordon Co. ("PBI-Gordon"), U.S. importers of subject merchandise and U.S. producers of in-scope 2,4-D esters and salts, appeared at the staff conference and submitted post-conference briefs.⁸ Atul Ltd. ("Atul India"), an Indian producer and exporter of subject merchandise, and Atul USA Inc. ("Atul USA"), a U.S. importer of subject merchandise from India, appeared at the staff conference and submitted a joint post-conference brief.⁹ The National Corn Growers Association ("NCGA"), which represents corn growers in the United States that purchase out-of-scope herbicide formulations that incorporate 2,4-D, appeared at the staff conference and submitted a post-conference brief.¹⁰

⁴ 19 U.S.C. §§ 1671b(a)(2)(A)(ii), 1673b(a)(2)(A)(ii).

⁵ *2,4-Dichlorophenoxyacetic Acid from the People's Republic of China and India: Initiation of Less-Than-Fair-Value Investigations*, 89 Fed. Reg. 34,200 (Apr. 30, 2024); *2,4-Dichlorophenoxyacetic Acid from the People's Republic of China and India: Initiation of Countervailing Duty Investigations*, 89 Fed. Reg. 34,205 (Apr. 30, 2024).

⁶ Petition, EDIS Doc. 816165-2138134 (Mar. 14, 2024).

⁷ Corteva Agriscience LLC's Postconfr. Br., EDIS Doc. 819030 (Apr. 18, 2024) ("Petitioner's Postconfr. Br.").

⁸ Nufarm America Inc.'s Postconfr. Br., EDIS Doc. 819010 (Apr. 18, 2024) ("Nufarm's Postconfr. Br."); Drexel Chemical Company's Postconfr. Br., EDIS Doc. 819015 (Apr. 18, 2024) ("Drexel's Postconfr. Br."); PBI-Gordon Corporation's Postconfr. Br., EDIS Doc. 819027 (Apr. 18, 2024) ("PBI-Gordon's Postconfr. Br."). Nufarm and Drexel produce both 2,4-D ester and salt, while PBI-Gordon only produces 2,4-D salt. Confidential Report, INV-WW-041 (May 9, 2024), as revised by INV-WW-046, EDIS Doc. 821545 (May 15, 2024) and INV-WW-048, EDIS Doc. 821684 (May 16, 2024) ("CR"); Public Report, *2,4-Dichlorophenoxyacetic Acid from China and India*, Inv. Nos. 701-TA-710-711 and 731-TA-1673-1674 (Preliminary), USITC Pub. 5511 (May 2024) ("PR") at Table D-4.

⁹ Atul Ltd. and Atul USA Inc.'s Postconfr. Br., EDIS Doc. 818906 (Apr. 18, 2024) ("Atul's Postconfr. Br.").

¹⁰ National Corn Growers Association's Postconfr. Br., EDIS Doc. 818994 (Apr. 18, 2024) (NCGA's Postconfr. Br.). NCGA also filed a letter to the record of this proceeding with the American Soybean Association, National Association of Wheat Growers, National Barley Growers Association, National Sorghum Producers, and U.S. Durum Growers Association that was addressed to Chairman David S. Johanson. Grower Letter in Opposition, EDIS Doc. 819822 (Apr. 18, 2024).

Data Coverage. U.S. industry data are based on the questionnaire responses of one firm, Corteva, that accounted for all known U.S. production of 2,4-D acid in 2023.¹¹ Additionally, four firms that convert 2,4-D acid into 2,4-D esters and/or salts also submitted U.S. producer questionnaire responses.^{12 13} U.S. import data are based on official Commerce import statistics, and U.S. importers' U.S. shipments and related information are based on questionnaire responses from eight U.S. importers accounting for *** percent of total subject imports in 2023, including *** percent of subject imports from China and *** percent of subject imports from India that year.¹⁴ The Commission received responses to its questionnaires from seven foreign producers and/or exporters of subject merchandise; one producer/exporter in China, accounting for approximately *** percent of production of subject merchandise in China in 2023, and two exporters/resellers in China; and three producers/exporters in India, accounting for approximately *** percent of production of subject merchandise in India in 2023, and one exporter/reseller in India.¹⁵

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."¹⁶ 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."¹⁷ In turn, the Tariff Act defines

¹¹ CR/PR at I-5.

¹² CR/PR at I-5. The data from the domestic producer questionnaire responses submitted by these firms are included in tables C-4-6 in appendix C and appendices D, E, and F of the Commission's staff report. *Id.*

¹³ The scope includes 2, 4-D acid, esters, and salts, as further discussed in section III.A.1. below.

¹⁴ CR/PR at IV-1. Coverage estimates were calculated as compared to official import statistics reported under primary HTS statistical reporting number 2918.99.2010. Merchandise covered by the scope may also be imported under HTS statistical reporting numbers 3808.93.0500 and 3808.93.1500 covering formulated herbicide products.

¹⁵ CR/PR at VII-3. Firms were asked to estimate their share of production within their respective countries. Since firms do not have perfect knowledge of the industry in their home market, firms may use different denominators in estimating their own share of the total market, leading to estimates that can add up to over 100 percent.

¹⁶ 19 U.S.C. § 1677(4)(A).

¹⁷ 19 U.S.C. § 1677(4)(A).

“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.”¹⁸

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.¹⁹ 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.”²⁰ The Commission then defines the domestic like product in light of the imported articles Commerce has identified.²¹ 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.²² No single factor is dispositive, and the Commission may consider other factors it deems relevant based on the facts of a particular investigation.²³ The Commission looks for clear dividing lines among possible like products and disregards minor

¹⁸ 19 U.S.C. § 1677(10).

¹⁹ 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).

²⁰ *Cleo Inc. v. United States*, 501 F.3d 1291, 1298 (Fed. Cir. 2007); *see also Hitachi Metals, Ltd. v. United States*, Case No. 19-1289, slip op. at 8-9 (Fed. Cir. Feb. 7, 2020) (the statute requires the Commission to start with Commerce’s subject merchandise in reaching its own like product determination).

²¹ *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).

²² *See, e.g., Cleo Inc. v. United States*, 501 F.3d 1291, 1299 (Fed. Cir. 2007); *NEC Corp. v. Dep’t 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).

²³ *See, e.g., S. Rep. No. 96-249 at 90-91 (1979).*

variations.²⁴ The Commission may, where appropriate, include domestic articles in the domestic like product in addition to those described in the scope.²⁵

A. Scope Definition

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

2,4-dichlorophenoxyacetic acid (2,4-D) and its derivative products, including salt and ester forms of 2,4-D. 2,4-D has the Chemical Abstracts Service (CAS) registry number of 94-75-7 and the chemical formula $C_8H_6Cl_2O_3$.

Salt and ester forms of 2,4-D include 2,4-D sodium salt (CAS 2702-72-9), 2,4-D diethanolamine salt (CAS 5742-19-8), 2,4-D dimethyl amine salt (CAS 2008-39-1), 2,4-Disopropylamine salt (CAS 5742-17-6), 2,4-D tri-isopropanolamine salt (CAS 3234180-3), 2,4-D choline salt (CAS 1048373-72-3), 2,4-D butoxyethyl ester (CAS 1929-733), 2,4-D 2-ethylhexylester (CAS 1928-43-4), and 2,4-D isopropylester (CAS 94-11-1). All 2,4-D, as well as the salt and ester forms of 2,4-D, is covered by the scope irrespective of purity, particle size, or physical form.

The conversion of a 2,4-D salt or ester from 2,4-D acid, or the formulation of nonsubject merchandise with the subject 2,4-D, its salts, and its esters in the country of manufacture or in a third country does not remove the subject 2,4-D, its salts, or its esters from the scope. For any such formulations, only the 2,4-D, 2,4-D salt, and 2,4-D ester components of the mixture is covered by the scope of the investigations. Formulations of 2,4-D are products that are registered for

²⁴ 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.”).

²⁵ 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).

end-use applications with the U.S. Environmental Protection Agency (“EPA”) and contain a dispersion agent.

The country of origin of any 2,4-D derivative salt or ester is determined by the country in which the underlying 2,4-D acid is produced. 2,4-D, its salts, and its esters are classified under Harmonized Tariff Schedule of the United States (HTSUS) subheading 2918.99.2010. Subject merchandise, including the abovementioned formulations, may also be classified under HTSUS subheadings 2922.12.0001, 2921.11.0000, 2921.19.6195, 2922.19.9690, 3808.93.0050, and 3808.93.1400. The HTSUS subheadings and CAS registry numbers are provided for convenience and customs purposes. The written description of the scope of the investigations is dispositive.^{26 27}

2,4-D is an active ingredient in herbicides that are toxic to broadleaf weeds, but not grasses.²⁸ In terms of the mechanism of action of the herbicide, 2,4-D is a synthetic auxin and growth regulator.²⁹ A synthetic auxin is a type of herbicide active ingredient that mimics auxin, a plant hormone that regulates many aspects of growth.³⁰ Synthetic auxin herbicides bind to hormone receptors in plant cells and cause a chain of events within the plant that leads to rapid and uncontrolled growth.³¹ These herbicides specifically cause vascular tissue cells that carry water and nutrients to divide and grow at such a rate as to cause stem curl-over, leaf withering, and eventual plant death.³² These herbicides are registered for use on pastures and rangelands, residential lawns, roadways, aquatic sites, croplands, and forestry applications, and

²⁶ *2,4-Dichlorophenoxyacetic Acid from the People's Republic of China and India: Initiation of Less-Than-Fair-Value Investigations*, 89 Fed. Reg. 34,200 (Apr. 30, 2024); *2,4-Dichlorophenoxyacetic Acid from the People's Republic of China and India: Initiation of Countervailing Duty Investigations*, 89 Fed. Reg. 34,205 (Apr. 30, 2024).

²⁷ The scope was changed after the filing of the petitions to clarify that 2,4-D ester and 2,4-D salt are individually incorporated within the scope. *Compare* Petition at 8-9 with *2,4-Dichlorophenoxyacetic Acid from the People's Republic of China and India: Initiation of Less-Than-Fair-Value Investigations*, 89 Fed. Reg. 34,200 (Apr. 30, 2024); *2,4-Dichlorophenoxyacetic Acid from the People's Republic of China and India: Initiation of Countervailing Duty Investigations*, 89 Fed. Reg. 34,205 (Apr. 30, 2024). *See also* Conference Tr., EDIS Doc. 819795 (Apr. 26, 2024) at 40 (Cannistra).

²⁸ CR/PR at I-9.

²⁹ CR/PR at I-9.

³⁰ CR/PR at I-9.

³¹ CR/PR at I-9.

³² CR/PR at I-9.

used in many places, including turf, lawns, rights-of-way, aquatic sites, forestry sites, and a variety of field, fruit, and vegetable crops.³³

2,4-D must be formulated to readily disperse upon application and to suitably mix with water.³⁴ First, 2,4-D acid is produced in one of two ways: (1) chloroxidizing phenol with chlorine and then condensation with chloroacetic acid or (2) condensation followed by the chlorination process.³⁵ The next step is converting the 2,4-D acid into a derivative form.³⁶ There are currently nine derivative forms of 2,4-D on the U.S. market, with two derivative forms, 2-ethyexyl ester (a 2,4-D ester) and dimethyl-amine salt (a 2,4-D salt), accounting for approximately 90-95 percent of global 2,4-D use.³⁷ The 2,4-D derivatives are then blended with other active ingredients, chemicals, and/or water to create end-use crop protection products/formulations (herbicides).³⁸ Over 1,500 herbicide products contain 2,4-D as an active ingredient and come in the form of liquids (concentrated or ready-to-use), dusts, or granules.³⁹ Only the 2,4-D components of the herbicide products are covered by the scope.

Regarding the 2,4-D ester and salt derivative forms, 2,4-D esters generally have higher vapor pressures than 2,4-D salts, which results in increased volatilization (*i.e.*, the transition from a liquid state to a vapor state) for 2,4-D esters.⁴⁰ Accordingly, 2,4-D esters are typically more active on weeds, as plants are more likely to absorb them, and 2,4-D salts are typically used in landscape settings and scenarios when drift is a primary concern.⁴¹ Therefore, a purchaser's selection between 2,4-D esters and salts is based on the desired end-use application.⁴²

B. Arguments of the Parties

Petitioner argues that the Commission should define a single domestic like product consisting of 2,4-D, coextensive with the scope of these investigations.⁴³

³³ CR/PR at I-9.

³⁴ CR/PR at I-9.

³⁵ CR/PR at I-10.

³⁶ CR/PR at I-9.

³⁷ CR/PR at I-10.

³⁸ CR/PR at I-9.

³⁹ CR/PR at I-9.

⁴⁰ CR/PR at I-10.

⁴¹ CR/PR at I-10.

⁴² CR/PR at I-10.

⁴³ Petitioner's Postconfr. Br. at 35; Petition at 12.

Respondents Drexel, Nufarm, and PBI-Gordon do not contest the domestic like product definition proposed by Petitioner in these preliminary investigations.⁴⁴ Atul characterizes 2,4-D esters and salts as formulations to argue that the Commission should define 2,4-D esters and salts as a separate domestic like product from 2,4-D acid.⁴⁵ Using the Commission's semi-finished like product analysis, Atul argues that 2,4-D acid has different end uses, markets, functions, and values as compared to 2,4-D esters and salts, and that the transformation of 2,4-D acid into such formulations is a complex process that requires substantial investment.⁴⁶

C. Analysis

We consider whether the upstream product – 2,4-D acid – and the downstream intermediate products – 2,4-D esters and salts – constitute a single domestic like product. As discussed above, the scope of these investigations includes both 2,4-D acid and 2,4-D esters and salts. Because this question concerns whether articles at different stages of processing should be included in the same domestic like product, we analyze the issue using a semi-finished product analysis.⁴⁷ Based on the following analysis, we define a single domestic like product consisting of 2,4-D, coextensive with the scope of these investigations.

Dedication for Use. According to Atul, 2,4-D acid is used for the synthesis of a variety of formulations and 2,4-D esters and salts are end-use products for field application.⁴⁸ Converters (firms that convert 2,4-D acid into 2,4-D ester and/or salt but do not produce 2,4-D acid) and Petitioner submit that 2,4-D acid cannot be used in herbicide products, its primary end use,

⁴⁴ Nufarm's Postconfr. Br. at 4; Drexel's Postconfr. Br. at 6-7; PBI-Gordon's Postconfr. Br. at 4; Conference Tr. at 147 (Emerson).

⁴⁵ Atul's Postconfr. Br. at 1. Specifically, Atul claims that 2,4-D salts are formulations because they are prepared using an active ingredient, *i.e.*, 2,4-D acid, and are ready for use by the end user. *Id.*

⁴⁶ Atul's Postconfr. Br. at 1-2.

⁴⁷ In a semifinished products analysis, the Commission examines the following: (1) the significance and extent of the processes used to transform the upstream into the downstream articles; (2) whether the upstream article is dedicated to the production of the downstream article or has independent uses; (3) differences in the physical characteristics and functions of the upstream and downstream articles; (4) whether there are perceived to be separate markets for the upstream and downstream articles; and (5) differences in the costs or value of the vertically differentiated articles. *See, e.g., Fluid End Blocks from China, Germany, India, and Italy*, Inv. Nos. 701-TA-632–635 and 731-TA-1466–1468 (Preliminary), USITC Pub. 5017 (Feb. 2020) at 10–12; *Steel Trailer Wheels from China*, Inv. Nos. 701-TA-609 and 731-TA-1421 (Preliminary), USITC Pub. 4830 (Oct. 2018) at 8–10; *Glycine from India, Japan, and Korea*, Inv. Nos. 731-TA-1111–1113 (Preliminary), USITC Pub. 3921 (May 2007) at 7; *Artists' Canvas from China*, Inv. No. 731-TA-1091 (Final), USITC Pub. 3853 (May 2006) at 6; *Live Swine from Canada*, Inv. No. 731-TA-1076 (Final), USITC Pub. 3766 (Apr. 2005) at 8 n.40; *Certain Frozen Fish Fillets from Vietnam*, Inv. No. 731-TA-1012 (Preliminary), USITC Pub. 3533 (Aug. 2002) at 7.

⁴⁸ Atul's Postconfr. Br. at 1.

without first being converted into a derivative form, like 2,4-D ester or salt.⁴⁹ Drexel adds that 2,4-D acid has little utility absent conversion into 2,4-D esters and salts.⁵⁰ Atul makes a similar claim in stating that 2,4-D acid itself cannot be used in herbicide products, but must first be converted into a derivative form, primarily 2,4-D ester or salt, which are then formulated into herbicides.⁵¹

Separate Markets. According to Atul, 2,4-D acid and 2,4-D ester and salt have separate markets, with 2,4-D acid sold to formulators (firms that produce a 2,4-D based herbicide using 2,4-D ester or salt) and 2,4-D ester and salt sold to end users.⁵² Petitioner submits that 2,4-D acid, ester, and salt are either internally consumed to produce end-use products (herbicides) or sold to third-party formulators as a component to produce end-use products.⁵³ While the Commission did not collect data on the channels of distributions in the U.S. market for 2,4-D acids, salts, and esters separately, the record shows that Petitioner's U.S. shipments during the 2021-23 period of investigation ("POI"), consisting of ***, were made ***.⁵⁴ Petitioner submits that all customers and producers perceive 2,4-D in all forms as a common class of product.⁵⁵

Differences in Physical Characteristics and Functions of the Upstream and Downstream Articles. Atul contends that 2,4-D acid is an active ingredient, while formulations containing 2,4-D esters and salts function as herbicides.⁵⁶ According to Petitioner, 2,4-D acid, esters, and salts have the same end-use applications and are all members of the phenoxy family of herbicides.⁵⁷ Although the chemical compositions of 2,4-D acid, ester, and salt are not identical,⁵⁸ Petitioner states that all 2,4-D has the same physical characteristic, a synthetic auxin that causes uncontrolled growth in vascular tissue cells that ultimately leads to the death of unwanted foliage, regardless of form.⁵⁹ The record indicates that 2,4-D esters and salts, like 2,4-D acid, are active ingredients and are not themselves formulations that can be used as

⁴⁹ Petition at 1; Petitioner's Postconfr. Br. at 35; Conference. Tr. at 61-62 (Garcia de Alba), 121 (Wolf); Nufarm's Postconfr. Br. at 10; Drexel Postconfr. Br. at 5.

⁵⁰ Drexel's Postconfr. Br. at 10.

⁵¹ Atul's Postconfr. Br. at 2.

⁵² Atul's Postconfr. Br. at 1-2.

⁵³ Petition at 13; Petitioner's Postconfr. Br. at 36.

⁵⁴ CR/PR at II-2, Table IV-4.

⁵⁵ Petitioner's Postconfr. Br. at 37.

⁵⁶ Atul's Postconfr. Br. at 2.

⁵⁷ Petitioner's Postconfr. Br. at 35.

⁵⁸ Conference Tr. at 42 (Garcia de Alba).

⁵⁹ Petitioner's Postconfr. Br. at 36.

herbicides, as they require additional processing, *i.e.*, blending or mixing with other ingredients, before being used as a herbicide product.⁶⁰

Differences in Value. According to Atul and converters, the processing of 2,4-D acid into 2,4-D esters and salts adds significant value, ranging from *** percent to *** percent.⁶¹ PBI-Gordon adds that the value added at each step in the herbicide formulation process does not directly correspond to where the most sophisticated or extensive production-related activities take place, highlighting that its greatest value-added activity is formulation, although the formulation process is chemically the simplest.⁶² According to Petitioner, the value added reported by converters is misleading because they were calculated by comparing the purchase cost of 2,4-D acid against their selling price of 2,4-D ester and/or salt, which ignores that the subject imported 2,4-D they purchased was unfairly traded, inflating the margin between the cost of 2,4-D acid and the sale price of their 2,4-D ester and salt.⁶³ As calculated by the aggregate annual total conversion costs (direct labor and other factory costs) divided by total cost of goods sold (“COGS”) derived from converters’ questionnaire responses, the value added by converting 2,4-D acid into 2,4-D esters or salts ranged from *** percent to *** percent.⁶⁴ During the POI, U.S. producer sales prices of pricing product 1, 2,4-D acid, ranged from \$*** to \$*** per pound acid equivalent,⁶⁵ excluding the exceptional \$***, while U.S. producer sales prices of pricing product 4, 2,4-D ester, ranged from \$*** to \$*** per pound acid equivalent.⁶⁶ ⁶⁷ However, prices for both products fluctuated over the POI; sales prices for 2,4-D ester were higher than prices for 2,4-D acid in *** quarters, ranging from *** percent less to *** percent higher, with an average of *** percent higher.⁶⁸

Extent of Processes Used to Transform Downstream Product into Upstream Product. According to Atul, the transformation of 2,4-D acid into 2,4-D ester or salt is a complex process

⁶⁰ CR/PR at I-9. Petitioner, Drexel, and PBI-Gordon all submit that 2,4-D generally is an active ingredient for herbicide products. Petition at 12; Conference Tr. at 121 (Wolf); Drexel’s Postconfr. Br. at 5.

⁶¹ Atul’s Postconfr. Br. at 2; Nufarm’s Postconfr. Br. at 8; Drexel’s Postconfr. Br. at 11; PBI-Gordon’s Postconfr. Br. at 8.

⁶² PBI-Gordon’s Postconfr. Br. at 8, Conference Tr. at 122 (Wolf).

⁶³ Petitioner’s Postconfr. Br. at 32.

⁶⁴ CR/PR at Table D-6.

⁶⁵ CR/PR at Table V-5.

⁶⁶ CR/PR at Table V-6. Including sales from both Petitioner and converters, sales prices of 2,4-D ester ranged from \$*** to \$*** per pound acid equivalent. *Id.* at Table E-3.

⁶⁷ There are no pricing comparisons for pricing products 2 and 3, 2,4-D salts.

⁶⁸ *Derived from* CR/PR at Tables V-5-6. Including sales from Petitioner and converters, sales prices for 2,4-D ester were higher than prices for 2,4-D acid in *** quarters, ranging from *** to *** , with an average of *** percent higher. *Derived from* CR/PR at Tables V-5, E-3.

that requires substantial investment.⁶⁹ Similarly, converters submit that the conversion of 2,4-D acid into 2,4-D ester or salt requires a chemical reaction using significant equipment and machinery and highly skilled/technical workers.⁷⁰ Both Nufarm and Drexel add that U.S. Customs and Border Protection (“CBP” or “Customs”) has found that esterification results in a substantial transformation.⁷¹ Petitioner agrees that the conversion of 2,4-D acid into its derivative forms requires chemical reactions, but claims that these conversions are by an order of magnitude less complex than those used to produce 2,4-D acid.⁷²

Conclusion. Although the record evidence is mixed, the available information in these preliminary phase investigations supports finding that 2,4-D acid and downstream 2,4-D esters and salts constitute a single domestic like product. As an initial matter, we note that there is limited information on the record concerning the Commission’s semi-finished like product analysis because the questionnaires did not request information on this issue and no party had an opportunity to respond to Atul’s like product argument, which was raised for the first time in its post-conference brief.

Several factors appear on balance to support including 2,4-D acid, ester, and salt in the same domestic like product. Most parties agree that 2,4-D acid is primarily used for herbicide products, and that it must first be converted into a derivative form before it can be used in a formulated herbicide product. The record indicates that 2,4-D esters and salts account for at least 90-95 percent of the derivative products produced from 2,4-D acid.⁷³ Therefore, the vast majority of 2,4-D acid appears to be dedicated to the production of 2,4-D esters and salts. The record also indicates that all three forms of 2,4-D share essential physical characteristics, as synthetic auxins, and function, as active ingredients that cause uncontrolled growth in vascular tissue cells in unwanted foliage when formulated into downstream herbicides.

On the other hand, the record indicates that 2,4-D acid is transformed into 2,4-D esters and salts and that the process adds value and requires chemical reactions, but the parties disagree as to the significance and extent of the transformation and the value-added. The record shows that there is little overlap in the sales prices of domestic 2,4-D acid and esters. In addition, the record shows that converters and Petitioner convert 2,4-D acid into 2,4-D salts and esters using specialized machinery and workers, although these manufacturing facilities

⁶⁹ Atul’s Postconfr. Br. at 2.

⁷⁰ Nufarm’s Postconfr. Br. at 6-7; Drexel’s Postconfr. Br. at 10; PBI-Gordon’s Postconfr. Br. at 6.

⁷¹ Nufarm’s Postconfr. Br. at 5; Drexel’s Postconfr. Br. at Responses to Staff Questions at 4.

⁷² Conference Tr. at 36 (Garcia de Alba).

⁷³ CR/PR at I-10. Dimethyl-amine salt (a 2,4-D salt) and 2-ethylhexyl ester (a 2,4-D ester) account for approximately 90-95 percent of the derivative products produced from 2,4-D acid. *Id.*

also include other manufacturing/processing activities, like formulating and packaging herbicides.⁷⁴

In sum, the record shows that the vast majority, if not all, of domestically produced 2,4-D acid is dedicated to the production of 2,4-D esters and salts, and that all three forms of 2,4-D share the same or similar physical characteristics. Despite the evidence on the record regarding the extent of transformation and value-added in processing 2,4-D acid into 2,4-D salts and esters, on balance, we find that 2,4-D constitutes the same domestic like product as 2,4-D esters and salts. We intend to investigate this issue further in any final phase of the investigations.⁷⁵

For the foregoing reasons, for purposes of these preliminary phase investigations, we define a single domestic like product consisting of all 2,4-D, coextensive with the scope of the investigations.

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.”⁷⁶ In defining the domestic industry, the Commission’s general practice has been to include in the industry producers of all domestic production of the like product, whether toll-produced, captively consumed, or sold in the domestic merchant market.

These investigations raise two sets of domestic industry issues. The first concerns whether the activities of the firms converting 2,4-D acid into 2,4-D esters and/or salts in the United States engage in sufficient production-related activities to qualify as domestic producers. The second concerns whether appropriate circumstances exist to exclude any domestic producers from the domestic industry pursuant to the related parties provision.

A. Sufficient Production-Related Activities

In deciding whether a firm qualifies as a domestic producer of the domestic like product, the Commission generally analyzes the overall nature of a firm’s U.S. production-related

⁷⁴ CR/PR at Tables D-5-7; Conference Tr. at 45-46 (Garcia De Alba); Nufarm’s Postconfr. Br. at 6-7; Drexel’s Postconfr. Br. at 10; PBI-Gordon’s Postconfr. Br. at 6.

⁷⁵ Accordingly, we invite the parties to submit comments on the Commission’s draft questionnaires with respect to defining the domestic like product in any final phase investigations.

⁷⁶ 19 U.S.C. § 1677(4)(A).

activities, although production-related activity at minimum levels could be insufficient to constitute domestic production.⁷⁷

1. Arguments of the Parties

Petitioner's Arguments. Petitioner, employing the Commission's six factor analysis for determining sufficient production-related activity, argues that firms only engaged in the conversion of 2,4-D acid into 2,4-D esters and salts and not the production of 2,4-D acid, including Albaugh, Drexel, Nufarm, and PBI-Gordon, do not engage in sufficient production-related activities to qualify as domestic producers.⁷⁸

Respondents' Arguments. Drexel and PBI-Gordon argue that U.S. producers of 2,4-D esters and salts should be included in the definition of the domestic industry because they produce the domestic like product,⁷⁹ and Nufarm submits that CBP found that esterification results in a substantial transformation.⁸⁰ Additionally, Drexel, Nufarm, and PBI-Gordon employ the Commission's six factor analysis for determining sufficient production-related activity to argue that U.S. producers of 2,4-D esters and salts should be included in the definition of the domestic industry.⁸¹ PBI-Gordon adds that the Commission should not simply look at whether the production-related activities required to produce 2,4-D esters and salts are greater or less than those required to produce 2,4-D acid.⁸²

2. Analysis

Based on the record of these preliminary phase investigations, we find that converters that process 2,4-D acid into 2,4-D esters and salts, including Albaugh, Drexel, Nufarm, and PBI-Gordon, do not engage in sufficient production-related activities to qualify as domestic

⁷⁷ The Commission generally considers six factors: (1) source and extent of the firm's capital investment; (2) technical expertise involved in U.S. production activities; (3) value added to the product in the United States; (4) employment levels; (5) quantity and type of parts sourced in the United States; and (6) any other costs and activities in the United States directly leading to production of the like product. No single factor is determinative and the Commission may consider any other factors it deems relevant in light of the specific facts of any investigation. *Crystalline Silica Photovoltaic Cells and Modules from China*, Inv. Nos. 701-TA-481 and 731-TA-1190 (Final), USITC Pub. 4360 at 12-13 (Nov. 2012).

⁷⁸ Petitioner's Postconfr. Br. at 28.

⁷⁹ Drexel's Postconfr. Br. at 7-8; PBI-Gordon's Postconfr. Br. at 4.

⁸⁰ Nufarm's Postconfr. Br. at 5; Drexel's Postconfr. Br. at Responses to Staff Questions at 4.

⁸¹ Drexel's Postconfr. Br. at 9-11; Nufarm's Postconfr. Br. at 5-8; PBI-Gordon's Postconfr. Br. at 5-10.

⁸² PBI-Gordon's Postconfr. Br. at 5.

producers, as discussed below. However, we intend to investigate this issue further in any final phase of the investigations.

Source and Extent of Firms' Capital Investment. Albaugh, Drexel, Nufarm, and PBI-Gordon each reported capital investments in their 2,4-D production facilities during the POI. Albaugh reported \$*** in capital expenditures and between \$*** and \$*** in assets from 2021 to 2023, and estimated the greenfield investment costs for replicating its current facility to be \$***.⁸³ Drexel reported \$*** in annual capital expenditures and \$*** in assets during the 2021-23 period, and estimated the greenfield investment costs for replicating its current facility to be \$***.⁸⁴ Nufarm reported between \$*** and \$*** in capital expenditures and between \$*** and \$*** in assets from 2021 to 2023, and estimated the greenfield investment costs for replicating its current facility to be \$***.⁸⁵ Nufarm reports ***.⁸⁶ PBI-Gordon reported between \$*** and \$*** in capital expenditures and between \$*** and \$*** in assets from 2021 to 2023, and estimated the greenfield investment costs for replicating its current facility to be \$***.⁸⁷ In 2021, PBI-Gordon obtained approval to modernize its manufacturing facility, estimated at \$***, and is currently in the second phase of the three phase project that is expected to be completed in 2027.⁸⁸ Accordingly, responding converters collectively reported between \$*** and \$*** in capital expenditures and between \$*** and \$*** in assets from 2021 to 2023.⁸⁹ By comparison, Corteva reported between \$*** and \$*** in capital expenditures and between \$*** and \$*** in assets from 2021 to 2023, and estimated the greenfield investment costs for replicating its current facility to be \$***.⁹⁰

Technical Expertise. Albaugh reported expenditures between \$*** and \$*** on R&D from 2021 to 2023, while Drexel, Nufarm, and PBI-Gordon reported *** R&D expenditures during the same period.⁹¹ Albaugh, Drexel, and Nufarm rated the complexity, intensity, and importance of their manufacturing activities as a *** on a scale of 1 to 5, while PBI-Gordon rated the complexity, intensity, and importance of its manufacturing activities as a ***.⁹²

⁸³ CR/PR at Table D-6.

⁸⁴ CR/PR at Table D-6; Albaugh's U.S. Producer Questionnaire Response, EDIS Doc. 818455 (Apr. 12, 2024) at III-13a.

⁸⁵ CR/PR at Table D-6.

⁸⁶ CR/PR at Table D-5.

⁸⁷ CR/PR at Table D-6.

⁸⁸ CR/PR at Table D-5; PBI-Gordon's Postconfr. Br. at 5-6, Exh. 3.

⁸⁹ *Derived from* converters' U.S. Producer Questionnaire Responses.

⁹⁰ CR/PR at Table D-6.

⁹¹ CR/PR at Table D-6.

⁹² CR/PR at Table D-7.

Drexel, Nufarm, and PBI-Gordon reported that their manufacturing activities involve ***.⁹³ Drexel also reports that ***.⁹⁴ At the conference, however, representatives from PBI-Gordon and Drexel acknowledged that a higher level expertise is needed for the production of 2,4-D acid than the production of 2,4-D esters and salts.⁹⁵ Corteva reported *** R&D expenditures during the POI but rated the complexity, intensity, and importance of its manufacturing activities as a ***.⁹⁶

Value Added. As mentioned in section III.C., converters assert that the processing of 2,4-D acid into 2,4-D esters and salts ranges from *** percent to *** percent, though Petitioner asserts this is misleading insofar as they fail to account for converters' sourcing of 2,4-D acid from unfairly traded subject imports.⁹⁷ As calculated by the aggregate annual total conversion costs (including direct labor and other factory costs) divided by total COGS derived from converters' questionnaire responses, the value added annually during the 2021-2023 period was *** percent for Albaugh, *** percent for Drexel, *** percent for Nufarm, and *** percent for PBI-Gordon.⁹⁸ By comparison, the value added annually for the production of 2,4-D acid during the 2021-2023 period based on this calculation was *** percent for Corteva.⁹⁹

Employment Levels. The average number of production related-workers ("PRWs") involved in the production of 2,4-D esters and/or salts annually ranged from *** for Albaugh, *** for Drexel, *** for Nufarm, and *** for PBI-Gordon.¹⁰⁰ Accordingly, for responding converters, they collectively employed between 127 and 149 PRWs.¹⁰¹ By comparison, Corteva reported *** PRWs during the POI.¹⁰²

Quantity and Type of Parts Sourced in United States. In 2023, 2,4-D acid accounted for *** percent of Albaugh's total raw material costs, of which, it sourced ***; *** percent of Drexel's total raw material costs, of which, it sourced ***; and *** percent of Nufarm's total raw material costs, of which, it sourced ***.¹⁰³ PBI-Gordon sourced *** of its 2,4-D acid from

⁹³ CR/PR at Tables D-5-7; Nufarm's Postconfr. Br. at 6-7; Drexel's Postconfr. Br. at 10; PBI-Gordon's Postconfr. Br. at 6.

⁹⁴ CR/PR at Table D-7.

⁹⁵ Conference Tr. at 154 (Wolf and Deck).

⁹⁶ CR/PR at Tables D-6-7.

⁹⁷ Drexel's Postconfr. Br. at 11; Nufarm's Postconfr. Br. at 8; PBI-Gordon's Postconfr. Br. at 8.

⁹⁸ CR/PR at Table D-6.

⁹⁹ CR/PR at Table D-6.

¹⁰⁰ CR/PR at Table D-6. In their narrative responses, Albaugh reports ***; Drexel reports ***; Nufarm reports ***; and PBI-Gordon reports ***. *Id.* at Table D-5.

¹⁰¹ *Derived from* converters' U.S. Producer Questionnaire Responses.

¹⁰² CR/PR at Table D-6. In its narrative response, Corteva estimates that ***. *Id.* at Table D-5.

¹⁰³ CR/PR at Table D-6. Albaugh reports that their material inputs, other than 2,4-D acid, include ***. *Id.* Drexel reports that its material inputs, other than 2,4-D acid, include ***. *Id.* at Tables D-5-6. Nufarm reports that its material inputs, other than 2,4-D acid, include ***. *Id.*

*** in 2023.¹⁰⁴ By comparison, Corteva sourced *** percent of the raw materials required to produce 2,4-D acid domestically in 2023.¹⁰⁵

Other Costs and Activities. Drexel reports that ***.¹⁰⁶ Nufarm reports that it ***.¹⁰⁷ PBI-Gordon reports that ***.¹⁰⁸ Corteva submits that the production of 2,4-D acid ***.¹⁰⁹

Conclusion. As an initial matter, Albaugh, Drexel, Nufarm, and PBI-Gordon each engage in two kinds of 2,4-D operations: (1) converting 2,4-D acid into 2,4-D esters and/or salts; and (2) formulating herbicide products, which involves mixing or blending the 2,4-D ester or salt it produces with other ingredients.¹¹⁰ Only converters' 2,4-D operations with respect to the conversion of 2,4-D acid into 2,4-D esters and/or salts constitutes an activity pertaining to production of the domestic like product, as only the 2,4-D part of formulated herbicide products are in-scope merchandise. Accordingly, the Commission's sufficient production-related activities analysis is limited to analyzing the production-related activities of Albaugh, Drexel, Nufarm, and PBI-Gordon related to the conversion of 2,4-D acid into 2,4-D ester and salt.¹¹¹

The record indicates that the relevant production-related activities of Albaugh, Drexel, Nufarm, and PBI-Gordon are on a smaller scale than those of Corteva. The estimated cost for replicating Corteva's current facility is *** the estimated costs for replicating the current facilities of Albaugh, Drexel, Nufarm, and PBI-Gordon. The value of Corteva's assets was also *** the reported values of Drexel's and PBI-Gordon's assets. Although the reported value of Albaugh's assets were *** to those of Corteva, and the reported values of Nufarm's assets were ***, both firms appear to have overstated the value of their assets related 2,4-D production by including assets involved in the production of out-of-scope formulations.¹¹² Corteva's capital expenditures were also *** Albaugh's and Drexel's during the POI. Although Nufarm and PBI-

¹⁰⁴ CR/PR at Table D-6. PBI-Gordon reports that its material inputs, other than 2,4-D acid, include ***. *Id.*

¹⁰⁵ CR/PR at Table D-6.

¹⁰⁶ CR/PR at Table D-5. Drexel also reports that ***. *Id.*

¹⁰⁷ CR/PR at Table D-5. Nufarm also reports that ***. *Id.*

¹⁰⁸ CR/PR at Table D-5.

¹⁰⁹ CR/PR at Table D-5.

¹¹⁰ CR/PR at Table D-4.

¹¹¹ See, e.g., *Certain Pea Protein from China*, Inv. Nos. 701-TA-692 and 731-TA-1628 (Preliminary), USITC Pub. 5457 (Sept. 2023) at 15 n.64; *Corrosion Inhibitors from China*, Inv. Nos. 701-TA-638, 731-TA-1473 (Final), USITC Pub. 5169 (Mar. 2021) at 12 n.63.

¹¹² In both Albaugh's and Nufarm's narrative responses regarding capital investments, they discuss ***. See CR/PR at Table D-5. Furthermore, the reported values for Nufarm's assets are ***. *Id.* at Table D-6.

Gordon reported capital expenditures that were *** Corteva's, both firms appear to have overstated their capital expenditures related to 2,4-D production by including capital expenditures related to their entire operations, including the production of out-of-scope formulations.¹¹³

The record also indicates that based on calculations derived from the questionnaire responses the value-added by Corteva is *** the value-added by converters, with the value added by Corteva in the production of 2,4-D acid, ranging from *** percent to *** percent, and the value-added by converters ranging from *** percent to *** percent for Albaugh, Nufarm, and PBI-Gordon and *** percent to *** percent for Drexel. Furthermore, the record indicates that converters are adding this value through the conversion of ***, 2,4-D acid. By contrast, the vast majority of raw material inputs used by Corteva in the production of 2,4-D are sourced ***.

On the other hand, the record indicates that the conversion of 2,4-D acid into 2,4-D esters and salts requires a high degree of technical expertise, as it involves chemical reactions with specialized equipment and workers, and all but PBI-Gordon rated the complexity, intensity, and importance of their manufacturing activities a *** out of 5, the same reported by Corteva.¹¹⁴ The record also indicates that the conversion process involves a significant number of employees, although the *** reported by PBI-Gordon includes employment related to the production of out-of-scope formulations.¹¹⁵

Although the record is mixed, on balance based on the record of these preliminary phase investigations, we find that converters do not engage in sufficient production-related activities to qualify as domestic producers for purposes of the preliminary phase of the investigations.¹¹⁶

¹¹³ Nufarm's Postconfr. Br. at 7; PBI-Gordon's Post Conference Brief at 6.

¹¹⁴ Corteva states that the esterification and amination of 2,4-D acid involves a chemical reaction. Conference Tr. at 36 (Garcia de Alba). Additionally, Corteva reported that its 2,4-D acid plant is separate from its 2,4-D ester and salt plant, and that the workers for these two facilities are assigned to a specific plant because the processes require some level of specialization, knowledge, and understanding of the processes that they're managing. *Id.* at 45-56.

¹¹⁵ While the employment levels reported by PBI-Gordon appear *** those of Corteva, they represent employees ***. CR/PR at Table D-5. The relatively large employment figures reported by Nufarm also appear anomalous, and ***. *Id.*

¹¹⁶ We intend to examine this issue further in any final phase of the investigations. Accordingly, we invite the parties to submit comments on the draft questionnaires relevant to this issue in an any final phase of the investigations.

B. Related Parties

We must determine whether any producer of the domestic like product should be excluded from the domestic industry pursuant to Section 771(4)(B) of the Tariff Act. This provision allows the Commission, if appropriate circumstances exist, to exclude from the domestic industry producers that are related to an exporter or importer of subject merchandise or which are themselves importers.¹¹⁷ Exclusion of such a producer is within the Commission's discretion based upon the facts presented in each investigation.¹¹⁸

1. Arguments of the Parties

Petitioner argues that if the Commission includes converters in the domestic industry, they should be excluded from the industry as related parties due to their importation of subject merchandise.¹¹⁹

Respondents argue that appropriate circumstances do not exist for the exclusion of any converter from the domestic industry.¹²⁰

2. Analysis

Given our finding that converters do not engage in sufficient production-related activities to qualify as domestic producers, we do not reach the question of whether appropriate circumstances exist to exclude them under the related parties provision.

¹¹⁷ See *Torrington Co. v. United States*, 790 F. Supp. 1161, 1168 (Ct. Int'l Trade 1992), *aff'd without opinion*, 991 F.2d 809 (Fed. Cir. 1993); *Sandvik AB v. United States*, 721 F. Supp. 1322, 1331-32 (Ct. Int'l Trade 1989), *aff'd mem.*, 904 F.2d 46 (Fed. Cir. 1990); *Empire Plow Co. v. United States*, 675 F. Supp. 1348, 1352 (Ct. Int'l Trade 1987).

¹¹⁸ The primary factors the Commission has examined in deciding whether appropriate circumstances exist to exclude a related party include the following:

- (1) the percentage of domestic production attributable to the importing producer;
- (2) the reason the U.S. producer has decided to import the product subject to investigation (whether the firm benefits from the LTFV sales or subsidies or whether the firm must import in order to enable it to continue production and compete in the U.S. market);
- (3) whether inclusion or exclusion of the related party will skew the data for the rest of the industry;
- (4) the ratio of import shipments to U.S. production for the imported product; and
- (5) whether the primary interest of the importing producer lies in domestic production or importation. *Changzhou Trina Solar Energy Co. v. USITC*, 100 F. Supp.3d 1314, 1326-31 (Ct. Int'l. Trade 2015); see also *Torrington Co.*, 790 F. Supp. at 1168.

¹¹⁹ Petitioner's Postconfr. Br. at 20.

¹²⁰ Drexel's Postconfr. Br. at 13-14; Nufarm's Postconfr. Br. at 10; PBI-Gordon's Postconfr. Br. at 10-11, 13.

Corteva is subject to possible exclusion from the domestic industry under the related parties provision because it imported subject merchandise during the POI. We find that appropriate circumstances do not exist to exclude Corteva from the domestic industry based on the following analysis.

Corteva, the petitioner, was the sole domestic producer of 2,4-D acid in 2023, accounting for 100 percent of domestic industry production.¹²¹ It imported subject 2,4-D from China in *** and from India in ***.¹²² Corteva's ratio of subject imports to domestic production was *** percent in ***.¹²³ It stated that the subject merchandise it imported from China and India ***.¹²⁴

As Corteva accounted for all of domestic production, excluding it from the domestic industry would result in a distorted view of the industry.¹²⁵ Given this and the fact that Corteva imported *** quantities of subject merchandise for ***, we find that appropriate circumstances do not exist to exclude Corteva from the domestic industry under the related parties provision.

Accordingly, consistent with our definition of the domestic like product, we define the domestic industry as the only U.S. producer of 2,4-D, Corteva.

V. Negligible Imports

Pursuant to Section 771(24) of the Tariff Act, imports from a subject country of merchandise corresponding to a domestic like product that account for less than 3 percent of all such merchandise imported into the United States during the most recent 12 months for which data are available preceding the filing of the petition shall be deemed negligible.¹²⁶

¹²¹ CR/PR at Table III-1.

¹²² CR/PR at Table III-11.

¹²³ CR/PR at Table III-11. Corteva reported that it imported ***. *Id.* at III-16.

¹²⁴ CR/PR at III-16.

¹²⁵ See *Tetrahydrofurfuryl Alcohol from China*, Inv. No. 731-TA-1046 (Preliminary), USITC Pub. 3620 (Aug. 2003) at n.20 ("As it has been the sole domestic producer throughout the POI, however, appropriate circumstances do not exist to exclude it from the domestic industry."). See also, *1-Hydroxyethylidene-1, 1-Diphosphonic Acid (Hedp) from China & India*, USITC Inv. No. 731-TA-1146 (May 2008) at 8; *Industrial Nitrocellulose from Brazil, China, France, Germany, Japan, Korea, the United Kingdom, and Yugoslavia*, Inv. Nos. 731-TA-96 and 439-445 (Review), USITC Pub. 3342 (Aug. 2000) at 8 (sole domestic producer not excluded); *Drafting Machines from Japan*, Inv. No. 731-TA-432 (Review), USITC Pub. 3252 (Nov. 1999) at 5.

¹²⁶ 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)).

Petitioner argues that the subject imports from both China and India surpass the three percent negligibility threshold and are therefore not negligible.¹²⁷ Respondents do not comment on the negligibility of subject imports from China or India.

During March 2023 – February 2024, the 12-month period preceding the filing of the petitions, subject imports from China (for both the antidumping and countervailing duty investigations) accounted for 46.0 percent of total U.S. imports of 2,4-D, and subject imports from India (for both the antidumping and countervailing duty investigations) accounted for 33.9 percent of total U.S. imports of 2,4-D.¹²⁸ As imports from each subject country exceed the three percent negligibility threshold, we find that imports from China subject to the antidumping and countervailing duty investigations, and imports from India subject to the antidumping and countervailing duty investigations, 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;
- (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

¹²⁷ Petition at 17.

¹²⁸ CR/PR at Table IV-3.

(4) whether the subject imports are simultaneously present in the market.¹²⁹

While no single factor is necessarily determinative, and the list of factors is not exclusive, these factors are intended to provide the Commission with a framework for determining whether the subject imports compete with each other and with the domestic like product.¹³⁰ Only a “reasonable overlap” of competition is required.¹³¹

A. Arguments of the Parties

Petitioner argues that cumulation is mandatory in these investigations.¹³² Corteva asserts that the petitions for both China and India were filed on the same day, that none of the statutory exceptions to cumulation apply, and that there is a reasonable overlap in competition between and among subject imports from China and India and the domestic like product.¹³³

Respondents Drexel, Nufarm, and PBI-Gordon do not contest the cumulation of imports from China and India for purposes of present material injury in the preliminary phase of the investigations.¹³⁴

B. Analysis

The statutory threshold for cumulation is satisfied in these investigations because Petitioner filed the antidumping and countervailing duty petitions with respect to both countries on the same day, March 14, 2024.¹³⁵ ¹³⁶ The record also indicates that there is a

¹²⁹ 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).

¹³⁰ See, e.g., *Wieland Werke, AG v. United States*, 718 F. Supp. 50 (Ct. Int’l Trade 1989).

¹³¹ 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.”).

¹³² Petition at 18.

¹³³ Petition at 17-19.

¹³⁴ Conference Tr. at 160 (Okun, Emerson, and Porter); Nufarm’s Postconfr. Br. at 4; Drexel’s Postconfr. Br. at 16.

¹³⁵ CR/PR at I-1.

¹³⁶ None of the statutory exceptions to cumulation apply. We observe that these investigations involve dumping and subsidy allegations regarding 2,4-D from both China and India. Consequently, any (Continued...)

reasonable overlap of competition between subject imports from both countries, and between subject imports from each source and the domestic like product, for the reasons discussed below.

Fungibility. The record indicates that domestically produced 2,4-D and imports of 2,4-D from each subject country are generally fungible. *** responding market participants reported that subject imports from each subject country were *** interchangeable with each other as well as with domestically produced 2,4-D.¹³⁷ Furthermore, the record shows that both the domestic industry's U.S. shipments of the domestic like product and the responding importers' U.S. shipments of subject imports from China and India consisted primarily of 2,4-D in acid form, with a much smaller share consisting of 2,4-D in ester form, in 2023.¹³⁸

In response to questions concerning how often differences other than price were significant in sales of 2,4-D from different sources, Corteva reported that non-price differences are *** significant between the domestic like product and subject imports from China and India, and between imports from both subject countries.¹³⁹ The responses of U.S. importers were mixed, with a majority reporting that non-price differences are "always" significant between the domestic like product and subject imports from China, and equal numbers (one each) reporting that non-price differences between the domestic like product and subject imports from India, and between subject imports from China and India, are "always," "frequently," or "sometimes" important.¹⁴⁰

decision to cumulate imports from all subject sources in these investigations will involve "cross-cumulating" dumped imports with subsidized imports. We have previously explained why we are continuing our longstanding practice of cross-cumulating. See *Polyethylene Terephthalate (PET) Resin from Canada, China, India, and Oman*, Inv. Nos. 701-TA-531-532 and 731-TA-1270-1273 (Final), USITC Pub. 4604 (April 2016) at 9-11.

¹³⁷ CR/PR at Tables II-7-8. *** reported that imports need additional preparatory crushing to enhance manufacturing flowability, and *** reported that interchangeability is contingent upon meeting product specifications for U.S. EPA approval. *Id.* at II-10.

¹³⁸ CR/PR at Table IV-4. Corteva shipped *** pounds acid equivalent of 2,4-D acid and *** pounds acid equivalent of 2,4-D ester. *Id.* U.S. importers shipped *** and *** pounds acid equivalent of 2,4-D acid from China and India, respectively, and *** and *** pounds acid equivalent of 2,4-D ester from China and India, respectively. *Id.*

¹³⁹ CR/PR at Table II-9.

¹⁴⁰ CR/PR at Table II-10. Several U.S. importers, including ***, report that Corteva is either unwilling or unable to supply them. *Id.* at II-11-12. Nufarm adds that it invested in plant infrastructure upgrades required for processing imported materials. *Id.* PBI-Gordon asserts that Corteva makes a superior product, and that it would have bought more of Corteva's product if it was available. Conference Tr. at 125 (Wolf). PBI-Gordon adds that price is not the issue, and that price only played a secondary role in its decision to buy subject imports from India. *Id.*

Channels of Distribution. During the POI, the domestic like product and subject imports from India were sold ***.¹⁴¹ Although a majority of subject imports from China were sold to distributors during the period, a substantial share, including over *** percent in 2022 and 2023, was sold to end users.¹⁴²

Geographic Overlap. U.S. producer Corteva reported shipping the domestic like product to ***.¹⁴³ Responding U.S. importers also reported shipping imports from each subject country to all regions in the contiguous United States.¹⁴⁴ The majority of subject imports from China entered through ports located in the North, while substantial quantities of subject imports from China also entered through ports located in the South and appreciable quantities of subject imports from China entered through ports located in the East.¹⁴⁵ The majority of subject imports from India also entered through ports located in the North, while substantial quantities also entered through ports located in the East and appreciable quantities entered through ports located in the South.¹⁴⁶

Simultaneous Presence in Market. Domestically produced 2,4-D and imports from each subject country were present in the U.S. market throughout the POI.¹⁴⁷

Conclusion. The record of the preliminary phase of the investigations indicates that subject imports from China and India are generally fungible with the domestic like product and each other. It also shows that subject imports from both countries and the domestic like product were sold in similar channels of distribution and geographic markets and were simultaneously present in the U.S. market. Because there appears to be a reasonable overlap of competition between and among subject imports from China and India and the domestic like product, we analyze subject imports from China and India on a cumulated basis for the analysis of whether there is a reasonable indication of material injury by reason of subject imports.

¹⁴¹ CR/PR at Table II-2.

¹⁴² CR/PR at II-2.

¹⁴³ CR/PR at Table II-3.

¹⁴⁴ CR/PR at Table II-3.

¹⁴⁵ CR/PR at Table IV-5.

¹⁴⁶ CR/PR at Table IV-5.

¹⁴⁷ CR/PR at Table IV-6. Subject imports from China were not present in the U.S. market for two months of the POI, July and August of 2023, and subject import from India were not present in the U.S. market for three months of the POI, August, September, and October of 2023. *Id.*

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.¹⁴⁸ In making this determination, the Commission must consider the volume of subject imports, their effect on prices for the domestic like product, and their impact on domestic producers of the domestic like product, but only in the context of U.S. production operations.¹⁴⁹ The statute defines “material injury” as “harm which is not inconsequential, immaterial, or unimportant.”¹⁵⁰ 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.¹⁵¹ 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.”¹⁵²

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,¹⁵³ 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.¹⁵⁴ 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

¹⁴⁸ 19 U.S.C. §§ 1671b(a), 1673b(a).

¹⁴⁹ 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).

¹⁵⁰ 19 U.S.C. § 1677(7)(A).

¹⁵¹ 19 U.S.C. § 1677(7)(C)(iii).

¹⁵² 19 U.S.C. § 1677(7)(C)(iii).

¹⁵³ 19 U.S.C. §§ 1671b(a), 1673b(a).

¹⁵⁴ *Angus Chemical Co. v. United States*, 140 F.3d 1478, 1484-85 (Fed. Cir. 1998) (“{T}he statute does not ‘compel the commissioners’ to employ {a particular methodology}.”), *aff’d*, 944 F. Supp. 943, 951 (Ct. Int’l Trade 1996).

tangential cause of injury and that there is a sufficient causal, not merely a temporal, nexus between subject imports and material injury.¹⁵⁵

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.¹⁵⁶ In performing its examination, however, the Commission need not isolate the injury caused by other factors from injury caused by unfairly traded imports.¹⁵⁷ Nor does

¹⁵⁵ 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).

¹⁵⁶ 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.

¹⁵⁷ SAA at 851-52 (“{T}he Commission need not isolate the injury caused by other factors from injury caused by unfair imports.”); *Taiwan Semiconductor Industry Ass’n*, 266 F.3d at 1345 (“{T}he Commission need not isolate the injury caused by other factors from injury caused by unfair imports Rather, the Commission must examine other factors to ensure that it is not attributing injury from other sources to the subject imports.” (emphasis in original)); *Asociacion de Productores de Salmon y Trucha de Chile AG v. United States*, 180 F. Supp. 2d 1360, 1375 (Ct. Int’l Trade 2002) (“{t}he Commission is not required to isolate the effects of subject imports from other factors contributing to injury” or make “bright-line distinctions” between the effects of subject imports and other causes.); see also *Softwood Lumber from Canada*, Inv. Nos. 701-TA-414 and 731-TA-928 (Remand), USITC Pub. 3658 at 100-01 (Dec. 2003) (Commission recognized that “{i}f an alleged other factor is found not to have or threaten to have injurious effects to the domestic industry, i.e., it is not an ‘other causal factor,’ then there is nothing to (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.¹⁵⁸ It is clear that the existence of injury caused by other factors does not compel a negative determination.¹⁵⁹

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.”¹⁶⁰ The Commission ensures that it has “evidence in the record” to “show that the harm occurred ‘by reason of’ the LTFV imports,” and that it is “not attributing injury from other sources to the subject imports.”¹⁶¹ The Federal Circuit has examined and affirmed various Commission methodologies and has disavowed “rigid adherence to a specific formula.”¹⁶²

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

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.”).

¹⁵⁸ S. Rep. 96-249 at 74-75; H.R. Rep. 96-317 at 47.

¹⁵⁹ 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.”).

¹⁶⁰ *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 *Swift-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*.

¹⁶¹ *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.

¹⁶² *Nucor Corp. v. United States*, 414 F.3d 1331, 1336, 1341 (Fed. Cir. 2005); see also *Mittal Steel*, 542 F.3d at 879 (“*Bratsk* did not read into the antidumping statute a Procrustean formula for determining whether a domestic injury was ‘by reason’ of subject imports.”).

evidence standard.¹⁶³ Congress has delegated this factual finding to the Commission because of the agency's institutional expertise in resolving injury issues.¹⁶⁴

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 2,4-D in the production of downstream formulated herbicide products. We therefore consider the applicability of the statutory captive production provision, and whether the Commission should focus its analysis primarily on the merchant market when assessing market share and the factors affecting the financial performance of the domestic industry.¹⁶⁵

¹⁶³ We provide in our discussion below a full analysis of other factors alleged to have caused any material injury experienced by the domestic industry.

¹⁶⁴ *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.”).

¹⁶⁵ The captive production provision, 19 U.S.C. § 1677(7)(C)(iv), as amended by the Trade Preferences Extension Act of 2015 (“TPEA”), 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;

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

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.

Arguments of the Parties

Petitioner's Arguments. Petitioner argues that the captive production provision applies in these investigations.¹⁶⁶ It asserts that it captively consumes and sells on the merchant market significant volumes of the 2,4-D it produces; that the 2,4-D that is captively consumed in the production of downstream products, primarily formulated 2,4-D herbicide products, does not reenter the merchant market; and that 2,4-D is the predominate material input in the production of the downstream products.¹⁶⁷

Respondents' Arguments. Drexel and PBI-Gordon argue that the Commission should not apply the captive production provision in these investigations.¹⁶⁸ They contend that Petitioner did not sell a significant proportion of its production to the merchant market.¹⁶⁹ Drexel further contends that Petitioner inappropriately deemed all of its swap shipments as shipments to the merchant market, because it involved ***, making them not sufficiently tied to the U.S. market or domestic market prices to be considered merchant market sales for purposes of the captive production provision analysis.¹⁷⁰

PBI-Gordon also argues that Petitioner does not satisfy the first or second statutory prongs of the captive production provision, claiming that the 2,4-D that is captively consumed by Corteva in the production of downstream products reenters the merchant market insofar as some of the downstream products sold on the merchant market, or at least their 2,4-D component, are domestic like products,¹⁷¹ and that Corteva provided insufficient data concerning the cost share of 2,4-D for its downstream products by only providing these data two of its downstream products, ***.^{172 173}

¹⁶⁶ Petitioner's Postconfr. Br. at 18.

¹⁶⁷ Petitioner's Postconfr. Br. at 18.

¹⁶⁸ PBI-Gordon's Postconfr. Br. at 22; Drexel's Postconfr. Br. at 22-25.

¹⁶⁹ PBI-Gordon's Postconfr. Br. at 19; Drexel's Postconfr. Br. at 24.

¹⁷⁰ Drexel's Postconfr. Br. at 24. Drexel contends that Petitioner's swap volume is driven in part by *** because its swap shipment involves ***. Drexel also contends that ***. *Id.* at 24 n.89.

¹⁷¹ We note that although the 2,4-D included in downstream herbicide formulations is considered in-scope merchandise, the downstream herbicide formulations themselves are out-of-scope. Accordingly, the 2,4-D that is internally transferred for the production of downstream herbicides would ultimately be sold in the market for out-of-scope herbicides, not the merchant market for 2,4-D.

¹⁷² PBI-Gordon's Postconfr. Br. at 22.

¹⁷³ Corteva reported that *** accounted for ***, of its sales in 2023. Email from Daniel Cannistra, EDIS Doc. 819759 (Apr. 25, 2024). Furthermore, it reported that *** accounted for *** of its sales in 2023. *Id.* Given the significant share of Corteva's sales accounted for by ***, *** appears to be an appropriate reference for assessing the cost share of 2,4-D in Corteva's downstream formulated herbicide products for purposes of the second statutory criterion in these preliminary phase investigations.

Drexel contends that even if the Commission determines that the captive consumption provision applies, the Commission has expressly recognized that captive consumption attenuates the degree of competition between the domestic like product and subject imports.¹⁷⁴

Analysis

We determine that the threshold criterion for application of the captive production provision has been met. 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. In these investigations, internal consumption accounted for between *** and *** percent of Corteva's total U.S. shipments of 2,4-D during the POI by quantity.¹⁷⁵ Corteva's merchant market sales, including swaps,¹⁷⁶ accounted for between *** and *** percent of its total U.S. shipments during the POI by quantity.¹⁷⁷ Because both internal consumption and merchant market sales constitute significant portions of the domestic industry's production, the threshold criterion for applying the captive production provision is satisfied.

We also determine that the first statutory criterion has been met. This criterion focuses on whether any of the domestic like product that is transferred internally for further processing is in fact sold on the merchant market.¹⁷⁸ Corteva reported internal consumption of 2,4-D for the production of downstream formulated herbicide products and did not report that any 2,4-D intended for internal consumption was diverted to the merchant market.¹⁷⁹ Therefore, the first statutory criterion appears to be satisfied.

¹⁷⁴ Drexel's Postconfr. Br. at 25.

¹⁷⁵ CR/PR at Table III-7.

¹⁷⁶ Corteva has ***. CR/PR at VI-1 n.5. Therefore, the record indicates that the swaps meet the criteria for merchant market "sales." *Bethlehem Steel Corp. v. United States*, 294 F.Supp.2d 1359, 1365 (Ct. Int'l Trade 2003) (to be considered a "sale" in the merchant market, there must be transfer of title to an unrelated party and payment of consideration). Additionally, *** reported that Corteva ***, indicating that *** swaps were based on U.S. market prices. *Id.* at Table V-17.

¹⁷⁷ *Derived from* CR/PR at Table III-7. Commercial U.S. shipments accounted for between *** and *** percent of Corteva's total U.S. shipments during the POI by quantity. *Id.* Swap shipments accounted for between *** and *** percent of Corteva's total U.S shipments during the POI by quantity. *Id.*

¹⁷⁸ *See, e.g., Hot-Rolled Steel Products from Argentina and South Africa*, Inv. Nos. 701-TA-404, 731-TA-898, 905 (Final), USITC Pub. 3446 (Aug. 2001) at 15-16; *Certain Cold-Rolled Steel Products from Argentina, Brazil, China, Indonesia, Japan, Russia, Slovakia, South Africa, Taiwan, Turkey and Venezuela*, Inv. Nos. 701-TA-393 and 731-TA-829-40 (Final) (Remand), USITC Pub. 3691 (May 2004) at 2 & n.19.

¹⁷⁹ CR/PR at III-14.

In applying the second statutory criterion, we generally consider whether the domestic like product is the predominant material input into a downstream product by referring to its share of the raw material cost of the downstream product.¹⁸⁰ In previous investigations, the Commission construed “predominant” material input to mean the main or strongest element, and not necessarily a majority of the inputs by value.¹⁸¹ In these investigations, Corteva reports that 2,4-D acid comprises *** percent and *** percent of the finished cost and quantity, respectively, of *** downstream formulated herbicide product.¹⁸² However, given that 2,4-D acid must first be converted into a derivative form before it can be used in the formulation of a downstream herbicide, the value of 2,4-D ester or salt as a share of the downstream formulated herbicides serves as a better reference. In correspondence with the Commission, Petitioner states that 2,4-D salt comprises *** percent of the finished cost of ***.¹⁸³ The record therefore indicates that 2,4-D is the predominant material input in formulated herbicide products. Thus, this criterion also appears to be satisfied.

In sum, we find that the criteria for application of the captive production provision are satisfied in these preliminary phase investigations. Accordingly, we primarily focus on the merchant market in analyzing the market share and financial performance of the domestic industry.¹⁸⁴

¹⁸⁰ See generally, e.g., *Polyethylene Terephthalate Film, Sheet and Strip from Brazil, China, Thailand, and the United Arab Emirates*, Inv. Nos. 731-TA-1131-1134 (Final), USITC Pub. 4040 (Oct. 2008) at 17 n.103; *Polyethylene Terephthalate Film, Sheet, and Strip from India and Taiwan*, Inv. Nos. 701-TA-415 and 731-TA-933-34 (Final), USITC Pub. 3518 (June 2002) at 11 & n.51. The Commission has construed “predominant” material input to mean the main or strongest element, and not necessarily a majority, of the inputs by value. See *Polyvinyl Alcohol from Germany and Japan*, Inv. Nos. 731-TA-1015-16 (Final), USITC Pub. 3604 (June 2003) at 15 n.69.

¹⁸¹ See *Polyvinyl Alcohol from Germany and Japan*, Inv. Nos. 731-TA-1015-1016 (Final), USITC Pub. 3604 (June 2003) at 15, n. 69, citing 2 New Shorter Oxford English Dictionary 2329 (1993). The Commission reaffirmed this approach in *Polyvinyl Alcohol from Taiwan*, Inv. No. 731-TA-1088 (Preliminary), USITC Pub. 3732 at 16 (Oct. 2004).

¹⁸² CR/PR at Table III-9 n.9.

¹⁸³ Correspondence with Corteva, EDIS Doc. 821245 (May 13, 2024). Albaugh, Drexel, and Nufarm state that 2,4-D ester or salt accounts for between *** percent and *** percent of the value of their downstream formulated herbicide products. Albaugh’s U.S. Producer Questionnaire Response at II-12; Drexel’s U.S. Producer Questionnaire Response, EDIS Doc. 818632 (Apr. 16, 2024) at II-12; Nufarm’s U.S. Producer Questionnaire Response, EDIS Doc. 818470 (Apr. 12, 2024) at II-12.

¹⁸⁴ For the reasons set forth above, we therefore primarily rely on the merchant (commercial) market that includes Corteva’s “swap sales.” See CR/PR at Table C-3 (“commercial and swap sales”).

2. Demand Conditions

U.S. demand for 2,4-D is driven by the demand for U.S. produced downstream formulated herbicide products.¹⁸⁵ The parties generally agree that the demand for formulated herbicide products depends to some degree on the geographical location and crop type, but also that demand is relatively stable from year to year because agricultural requirements are relatively stable.¹⁸⁶ They also generally agree that demand for formulated herbicide products is seasonal.¹⁸⁷

In reporting that the 2,4-D market is subject to business cycles, six of eight responding U.S. importers reported that demand for 2,4-D varies throughout the year, with most applications of formulated herbicide products occurring in the spring, and some occurring in the summer and winter.¹⁸⁸ Respondents categorize these three application seasons as: (1) pre-emergence, (2) post-emergence/over-the-top, and (3) post-harvest burn-down.¹⁸⁹ According to Drexel, the pre-emergence season typically lasts less than one month, the post-emergence season typically lasts four to five months, and the post-harvest burn down season typically lasts one to two months.¹⁹⁰ It adds that because the post-emergence season is the longest, it represents the largest market for formulated herbicide products.¹⁹¹ While Corteva reported that the 2,4-D market *** subject to business cycles, it acknowledged that formulated herbicide products have different uses, including over-the-top applications.¹⁹²

Corteva and responding importers reported varying demand trends in the U.S. market during the POI. *** reported that U.S. demand for 2,4-D had *** since January 1, 2021.¹⁹³ Three of seven responding U.S. importers reported that U.S. demand for 2,4-D had fluctuated up since January 1, 2021, while two reported that it steadily increased and two reported that it had not changed.¹⁹⁴ Reasons given for increased demand during the POI include seasonal factors, challenges with other herbicides, the introduction of GMO technology, a rising trend in

¹⁸⁵ CR/PR at II-6.

¹⁸⁶ Drexel's Postconfr. Br. at 19; Conference Tr. at 53-56 (Moulin), 201 (Deck).

¹⁸⁷ Conference Tr. at 25, 53-54 (Moulin), 202 (Wolle and Deck); Drexel's Postconfr. Br. at 19. *** reported that the use of 2,4-D is connected to seasonal agricultural activities; *** reported that over 80 percent of acres treated with 2,4-D end-use products are treated during April, May, June, and July; and *** reported that inventory levels are influenced by seasonal crop cycles. CR/PR at II-7.

¹⁸⁸ CR/PR at II-7.

¹⁸⁹ Drexel's Postconfr. Br. at 19; Conference Tr. at 213-18.

¹⁹⁰ Drexel's Postconfr. Br. at 19.

¹⁹¹ Drexel's Postconfr. Br. at 20.

¹⁹² Petitioner's Postconfr. Br. at 39.

¹⁹³ CR/PR at Table III-5.

¹⁹⁴ CR/PR at Table III-5.

2,4-D usage, high COVID-19 pandemic-related demand,¹⁹⁵ domestic supply shortages in 2022, and the increased adoption of Corteva's Enlist seeds, which require Corteva's 2,4-D herbicide products.¹⁹⁶ At the conference, representatives of Drexel and Nufarm stated that the COVID-19 pandemic and U.S. weather events, including the hurricane season in 2021 and Great Texas Freeze in 2022, increased demand for agrochemical products, including 2,4-D based herbicides, as farmers and distributors perceived market shortages that led them to significantly increase their purchases of formulated herbicide products in 2022.¹⁹⁷ *** and Counsel for Atul reported that demand subsequently declined in 2023, as farmers drew down their inventories built up in 2022.¹⁹⁸

Apparent U.S. consumption of 2,4-D in the merchant market increased from *** pounds acid equivalent in 2021 to *** pounds acid equivalent in 2022, before decreasing to *** pounds acid equivalent in 2023, a level *** percent higher than in 2021.¹⁹⁹

3. Supply Conditions

During the POI, the U.S. market for 2,4-D was supplied by Corteva, subject imports from China and India, and nonsubject imports.²⁰⁰

Corteva is the sole domestic producer of 2,4-D for purposes of these preliminary investigations, as discussed above in section IV. Its ability to respond to changes in demand in the U.S. 2,4-D market is helped by its *** but mitigated by its ***.²⁰¹

Corteva was the second-largest source of supply to the U.S. merchant market throughout the POI, and its share of apparent U.S. consumption in the merchant market decreased from *** percent in 2021 to *** percent in 2022 and *** percent in 2023.²⁰² Its

¹⁹⁵ At the conference, a representative of Corteva stated that conditions related to the COVID-19 pandemic could have caused demand to spike periodically during the POI. Conference Tr. at 53, 55 (Moulin).

¹⁹⁶ CR/PR at II-7; Conference Tr. at 111-12 (Bernard), 167, 201 (Deck).

¹⁹⁷ Conference Tr. at 111-12 (Bernard), 167, 201 (Deck).

¹⁹⁸ CR/PR at II-7; Conference Tr. at 130 (Raghuwanshi).

¹⁹⁹ CR/PR at Tables IV-9, C-3. Apparent U.S. consumption of 2,4-D in the total market increased from *** pounds acid equivalent in 2021 to *** pounds acid equivalent in 2022, before decreasing to *** pounds acid equivalent in 2023, a level *** percent higher than in 2021. *Id.* at Table C-1.

²⁰⁰ CR/PR at Tables IV-9, C-3.

²⁰¹ CR/PR at II-4.

²⁰² CR/PR at Tables IV-9, C-3. Thus, Corteva's share of apparent U.S. consumption in the merchant market declined by *** percentage points over the POI. *Id.* Corteva's share of apparent U.S. consumption in the total market decreased from *** percent in 2021 to *** percent in 2022, before increasing to *** percent in 2023. *Id.* at Table C-1. Accordingly, Corteva's share of apparent U.S. consumption in the total market declined by *** percentage points over the POI. *Id.*

practical capacity decreased from *** pounds acid equivalent in 2021 to *** pounds acid equivalent in 2022, before increasing to *** pounds acid equivalent in 2023.²⁰³ Corteva's practical capacity utilization for 2,4-D increased from *** percent in 2021 to *** percent in 2022, before decreasing to *** percent in 2023.²⁰⁴

Subject imports were the largest source of supply to the U.S. merchant market throughout the POI, and their share of apparent U.S. consumption in the merchant market increased from *** percent in 2021 to *** percent in 2022, before decreasing to *** percent in 2023.²⁰⁵ Nonsubject imports, the smallest source of supply in the U.S. merchant market, increased their share of apparent U.S. consumption in the merchant market from *** percent in 2021 to *** percent in 2022 and *** percent in 2023.²⁰⁶ The largest sources of nonsubject imports in 2023 were Austria, Colombia, and Mexico, which together accounted for 99 percent of nonsubject imports that year.²⁰⁷

Corteva reported experiencing several supply constraints during the POI, including: (1) Winter Storm Uri, which reduced the capacities of several chemical plants in Texas, including ones that produced raw materials for Corteva's 2,4-D production, from February to April 2021; (2) the COVID-19 pandemic, which caused supply chain effects that ***; and (3) a freeze in Texas in 2022 (the Great Texas Freeze), ***.²⁰⁸

Four of seven responding U.S. importers also reported experiencing supply constraints during the POI.²⁰⁹ Specifically, they reported capacity and availability issues; periodic sales allocations when demand exceeded production capacity, including Corteva's alleged decision to not sell 2,4-D in the U.S. market, which resulted in converters' increased reliance on imports for

²⁰³ CR/PR at Table III-4.

²⁰⁴ CR/PR at Table III-4. Thus, Corteva's practical capacity utilization decreased by *** percentage points over the POI. *Id.*

²⁰⁵ CR/PR at Tables IV-9, C-3. Thus, subject imports' share of apparent U.S. consumption in the merchant market increased by *** percentage points over the POI. *Id.* Subject imports' share of apparent U.S. consumption in the total market increased from *** percent in 2021 to *** percent in 2022, before decreasing to *** percent in 2023. *Id.* at Table C-1. Accordingly, subject imports' share of apparent U.S. consumption in the total market increased by *** percentage points over the POI. *Id.*

²⁰⁶ CR/PR at Tables IV-9, C-3. Thus, nonsubject imports' share of apparent U.S. consumption in the merchant market increased by *** percentage points over the POI. *Id.* Nonsubject imports' share of apparent U.S. consumption in the total market increased from *** percent in 2021 to *** percent in 2022 and *** percent in 2023. *Id.* at Table C-1. Accordingly, nonsubject imports' share of apparent U.S. consumption in the total market increased by *** percentage points over the POI. *Id.*

²⁰⁷ CR/PR at II-6.

²⁰⁸ CR/PR at II-6, Tables III-2-3, 5.

²⁰⁹ CR/PR at II-6.

conversion processes;²¹⁰ the unavailability of raw materials caused by COVID-19 related supply chains disruptions; and the unavailability of 2,4-D acid globally in 2021-22.²¹¹ Drexel and Nufarm reported supply disruptions related to the COVID-19 pandemic and U.S. weather events that created perceived, if not actual, shortages in the market, prompting purchasers to overorder in 2022 to ensure sufficient supplies during the growing season and then reduce their orders in 2023 as they drew down their inventories.²¹² Similarly, Atul reported supply disruptions related to the COVID-19 pandemic that it claims caused purchasers to increase their 2,4-D inventories in 2022 in anticipation of further price hikes.²¹³ Atul, Drexel, and Nufarm generally agree that market conditions returned to normal in 2023.²¹⁴

According to Drexel and NCGA, Corteva's 2,4-D production is insufficient to satisfy demand for 2,4-D products in the U.S. market.²¹⁵ Corteva reported that it decreased its production and sales to the U.S. merchant market because subject import prices were below its production costs, but also that it could have supplied additional 2,4-D to the U.S. market given that its plant was underutilized during the POI.²¹⁶

4. Substitutability and Other Conditions

We find that there is at least a moderate-to-high degree of substitutability between domestically produced 2,4-D and subject imports.²¹⁷ As noted above in section VI.B., *** responding market participants reported that subject imports were always or frequently interchangeable with domestically produced 2,4-D.²¹⁸ The primary factors contributing to this level of substitutability include the similar quality and availability of different forms of 2,4-D as

²¹⁰ Nufarm and PBI-Gordon reported that Corteva discontinued sales of 2,4-D to them starting in 2022. PBI-Gordon's Postconfr. Br. at 25-27, Exh. 4; Nufarm's Postconfr. Br. at 21, Exh. 3; Conference Tr. at 123-125 (Wolf), 115-16 (Deck). As discussed in section VII.E. below, the record evidence is mixed on whether supply disruptions or competitive/business decisions caused Corteva's reduced sales to Nufarm and PBI-Gordon during the POI.

²¹¹ CR/PR at II-6.

²¹² Drexel's Postconfr. Br. at 17-18; Nufarm's Postconfr. Br. at 17-18; Conference Tr. at 112 (Bernard).

²¹³ Atul's Postconfr. Br. at 4.

²¹⁴ Atul's Postconfr. Br. at 4; Drexel's Postconfr. Br. at 18; Nufarm's Postconfr. Br. at 18.

²¹⁵ Drexel's Postconfr. Br. at 32; NCGA's Postconfr. Br. at 4.

²¹⁶ Petitioner's Postconfr. Br. at 8, 15.

²¹⁷ CR/PR at II-8.

²¹⁸ CR/PR at Tables II-7-8. *** reported that imports need additional preparatory crushing to enhance manufacturing flowability and submitted that Corteva makes a superior product compared to subject producers. CR/PR at II-10; Conference Tr. at 125 (Wolf); PBI-Gordon's Postconfr. Br. at 16-17. *** reported that interchangeability is contingent upon meeting product specifications for U.S. EPA approval. CR/PR at II-10.

between domestically produced 2,4-D and subject imports and the high degree of interchangeability between domestically produced 2,4-D and subject imports of the same type.²¹⁹ Factors reducing substitutability between domestically produced 2,4-D and subject imports from China and India are some differences in lead times, the reported inability of some U.S. importers to purchase 2,4-D from Corteva, and the preference of some purchasers for 2,4-D acid in flake or powder form.²²⁰ Four responding importers reported that Corteva was unwilling or unable to supply them with domestically produced 2,4-D during the POI.²²¹ Further, while Corteva reported non-price differences were *** significant, responses of U.S. importers were mixed, as discussed below.

The record in the preliminary phase of these investigations indicates that price is an important factor in purchasing decisions for 2,4-D. Purchasers responding to the lost sales and lost revenue survey most frequently ranked availability/supply, quality, and price/cost as among the three most important factors in purchasing decisions for 2,4-D.²²² Corteva reported that non-price differences are *** significant in sales of the domestic like product and subject imports.²²³ The responses of U.S. importers were mixed, with a majority reporting that non-price differences are “always” significant in sales of the domestic like product and subject imports from China, and equal numbers (one each) reporting that non-price differences between the domestic like product and subject imports from India are “always,” “frequently,” or “sometimes” significant.²²⁴

²¹⁹ CR/PR at II-8.

²²⁰ CR/PR at II-8. According to testimony at the conference, 2,4-D acid can be sold in three different forms, flake, powder, or granular. Conference Tr. at 183-184 (Wolf), 224-25 (Bernard). Further, it was reported that flaking is an additional step in the production of 2,4-D acid, making it more labor-intensive than producing 2,4-D acid in granular or powder forms. *Id.* at 226-27 (Wolf). A representative of Corteva reported that the 2,4-D acid that Corteva sells on the merchant market is in flake form. *Id.* at 101 (Garcia de Alba). Representatives of PBI-Gordon and Drexel reported that they generally purchase 2,4-D acid in powder or granular forms but prefer 2,4-D acid in flake form because it has no dust, unlike the powder and granular forms of 2,4-D acid. *Id.* at 183-84 (Wolf), 224-25 (Bernard). A representative from PBI-Gordon also reported that a producer internally consuming 2,4-D acid does not need it in flake form. *Id.* at 227 (Wolf). A representative of Corteva stated that the 2,4-D acid it produces for internal consumption is in liquid/molten form. *Id.* at 101 (Garcia de Alba).

²²¹ CR/PR at II-11-12. Atul, Drexel, Nufarm, and PBI-Gordon argue that availability rather than price was the primary factor driving purchasing decisions during the POI, as Corteva was allegedly unwilling to sell the domestic like product to purchasers in the merchant market in 2022 and 2023. Atul’s Postconfr. Br. at 3; Drexel’s Postconfr. Br. at 36; PBI-Gordon’s Postconfr. Br. at 34; Conference Tr. at 116-117 (Deck), 125 (Wolf). As discussed in section VII.E. below, the record indicates that Corteva supplied 2,4-D to the merchant market throughout the POI.

²²² CR/PR at II-9, Table II-6.

²²³ CR/PR at Table II-10.

²²⁴ CR/PR at Table II-10.

Internal consumption accounted for a majority of the domestic industry's U.S. shipments, as discussed in section VII.B.1. above, as well as the U.S. shipments of responding importers of subject merchandise. Responding importers reported that internal consumption accounted for *** percent of U.S. shipments of subject imports in 2021, *** percent in 2022, and *** percent in 2023.²²⁵

The record indicates that companies that produce, sell, or import any of the in-scope 2,4-D forms and out-of-scope 2,4-D based formulated herbicide products in the U.S. market are required to first register each of their products with the EPA, identifying the product's intended labeled use, and that separate registrations are required for product and use application.²²⁶ The parties disagree on the extent to which the EPA registration process influences competition in the U.S. market, with Nufarm claiming that the process for registering a foreign supplier with the EPA is lengthy and cumbersome,²²⁷ and Corteva claiming that the process is not onerous.²²⁸ Both sides agree that Corteva has the sole EPA registration for selling 2,4-D based formulated herbicide products for over-the-top/post-emergence applications with Enlist seeds produced by Corteva that are resistant to such herbicide products.^{229 230}

Respondents also claim that Corteva's patents serve as an additional barrier to subject imports. According to Nufarm, no other formulator can currently seek or obtain the EPA approval that Corteva has for over-the-top/post-emergence applications of 2,4-D based herbicides with Enlist seeds because Corteva has an active patent covering the seeds.²³¹ Corteva submits that its patents only prevent Respondents from selling 2,4-D based herbicides into one specific use application, namely over-the-top, leaving them free to sell such herbicides for other uses in the U.S. market.²³² It also contends that patents covering 2,4-D based herbicides and their uses are common within the industry, with Nufarm and PBI-Gordon having

²²⁵ *Derived from* U.S. Importers' Questionnaire Responses. Importers which imported 2,4-D for their internal consumption did so in order to produce 2,4-D salts/esters and downstream herbicide products containing 2,4-D.

²²⁶ CR/PR at I-11, II-7; Conference Tr. at 93-94 (Garcia De Alba), 212 (Deck).

²²⁷ Nufarm's Postconfr. Br. at 16.

²²⁸ Petitioner's Postconfr. Br. at 38.

²²⁹ Petitioner's Postconfr. Br. at 39; Drexel's Postconfr. Br. at 20-21; Nufarm's Postconfr. Br. at 13-14; PBI-Gordon's Postconfr. Br. at 24.

²³⁰ The impact of the EPA regulatory process on competition within the U.S. market is discussed in section VII.E. below.

²³¹ Nufarm's Postconfr. Br. at 14.

²³² Petitioner's Postconfr. Br. at 39.

at least 26 claims relating to 9 patents on 2,4-D related inventions, and are not required to register either 2,4-D or 2,4-D based herbicides with the EPA.²³³

According to Drexel, Nufarm, and PBI-Gordon, Corteva's licensing agreements for their Enlist seeds restrict farmers' use of formulated herbicides to Corteva's Enlist 2,4-D herbicides.²³⁴ During the POI, *** percent of Corteva's commercial U.S. shipments were made from ***, with lead times averaging *** days.²³⁵ In contrast, U.S. importers sold *** percent of their commercial U.S. shipments from U.S. inventory, with lead times averaging *** days, and the remaining *** percent of their commercial U.S. shipments were produced to order, with lead times averaging *** days.²³⁶

The raw materials used to produce 2,4-D acid include chloroacetic acid, phenol, and sodium hydroxide (caustic soda).²³⁷ *** and three of seven responding importers reported that raw material prices have fluctuated up since January 1, 2021.²³⁸ Three of the remaining four importers reported that raw material prices have fluctuated down, and the other importer reported that there has been no change in raw material prices.²³⁹ One importer reported that raw material prices for acetic acid, monochloroacetic acid, phenol, and caustic soda prices increased from 2021 to 2022 and then declined from 2022 to 2023, and another importer reported that prices fluctuated up in 2022 and 2023 and have fluctuated down in 2024.²⁴⁰ *** reported that increasing raw material prices forced them to increase their sales prices.²⁴¹ Raw materials accounted for the largest share of the domestic industry's COGS for 2,4-D throughout the POI, declining as a share of Corteva's COGS from *** percent in 2021 to *** percent in 2022, before increasing to *** percent in 2023.²⁴²

In 2019, 2,4-D herbicide formulations imported under HTS statistical reporting numbers 3808.93.0500 and 3808.93.1500 from China became subject to a 25 percent *ad valorem* duty pursuant to section 301 of the Tariff Act of 1974 ("section 301 tariffs").²⁴³

²³³ CR/PR at II-11-12. We further discuss the influence of patented seed technologies on competition in the U.S. merchant market in section VII.E. below.

²³⁴ Drexel's Postconfr. Br. at 20-21; Nufarm's Postconfr. Br. at 13-14; PBI-Gordon's Postconfr. Br. at 24. The impact of seed licensing agreements on competition within the U.S. market is discussed in section VII.E. below.

²³⁵ CR/PR at II-9.

²³⁶ CR/PR at II-9.

²³⁷ CR/PR at V-1.

²³⁸ CR/PR at V-1.

²³⁹ CR/PR at V-1.

²⁴⁰ CR/PR at V-1.

²⁴¹ CR/PR at V-1.

²⁴² CR/PR at Tables VI-1, VI-7.

²⁴³ CR/PR at I-8.

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.”²⁴⁴

The volume of cumulated subject imports increased from 29.0 million pounds acid equivalent in 2021 to 69.1 million pounds acid equivalent in 2022, before declining to 36.0 million pounds acid equivalent in 2023, for an overall increase of 23.9 percent.²⁴⁵

Cumulated subject imports as a share of apparent U.S. consumption in the merchant market increased from *** percent in 2021 to *** percent in 2022, before decreasing to *** percent in 2023, for an overall increase of *** percentage points.²⁴⁶

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.²⁴⁷

²⁴⁴ 19 U.S.C. § 1677(7)(C)(i).

²⁴⁵ CR/PR at Tables IV-2, C-1, C-3.

²⁴⁶ CR/PR at Tables IV-9, C-3. Cumulated subject imports’ share of apparent U.S. consumption in the total market increased from *** percent in 2021 to *** percent in 2022, before decreasing to *** percent in 2023, for an overall increase of *** percentage points. *Id.* at Table C-1.

²⁴⁷ Drexel, comparing these investigations to *Certain Colored Synthetic Organic Oleoresinous Pigment Dispersions from India* (“*Pigment Dispersions*”), Inv. Nos. 701-TA-436 and 731-TA-1042 (Preliminary), USITC Pub. 3615 (July 2023), argues that the Commission has declined to find a significant increase in subject imports, either in absolute terms or relative to domestic production and consumption, when the Petitioner captively consumes almost all of its production of the domestic like product and removes its product from the merchant market by declining to supply long-time domestic customers. Drexel’s Postconfr. Br. at 22. As an initial matter, each Commission investigation is *sui generis*, even as to the same products and countries, so the Commission is not bound by its analyses from previous investigations. See *Nippon Steel Corp. v. United States*, 19 CIT 450, 454-55 (1995); *Citrosuco Paulista, S.A. v. United States*, 704 F. Supp. 1075, 1087-88 (CIT 1988); *Asociacion Colombiana de Exportadores de Flores v. United States*, 693 F. Supp. 1165, 1669 n.5 (CIT 1988). Furthermore, unlike in these investigations, the Commission did not apply the captive production provision in *Pigment Dispersions*. *Pigment Dispersions*, USITC Pub. 3615 at 7-8. In *Pigment Dispersions*, the Commission found that subject import volume was not significant because the bulk of the domestic like product and nearly all of the subject imports were captively consumed, limiting competition between them in both the total and merchant markets. *Id.* at 10-11. By contrast, subject imports in these investigations account for between *** and *** percent of apparent U.S. consumption in the merchant market during the POI, and the domestic like product accounted for between *** and *** percent of apparent U.S. consumption in the merchant market during the same period. CR/PR at Table C-3. Therefore, unlike in *Pigment Dispersions*, the record in these investigations indicates that there was substantial competition between subject imports and the domestic like product in the merchant market.

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.²⁴⁸

As discussed in section VII.B.4. above, we find that there is at least a moderate-to-high degree of substitutability between domestically produced 2,4-D and cumulated subject imports and that price is an important factor in purchasing decisions.

We have examined several sources of data in our underselling analysis, including pricing data, import purchase cost data, and purchasers' responses to the lost sales/lost revenue survey. With respect to pricing data, the Commission collected quarterly pricing data from U.S. producers and importers for the total quantity and f.o.b. values of four pricing products shipped to unrelated U.S. customers during the POI.²⁴⁹ U.S. producer Corteva and six U.S. importers provided usable pricing data for sales of the requested products, although not all firms reported pricing for all products for all quarters.²⁵⁰ The pricing data reported by these firms accounted for *** percent of Corteva's commercial U.S. shipments of 2,4-D, *** percent of importers' U.S. commercial shipments of subject imports from China, and *** percent of importers' U.S. commercial shipments of subject imports from India in 2023.²⁵¹

The pricing data show that subject imports undersold the domestic like product in 17 of 31 quarterly comparisons, involving *** pounds acid equivalent of subject imports, at underselling margins that ranged from *** percent to *** percent and averaged *** percent.²⁵² Subject imports oversold the domestic like product in the remaining 14 quarterly comparisons, involving *** pounds acid equivalent of subject imports, at overselling margins

²⁴⁸ 19 U.S.C. § 1677(7)(C)(ii).

²⁴⁹ CR/PR at V-4. The four pricing products are as follows:

Product 1.-- 2,4-D acid, Form: white to brown crystalline solid;

Product 2.-- 2,4-D salt, Form: white or cream-colored power;

Product 3.-- 2,4-D salt, Form: amber aqueous liquid;

Product 4.-- 2,4-D 2-ethylhexylester ("EHE"), Form: dark amber liquid. *Id.*

²⁵⁰ CR/PR at V-4. Pricing product data was not reported for products 2 and 3. *Id.* at n.7.

²⁵¹ CR/PR at V-4.

²⁵² CR/PR at Table V-9.

that ranged from *** percent to *** percent and averaged *** percent.²⁵³ Thus, subject imports undersold the domestic like product in 54.8 percent of quarterly comparisons, with *** percent of the reported sales volume of subject imports in the quarters showing underselling.²⁵⁴

The Commission received import purchase cost data for pricing products 1 and 4 from five firms that imported these products from subject sources for internal consumption.²⁵⁵ The purchase cost data reported by these firms accounted for *** percent of subject imports from China and *** percent of subject imports from India in 2023.²⁵⁶ The import purchase cost data show that the landed duty-paid (“LDP”) costs for subject imports were below the sales price for the domestic like product in 21 of 23 quarterly comparisons, or 91.3 percent of quarterly comparisons, at price-cost differentials ranging from *** percent to *** percent, and averaging *** percent.²⁵⁷ LDP costs for subject imports were higher than the sales price for the domestic like product in the remaining two quarterly comparisons, or 8.7 percent of quarterly comparisons, at price-cost differentials ranging from *** percent to *** percent, and averaging *** percent.²⁵⁸ There were *** pounds acid equivalent of 2,4-D from the subject countries in the quarters where subject imports had lower LDP costs than the sales price of the domestic like product, and there were *** pounds acid equivalent of 2,4-D from the subject countries in the quarters where subject imports had higher LDP costs.²⁵⁹ Thus, on a volume basis, *** percent of subject imports reported in the purchase cost data had a lower LDP cost than the price of the domestic like product.²⁶⁰

We recognize that the import purchase cost data may not reflect the total cost of importing and therefore requested that importers provide additional information regarding the costs and benefits of directly importing 2,4-D. While two of four importers reported incurring additional costs beyond the LDP costs associated with importing 2,4-D, only one of these importers quantified the additional costs it incurred, which it reported being *** percent beyond the LDP costs.²⁶¹ This same importer also reported that its cost of importing 2,4-D was

²⁵³ CR/PR at Table V-9.

²⁵⁴ *Calculated from* CR/PR at Table V-9.

²⁵⁵ CR/PR at V-11.

²⁵⁶ CR/PR at V-11.

²⁵⁷ CR/PR at Table V-11.

²⁵⁸ CR/PR at Table V-11.

²⁵⁹ CR/PR at Table V-11.

²⁶⁰ *Calculated from* CR/PR at Table V-11.

²⁶¹ CR/PR at V-11. Reported additional costs included duties, fees, ocean freight, Asian procurement team, added plant costs, and additional capital costs. *Id.*

*** percent higher than its cost of purchasing the domestic like product.²⁶² Another importer reported that importing 2,4-D rather than purchasing from a U.S. producer or U.S. importer saved it *** percent and *** percent, respectively, of the purchase cost.²⁶³ Thus, two importers reported no additional costs associated with direct importation and a third importer reported that even with the additional costs, the cost of purchasing subject imports was still lower than the cost of purchasing the domestic like product. Additionally, all five importers reported benefits from importing 2,4-D directly instead of purchasing from a U.S. producer or U.S. importer, including market cost, supply availability, and business sustainability.²⁶⁴ Three of these importers reported that they imported 2,4-D out of necessity, as there was no domestic supply of 2,4-D available to them, and one importer reported that it directly imported 2,4-D to avoid having an importer's EPA registration cost passed through to them in a purchase price.²⁶⁵

We have also considered U.S. purchaser responses regarding lost sales. Four of five purchasers reported purchasing subject imports instead of the domestic like product during the POI.²⁶⁶ Two of these purchasers reported that that subject imports were priced lower than the domestic like product, with one reporting that it had purchased *** pounds acid equivalent of subject imports in lieu of the domestic like product based on price.²⁶⁷ Two responding purchasers also reported that they purchased subject imports out of necessity due to the lack of availability of the domestic like product, specifically claiming that ***.²⁶⁸

Based on the at least moderate-to-high degree of substitutability between cumulated subject imports and the domestic like product, the importance of price in purchasing decisions, the pricing product and purchase cost data, and lost sales information, we find that cumulated subject imports significantly undersold the domestic like product during the POI. Based on the record of these preliminary phase investigations, we find that the significant underselling by subject imports resulted in a market share shift from the domestic industry to cumulated subject imports.²⁶⁹ We acknowledge reported supply constraints in the first half of the POI and

²⁶² CR/PR at V-12.

²⁶³ CR/PR at V-12.

²⁶⁴ CR/PR at V-12.

²⁶⁵ CR/PR at V-12.

²⁶⁶ CR/PR at Table V-16.

²⁶⁷ CR/PR at Table V-15. In addition to these two importers, ***, PBI-Gordon, in its post-conference brief, acknowledged that subject imports were priced lower than the domestic like product. PBI-Gordon's Postconfr. Br. at 17.

²⁶⁸ CR/PR at Table V-15.

²⁶⁹ CR/PR at Table C-3. In the merchant market, cumulated subject imports increased their market share by *** percentage points at the expense of the domestic industry over the POI. *Id.* In the total market, cumulated subject imports increased their market share by *** percentage points at the expense of the domestic industry over the POI. *Id.* at Table C-1.

the domestic industry's relatively high practical capacity utilization in 2021 and 2022. However, we observe that the domestic industry reported *** percent for its practical capacity utilization in 2023 and did not report any supply constraints in that year, as its production of 2,4-D declined by *** percent from 2021-2023 despite slightly higher apparent U.S. consumption.²⁷⁰ In any final phase of these investigations, we intend to investigate further the impact of any supply constraints during the POI.

We have also considered price trends. Domestic prices fluctuated over the POI but ended the period higher for the two pricing products for which data were provided. Between the first quarter of 2021 and the third quarter of 2023, prices for domestically produced product 1 increased irregularly by *** percent,²⁷¹ and prices for domestically produced product 4 increased irregularly by *** percent.²⁷² For pricing product 1, the only product for which subject import pricing data are available for the entire POI, prices of subject imports from China increased irregularly by *** from the first quarter of 2021 to the fourth quarter of 2024, and prices of subject imports from India fluctuated for an overall decrease of *** percent over the same period.²⁷³

We have also considered whether cumulated subject imports prevented price increases for domestically produced 2,4-D which otherwise would have occurred to a significant degree. The domestic industry's ratio of COGS to net sales for merchant market shipments increased from *** percent in 2021 to *** percent in 2022 and *** percent in 2023, as apparent U.S. consumption in the merchant market increased from 2021 to 2022 and then declined in 2023 to a level that was slightly higher than in 2021.²⁷⁴ The increase in the domestic industry's COGS-to-net-sales ratio was primarily driven by its net sales average unit values ("AUVs") increasing to a lesser degree than its unit COGS from 2021 to 2023.²⁷⁵ The domestic industry's unit COGS increased by \$*** per unit, or *** percent, over the POI, increasing from \$*** per

²⁷⁰ CR/PR at Table C-1.

²⁷¹ *Calculated from* Table V-3. The domestic pricing data reported for pricing product 1 in the fourth quarter of 2023 was an exceptional \$*** per thousand pounds acid equivalent, derived from a very small quantity of sales, and therefore excluded from the calculation. *Id.* Including the fourth quarter of 2023, domestic prices for product 1 increased by *** percent from the first quarter of 2021 and the fourth quarter of 2023. *Id.* at Table V-7.

²⁷² *Calculated from* Table V-4. *** domestic pricing data was reported for pricing product 4 in the fourth quarter of 2023. *Id.*

²⁷³ CR/PR at Tables V-3-4, V-7.

²⁷⁴ CR/PR at Table C-3. The domestic industry's ratio of COGS to net sales for total market sales increased from *** percent in 2021 to *** percent in 2022 and *** percent in 2023. *Id.* at Table C-1.

²⁷⁵ CR/PR at Tables VI-7-8.

unit in 2021 to \$*** per unit in 2021, before declining to \$*** per unit in 2023.²⁷⁶ Its net sales AUVs for merchant market shipments increased by \$*** per unit, or *** percent, over the same period, increasing from \$*** per unit in 2021 to \$*** per unit in 2022, before declining to \$*** per unit in 2023.²⁷⁷ Thus, Corteva experienced a cost-price squeeze as its per-unit costs increased by more than its net sales average unit value. We note that purchaser *** reported that Corteva had reduced its prices by an estimated *** percent to compete with lower-priced subject imports.²⁷⁸ Moreover, low-priced subject imports were the largest source of supply to the merchant market throughout the POI.²⁷⁹ Corteva's COGS-to-net-sales ratio for its merchant market sales exceeded *** percent in every year of the POI, and it had gross and operating *** for its merchant market sales throughout the POI.²⁸⁰ In light of the above, based on the record in the preliminary phase investigations, we find that the significant volumes of low-priced subject imports prevented domestic price increases which otherwise would have occurred to a significant degree.^{281 282}

²⁷⁶ CR/PR at Tables VI-7-8. Increasing per-unit other factory costs were the *** component of increasing unit COGS. *See id.* Corteva reported that *** for increases in other factory costs from 2021 to 2023. *Id.* at VI-17. However, the increases in Corteva's per-unit raw material and direct labor costs combined increased by more than the increase in its net sales unit value over the POI. *See id.* at Table VI-8.

²⁷⁷ CR/PR at Tables VI-7-8. The domestic industry's net sales AUVs for total market shipments increased from \$*** per unit in 2021 to \$*** per unit in 2022, before decreasing to \$*** per unit in 2023. *Id.* at Tables VI-12.

²⁷⁸ CR/PR at Table V-17. *** also reported that ***. *Id.* Three purchasers reported that the U.S. producer had not reduced prices in order to compete with lower-priced subject imports, and one reported that it did not know. *Id.*

²⁷⁹ CR/PR at Table C-3. We observe that the AUVs for nonsubject imports were substantially higher than the AUVs for subject imports throughout the POI. *See id.* at Tables IV-2, C-3.

²⁸⁰ CR/PR at Tables VI-7, C-3. In the total market, Corteva's COGS-to-net-sales ratio exceeded *** in those years. *Id.* at Tables VI-1, C-1.

²⁸¹ Drexel argues that an examination of Corteva's COGS-to-net-sales ratio is not a reliable indicator of whether Corteva experienced a cost-price squeeze, alleging that Corteva could have commanded higher prices had it not chosen to stop selling to the merchant market. Drexel's Postconfr. Br. at 36-37. We intend to further investigate this issue in any final phase investigations.

²⁸² For purposes of the preliminary phase of these investigations, Commissioner Karpel cannot conclude that subject imports did not suppress domestic prices to a significant degree. Although the domestic industry's ratio of COGS to net sales for merchant market shipments increased from *** percent in 2021 to *** percent in 2022 and *** percent in 2023, as the industry's total unit COGS increased from *** in 2021 to *** in 2022 before decreasing to *** in 2023, Commissioner Karpel observes that most of this deterioration was determined by decreases in the industry's net sales quantity over the period, which decreased from *** pounds in 2021 to *** pounds in 2022 and further to *** pounds in 2023. In Commissioner Karpel's view, these data appear to largely reflect the effect of the domestic industry's market share loss to subject imports rather than of subject imports preventing (Continued...)

In sum, based on the record of the preliminary phase of these investigations, we find that cumulated subject imports significantly undersold the domestic like product, gained market share at the expense of the domestic industry, and suppressed domestic prices to significant degree. Accordingly, we find that cumulated subject imports had significant adverse price effects.

E. Impact of the Subject Imports²⁸³

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 (“ROI”), 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.”²⁸⁴

The domestic industry’s performance declined during the POI according to most trade and financial measures, even though apparent U.S. consumption in the merchant market was slightly higher (** percent) in 2023 than in 2021. These declines were largely driven by declines in the domestic industry’s sales volume and market share, both when apparent U.S.

price increases which otherwise would have occurred to a significant degree. Further, although the industry was unable to fully pass on increases in its variable costs from 2021 to 2023, Commissioner Karpel observes that the industry was able to fully pass on the increase in variable costs from 2021 to 2022 with the increase in unit net sales AUVs exceeding the increase in unit variable costs by *** at a time when demand increased by *** percent and that the domestic industry was unable to fully pass on the increase in variable costs from 2022 to 2023 at a time when demand decreased by *** percent, which may have placed downward pressure on domestic prices in 2023. On the other hand, Commissioner Karpel observes the significant underselling and the particularly high COGS-to-net-sales ratio and operating *** throughout the POI. She intends to examine further in any final phase investigation the extent to which subject imports had price suppressing effects.

²⁸³ In its notice initiating the antidumping duty investigations, Commerce initiated the investigations based on estimated dumping margins of 127.21 percent for imports from China and 36.41 percent for imports from India. *2,4-Dichlorophenoxyacetic Acid from the People’s Republic of China and India: Initiation of Less-Than-Fair-Value Investigations*, 89 Fed. Reg. 34,200 (Apr. 30, 2024).

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

consumption in the merchant market increased from 2021 to 2022 (by *** percent) and when it returned to 2021 levels in 2023, and the industry's cost-price squeeze during the period.²⁸⁵

The domestic industry's practical capacity initially decreased from *** pound acid equivalent in 2021 to *** pounds acid equivalent in 2022 before increasing to *** pounds acid equivalent in 2023 a level *** percent higher than in 2021.²⁸⁶ The domestic industry's production quantity decreased by *** percent between 2021 and 2023, initially increasing from *** pounds acid equivalent in 2021 to *** pound acid equivalent in 2022 before decreasing to *** pounds acid equivalent in 2023.²⁸⁷ The industry's capacity utilization decreased by *** percentage points between 2021 and 2023, initially increasing from *** percent in 2021 to *** percent in 2022 before decreasing to *** percent in 2023.²⁸⁸

The domestic industry's number of PRWs was flat throughout the POI at ***.²⁸⁹ Hours worked increased by *** percent between 2021 and 2023, increasing from *** hours in 2021 to *** hours in 2022 and 2023.²⁹⁰ Wages paid increased by *** percent between 2021 and 2023, increasing from \$*** in 2021 to \$*** in 2022 and 2023.²⁹¹ Productivity (in pounds per hour) decreased by *** percent between 2021 and 2023, decreasing from *** pounds per hour in 2021 to *** pounds per hour in 2022 and *** pounds per hour in 2023.²⁹²

The domestic industry's U.S. shipments to the merchant market declined by *** percent from 2021 to 2023, decreasing from *** pounds acid equivalent in 2021 to *** pounds acid equivalent in 2022 and *** pounds acid equivalent in 2023.²⁹³ The industry's share of apparent U.S. consumption in the merchant market declined by *** percentage points between 2021 and 2023, decreasing from *** percent in 2021 to *** percent in 2022 and *** percent in 2023.²⁹⁴

²⁸⁵ CR/PR at Table C-3. In the merchant market, the domestic industry's COGS-to-net-sales ratio increased *** percentage points from 2021 to 2023. *Id.*

²⁸⁶ CR/PR at Tables III-4, C-1. The industry's installed overall capacity was constant at *** pounds acid equivalent during the POI. *Id.* at Table III-4.

²⁸⁷ CR/PR at Tables III-4, C-1.

²⁸⁸ CR/PR at Tables III-4, C-1.

²⁸⁹ CR/PR at Tables III-12, C-1.

²⁹⁰ CR/PR at Tables III-12, C-1.

²⁹¹ CR/PR at Tables III-12, C-1.

²⁹² CR/PR at Tables III-12, C-1.

²⁹³ CR/PR at Table C-3. The domestic industry's U.S. shipments to the total market declined by *** percent from 2021 to 2023, increasing from *** pounds acid equivalent in 2021 to *** pounds acid equivalent in 2022, before decreasing to *** pounds acid equivalent in 2023. *Id.* at Table C-1.

²⁹⁴ CR/PR at Table C-3. The domestic industry's share of apparent U.S. consumption in the total market declined by *** percentage points between 2021 and 2023, decreasing from *** percent in 2021 to *** percent in 2022 and *** percent in 2023. *Id.* at Table C-1.

The domestic industry's end-of-period inventories declined by *** percent between 2021 and 2023, decreasing from *** pounds acid equivalent in 2021 to *** pounds acid equivalent in 2022 and *** pounds acid equivalent in 2023.²⁹⁵ As a ratio to total shipments, the domestic industry's end-of-period inventories declined by *** percentage points, decreasing from *** percent in 2021 to *** percent in 2022 and *** percent in 2023.²⁹⁶

The domestic industry's financial indicators also deteriorated during the POI. The industry's net sales revenues for merchant market sales declined by *** percent between 2021 and 2023, decreasing from \$*** in 2021 to \$*** in 2022 and \$*** in 2023.²⁹⁷ The industry's gross profit for merchant market sales worsened between 2021 and 2023, decreasing from *** in 2021 to *** in 2022, before increasing to *** in 2023.²⁹⁸ The industry's operating income and net income for merchant market sales declined from *** in 2021 to *** in 2022, before increasing to *** in 2023.²⁹⁹ The domestic industry's ratio of operating income to net sales in the merchant market and net income margin for merchant market sales worsened between 2021 and 2023, decreasing from *** percent in 2021 to *** percent in 2022 and *** percent in 2023.³⁰⁰

The domestic industry's capital expenditures increased while its net assets and return on assets declined.³⁰¹ The industry's capital expenditures increased by *** percent between 2021 and 2023, increasing from \$*** in 2021 to \$*** in 2022, before decreasing to \$*** in 2023.³⁰² The domestic industry's net assets decreased by *** percent between 2021 and 2023,

²⁹⁵ CR/PR at Tables III-10, C-1.

²⁹⁶ CR/PR at Tables III-10, C-1.

²⁹⁷ CR/PR at Table C-3. The domestic industry's net sales revenues for total market sales declined by *** percent between 2021 and 2023, decreasing from \$*** in 2021 to \$*** in 2022 and \$*** in 2023. *Id.* at Table C-1.

²⁹⁸ CR/PR at Table C-3. The domestic industry's gross profit for total market sales worsened between 2021 and 2023, decreasing from *** in 2021 to *** in 2022 and *** in 2023. *Id.* at Table C-1.

²⁹⁹ CR/PR at Table C-3. The industry's operating income and net income for total market sales also worsened between 2021 and 2023, decreasing from *** in 2021 to *** in 2022 and *** in 2023. *Id.* at Table C-1.

³⁰⁰ CR/PR at Table C-3. The domestic industry's ratio of operating income to net sales and net income margin for total market sales worsened between 2021 and 2023, decreasing from *** percent in 2021 to *** percent in 2022 and *** percent in 2023. *Id.* at Table C-1.

³⁰¹ The domestic industry reported *** R&D expenses related to its 2,4-D production between 2021 and 2023. CR/PR at Table VI-11.

³⁰² CR/PR at Tables VI-11, C-1. Corteva's capital expenditures during the POI were reported to be for ***. *Id.* at Table VI-12.

declining from \$*** in 2021 to \$*** in 2022 and \$*** in 2023.³⁰³ The industry's return on assets declined from *** percent in 2021 to *** percent in 2022 and *** percent in 2023.³⁰⁴

Significant and increasing volumes of subject imports significantly undersold the domestic like product, gained market share at the expense of the domestic industry, and prevented domestic price increases which otherwise would have occurred to a significant degree, resulting in the domestic industry's production, shipments, and revenues being lower

³⁰³ CR/PR at Tables VI-11, C-1.

³⁰⁴ CR/PR at Table VI-11.

and its financial performance weaker than it otherwise would have been but for the presence of unfairly traded subject imports.^{305 306}

Both Nufarm and PBI-Gordon reported that Corteva discontinued sales of 2,4-D to them in 2022, and argue, along with Drexel, that Corteva stopped sales of 2,4-D to the merchant market to increase the internal consumption of its 2,4-D for the production of more profitable downstream formulated herbicide products, particularly its Enlist branded herbicide

³⁰⁵ Respondents raised several arguments regarding Corteva's reported financial performance during the POI.

Nufarm claims that Corteva ***, highlighting the profitability of Corteva's crop protection business. Nufarm's Postconfr. Br. at 32-33, Exh. 6. The Commission will verify Corteva's U.S. Producer questionnaire response in any final phase of these investigations.

Drexel argues that Corteva's internally consumed 2,4-D should be valued according to its proportional share of the sales prices commanded by Enlist 2,4-D herbicides in the downstream formulation market, rather than the AUVs of its commercial shipments of 2,4-D to the merchant market, to account for the significantly higher profit margin Corteva can allegedly obtain by captively consuming 2,4-D in the production of downstream formulated herbicide products. Drexel's Postconfr. Br. at 43. The Commission collected data on the cost share of the inputs used to produce downstream herbicide products by value, and specifically ***, as discussed in section VII.B.1. above, but did not collect data on the price of *** in the downstream formulated herbicide market. We invite the parties to address this issue in their comments on the draft questionnaires in any final phase of the investigations.

Drexel also argues that Corteva's net sales value is primarily constructed from the valuation of its internal consumption of 2,4-D, which has no actual commercial transaction value. Drexel's Postconfr. Br. at 42. Similarly, PBI-Gordon argues that Corteva's overall revenues and profitability were impacted by the relatively lower AUVs reported for its internal consumption and swap sales as compared to its commercial sales of 2,4-D. PBI-Gordon's Postconfr. Br. at 30. Having found the captive production applicable, we focus on the domestic industry's financial performance in the merchant market and attach less weight to the industry's performance in the total market, including internal consumption. Furthermore, Corteva certified that it valued its internal consumption at fair market value, consistent with the questionnaire instructions. Finally, we note that while the AUVs for Corteva's swap transactions, at \$*** in 2021, \$*** in 2022, and \$*** in 2023, were lower than the AUVs for its commercial sales, at \$*** in 2021, \$*** in 2022, and \$*** in 2023, they were still higher than the AUVs of subject imports. CR/PR at Tables IV-2, VI-1, C-3.

PBI-Gordon argues that Corteva reported a substantial and unexplained increase in other factory costs in 2022 and 2023 relative to 2021. PBI-Gordon's Postconfr. Br. at 31-32. While the record does indicate that Corteva's other factory costs increased from 2021 to 2023, with unit other factory costs increasing from \$*** in 2021 to \$*** in 2022, before decreasing to \$*** in 2023, Corteva reported that *** for the increase. CR/PR at VI-17, Table VI-7. Given the limited information in the record concerning *** during the POI, we intend to explore this issue further in any final phase of the investigations.

³⁰⁶ As noted, above in section VII.D., for purposes of the preliminary phase of these investigations, Commissioner Karpel cannot conclude that subject imports did not suppress domestic prices to a significant degree.

products.³⁰⁷ The documents provided by Nufarm indicate that ***.³⁰⁸ The documents provided by PBI-Gordon indicate that ***.³⁰⁹ However, the record shows that Corteva continued sales of 2,4-D to the merchant market in 2023, accounting for *** percent of apparent U.S. consumption in the merchant market that year,³¹⁰ and reported sales to Nufarm and PBI-Gordon in 2023.³¹¹ We also note that Corteva's capacity utilization declined from *** percent in 2021 to *** percent in 2023, despite apparent U.S. consumption being slightly higher in 2023 than in 2021, indicating that Corteva had significant unused capacity with which it could have increased its shipments to the merchant market in 2023, irrespective of the *** percent increase in its internal consumption over the period.³¹² Moreover, Corteva's production of 2,4-D was *** percent lower in 2023 than in 2021, despite reporting that the supply constraints it experienced early in the POI were resolved by 2023, even as apparent U.S. consumption was slightly higher in 2023 than in 2021.³¹³ In any final phase of the investigations, we intend to further investigate the extent to which Corteva limited sales to the merchant market in favor of internal consumption.

Respondents also argue that subject imports could not have caused the domestic industry's declining performance because several factors served to limit competition between the domestic like product and subject imports during the POI. Specifically, Drexel, Nufarm, and PBI-Gordon argue that Petitioner's sales of 2,4-D formulated crop protection products are insulated by law, including patents and licensing agreements, from competition with subject imports and generic herbicide formulas, including those produced from subject imports by the

³⁰⁷ Drexel's Postconfr. Br. at 16, 26, 36-37, 43; Nufarm's Postconfr. Br. at 20-21; PBI-Gordon's Postconfr. Br. at 25-27; Conference Tr. at 123-125 (Wolf), 115-117 (Deck). U.S. importer *** also reported that Corteva was unwilling to sell them 2,4-D in the U.S. market. CR/PR at II-11, V-11-12.

Similarly, Atul claims that Corteva's withdrawal from the merchant market coincided with the launch of Corteva's Enlist products, submitting the date of Corteva's EPA approval for its Enlist branded herbicide products as January 2022. Atul's Postconfr. Br. at 3. There is limited information about the launch and/or approval of Corteva's Enlist branded herbicide products on the record, with the only other references being a *Wall Street Journal* article mentioning that Corteva launched Enlist E3 products in 2019 and a statement from a Nufarm representative at the conference saying that Enlist seeds were launched in 2019. PBI's Postconfr. Br. at Exh. 8; Conference Tr. at 118 (Deck). The Commission intends to further explore this issue in any final phase of the investigations.

³⁰⁸ Nufarm's Postconfr. Br. at Exh. 3.

³⁰⁹ PBI-Gordon's Postconfr. Br. at Exh. 4, Attach. RH-8.

³¹⁰ CR/PR at Tables IV-8-9.

³¹¹ Corteva's U.S. Producer Questionnaire Response, EDIS Doc. 817263 (Apr. 1, 2024) at IV-23.

³¹² CR/PR at III-10, Table III-7.

³¹³ CR/PR at Tables III-3-5.

converters.³¹⁴ Drexel and Nufarm also argue that the significant internal consumption of 2,4-D by both Corteva and U.S. importers limits competition between the domestic like product and subject imports in the merchant market.³¹⁵ Finally, Nufarm argues that the EPA registration process required for importing and selling 2,4-D and formulated 2,4-D herbicide products limits competition between the domestic like product and subject imports.³¹⁶ As discussed in sections VII.B.4., C, and D above, we have found at least a moderate-to-high degree of substitutability between domestic and subject 2,4-D and that there is competition between subject imports and the domestic like product in the merchant market, as reflected by both the pricing and purchase cost data and information on lost sales and revenues.³¹⁷ In any final phase of the investigations, we intend to further investigate any factors that may serve to limit competition between subject imports and the domestic like product.

We have also considered whether there were other factors, including nonsubject imports and demand, that may have had an impact on the domestic industry to ensure that we are not attributing injury from such other factors to subject merchandise. Nonsubject imports were the smallest source of supply to the U.S. merchant market throughout the POI, while

³¹⁴ Drexel's Postconfr. Br. at 20-21; Nufarm's Postconfr. Br. at 13; PBI-Gordon's Postconfr. Br. at 23, 25. We note that patents and licensing agreements that respondents assert serve to limit competition in the market for out-of-scope downstream 2,4-D based herbicides and crop seeds would not necessarily limit competition between subject imports and the domestically produced 2,4-D in the merchant market for 2,4-D. Furthermore, there are uses for formulated 2,4-D herbicide products other than over-the-top, including two other agriculture application seasons, see section VII.B.2., and ones that are not covered by patented seeds or agricultural licensing agreements, such as golf courses, residential lawns, pastures, aquatic sites, forestry, and roadways. CR/PR at I-9; Conference Tr. at 22-23, 54 (Moulin), 121, 165, 183 (Wolf).

³¹⁵ Drexel's Postconfr. Br. at 16, 23-24; Nufarm's Postconfr. Br. at 12-13.

³¹⁶ Nufarm's Postconfr. Br. at 16.

³¹⁷ Drexel also argues that Corteva's declining profitability tracks its declining swap shipments and export volumes more closely than any increases in subject import volumes, suggesting in its view that subject imports could not account for the trend. Drexel's Postconfr. Br. at 42-43. As discussed above, however, we have found that the significant and increasing volume of low-priced subject imports suppressed prices for the domestic like product to a significant degree and gained market share from the domestic industry, reducing the industry's output and financial performance relative to what it would have been in the absence of subject imports. Indeed, the purchaser with whom Corteva has a swap agreement, ***, reported that Corteva had to reduce its prices by an estimated *** percent to compete with lower-priced subject imports. CR/PR at Table V-17. We also note that Corteva's merchant market operating income margin declined by *** percentage points from 2021 to 2022, when subject import volume increased by 138.2 percent, but only by *** percentage points from 2022 to 2023, when subject import volume declined by 48.0 percent. *Id.* at Tables C-1, C-3. By contrast, there is no clear correlation between the industry's financial performance and its swaps and export shipments, which declined by *** percent and *** percent, respectively, from 2021 to 2022 and by *** percent and *** percent, respectively, from 2022 to 2023. *Id.*

increasing their share of apparent U.S. consumption from *** percent in 2021 to *** percent in 2022 and *** percent in 2023.³¹⁸ In arguing that nonsubject imports caused whatever injury Corteva may have suffered during the POI, PBI-Gordon submits that nonsubject import volume increased at an exponentially higher rate than subject import volume during the POI.³¹⁹ Although nonsubject imports may have increased at a higher rate than subject imports during the POI, they started from a much lower base and remained much lower than subject imports in terms of both volume and merchant market share throughout the POI, and they do not explain the injury to the domestic industry resulting from the market share shift from the domestic industry to unfairly traded subject imports.³²⁰ Furthermore, as previously discussed, the AUVs of nonsubject imports were much higher than those of subject imports, as well as the domestic industry's U.S. shipments, throughout the POI.³²¹ Additionally, Corteva's U.S. shipments and U.S. importers' U.S. shipments of subject imports were *** in acid form in 2023, while the *** of importers' U.S. shipments of nonsubject imports were in ester form.³²² Accordingly, nonsubject imports cannot explain the significant price suppression we have attributed to the significant and increasing volumes of low-priced cumulated subject imports.

Drexel argues that Corteva's financial performance is explained by demand trends, not subject imports, with purchases and inventories increasing from 2021 to 2022 as purchasers stockpiled 2,4-D in anticipation of shortages during the COVID-19 pandemic, before declining in 2023 as purchasers worked off their inventories.³²³ Apparent U.S. consumption in the merchant market increased by *** percent from 2021 to 2022 and then decreased by ***

³¹⁸ CR/PR at Table C-3. Nonsubject imports' share of apparent U.S. consumption in the total market increased from *** percent in 2021 to *** percent in 2022 and *** percent in 2023. *Id.* at Table C-1.

³¹⁹ PBI-Gordon's Postconfr. Br. at 16.

³²⁰ See CR/PR at Table C-3. The volume of nonsubject imports to the merchant market increased from 548,000 pounds acid equivalent to 1.2 million pounds acid equivalent in 2022 and 8.5 million pounds acid equivalent in 2023. *Id.* In comparison, the volume of subject imports to the merchant market increased from 29.0 million pounds acid equivalent in 2021 to 69.1 million pounds acid equivalent in 2022, before decreasing to 36.0 million pounds acid equivalent in 2023. *Id.* Subject imports' share of apparent U.S. consumption in the merchant market ranged from *** percent to *** percent. *Id.*

³²¹ CR/PR at Table C-3. The AUVs of nonsubject imports were \$3.96 in 2021, \$4.23 in 2022, and \$3.49 in 2023. *Id.* The AUVs of subject imports were \$1.30 in 2021, \$2.17 in 2022, and \$1.42 in 2023. *Id.* The AUVs of Corteva's shipments to merchant market were \$*** in 2021, \$*** in 2022, and \$*** in 2023. *Id.*

³²² See CR/PR at Table IV-4.

³²³ Drexel's Postconfr. Br. at 44.

percent from 2022 to 2023, for an overall increase of *** percent during the POI.³²⁴ Contrary to Drexel's argument, Corteva's financial performance worsened from 2021 to 2022 even as apparent U.S. consumption increased sharply, and continued to deteriorate from 2022 to 2023 as apparent U.S. consumption declined to a level that remained slightly higher than in 2021.³²⁵ Demand trends also do not explain the market share shift from the domestic industry to cumulated subject imports previously discussed. Consequently, we find that merchant market demand trends cannot explain the domestic industry's declining output and financial performance during the POI.³²⁶

Drexel and NCGA argue that subject imports increased from 2021 to 2022 because Corteva's 2,4-D production was insufficient to supply increased demand for 2,4-D in the U.S. market.³²⁷ Similarly, Drexel and Atul argue that the increase in subject imports during the POI can be attributed to the COVID-19 pandemic and U.S. weather events that increased purchases at a time when the domestic industry was unwilling to supply the U.S. market.^{328 329} While Corteva did report ***, and had high capacity utilization rates in 2021 and 2022, at *** and *** percent, respectively, Corteva did not report any supply constraints in 2023 and its capacity utilization rate declined to *** percent in 2023 as its production quantity declined sharply, indicating that it had significant excess capacity that could have been used to supply additional volumes of 2,4-D to the U.S. market that year.³³⁰ Finally, as discussed in section VII.D. above, the record shows that subject imports significantly undersold and suppressed domestic prices

³²⁴ CR/PR at Table C-3. Apparent U.S. consumption in the total market increased by *** percent from 2021 to 2022 and then decreased by *** percent from 2022 to 2023, for an overall increase of *** percent during the POI. *Id.* at Table C-1.

³²⁵ See CR/PR at Table C-3.

³²⁶ As discussed in section VII.D., Commissioner Karpel observes that although the domestic industry was unable to fully pass on increases in its variable costs over the full POI, the industry was able to fully pass on the increase in its variable cost from 2021 to 2022, when apparent U.S. consumption increased by *** percent, but was unable to fully pass on the increase in its variable cost from 2022 to 2023, when apparent U.S. consumption decreased by *** percent and may have placed downward pressure on domestic prices. Commissioner Karpel intends to examine further in any final phase investigations the impact of demand trends on the domestic industry performance.

³²⁷ Drexel's Postconfr. Br. at 32; NCGA's Postconfr. Br. at 4.

³²⁸ Drexel's Postconfr. Br. at 31-32; Atul's Postconfr. Br. at 5-6.

³²⁹ NCGA also argues that if subject imports had not been in the U.S. market during the POI, Corteva's unwillingness to sell to certain purchasers would have created shortages, which, in turn, would have harmed farmers. NCGA's Postconfr. Br. at 3. We note that the statute directs the Commission to make its determinations based on the impact of subject imports on the domestic industry, defined as domestic producers as a whole of the domestic like product, and does not require the Commission to consider any beneficial effects they may have on downstream markets. See 19 U.S.C. §§ 1671b(a), 1673b(a), 1677(4)(A); see also *Pigment Dispersions*, USITC Pub. 3615 at 15-16.

³³⁰ CR/PR at Tables III-2-5.

during the POI, which cannot be explained by the COVID-19 pandemic or U.S. weather events, which increased demand for 2,4-D in the U.S. market from 2021 to 2022 and should have therefore enabled the domestic industry to increase its prices in line with its increased costs during the period.³³¹

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

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 subject imports of 2,4-D from China and India that are allegedly sold in the United States at less than fair value and subsidized by the governments of China and India.

³³¹ Commissioner Karpel does not join this sentence. She agrees to the extent there were supply constraints, those would not explain any price suppressive effects of subject imports during the POI. However, as discussed in section VII.D. above, reported supply constraints occurred in 2021 and 2022 and the large increase in demand occurred in 2022 when domestic producers were able to fully pass on the increase in variable costs. Commissioner Karpel intends to further investigate the extent to which subject imports prevented price increases that otherwise would have occurred during the POI.

Part I: Introduction

Background

These investigations result from petitions filed with the U.S. Department of Commerce (“Commerce”) and the U.S. International Trade Commission (“USITC” or “Commission”) by Corteva Agriscience LLC (Indianapolis, Indiana) on March 14, 2024, 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 2,4-Dichlorophenoxyacetic acid (“2,4-D”)¹ from China and India. Table I-1 presents information relating to the background of these investigations.^{2 3}

Table I-1

2,4-D: Information relating to the background and schedule of this proceeding

Effective date	Action
March 14, 2024	Petitions filed with Commerce and the Commission; institution of the Commission investigations (89 FR 19876, March 20, 2024)
April 3, 2024	Commerce’s notice of extension of the deadline for determining the adequacy of petitions (89 FR 24431, April 8, 2024)
April 4, 2024	Commission’s conference
April 11, 2024	Commission’s revised schedule (89 FR 27453, April 17, 2024)
April 23, 2024	Commerce’s notices of initiation (89 FR 34200 and 34205, April 30, 2024)
May 17, 2024	Commission’s vote
May 20, 2024	Commission’s determinations
May 28, 2024	Commission’s views

¹ See the section entitled “The subject merchandise” in Part I of this report for a complete description of the merchandise subject to 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 I of this report presents information on the subject merchandise, alleged subsidy and dumping margins, and domestic like product. Part II of this report presents information on conditions of competition and other relevant economic factors. Part III presents information on the condition of the U.S. industry, including data on capacity, production, shipments, inventories, and employment. Parts IV and V present the volume of subject imports and pricing of domestic and imported products, respectively. Part VI presents information on the financial experience of the U.S. producer. Part VII presents the statutory requirements and information obtained for use in the Commission's consideration of the question of threat of material injury as well as information regarding nonsubject countries.

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

Market summary

2,4-D is an herbicide, and it has action against a variety of broadleaf weeds, but not grasses. It is used in many places including turf, lawns, rights-of-way, aquatic sites, forestry sites, and a variety of field, fruit, and vegetable crops. The sole U.S. producer of 2,4-D in acid form is Corteva. Four firms that convert 2,4-D acid into derivative products (i.e., convert 2,4-D acid into 2,4-D salts and/or esters) also submitted U.S. producer questionnaire responses and are referred to throughout this report as “U.S. converters” (***).⁶ Leading producers of 2,4-D outside the United States include *** of China and *** of India. The leading U.S. importers of 2,4-D from China are ***. The leading importers of 2,4-D from India are ***. Leading importers of 2,4-D from nonsubject countries (primarily Mexico, Australia, and Austria) include ***. U.S. purchasers of 2,4-D are firms that purchase 2,4-D and sell synthesized or formulated 2,4-D products as retailers, distribute 2,4-D salts or esters from synthesized 2,4-D acids, or use 2,4-D to make a wide variety of downstream products such as agricultural herbicide or weed killer. Leading purchasers include ***.

Apparent U.S. consumption for the total market for 2,4-D was approximately *** pounds (\$***) in 2023. U.S. producers’ total U.S. shipments of 2,4-D totaled approximately *** pounds (\$***) in 2023 and accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value.

Apparent U.S. consumption of 2,4-D limited to U.S. commercial sales totaled approximately *** pounds (\$***) in 2023. U.S. producers’ U.S. commercial shipments of 2,4-D totaled approximately *** pounds (\$***) in 2023 and accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value.

⁶ Corteva also converts 2,4-D acid into derivative products. All five firms also formulate 2,4-D derivative products into formulated herbicide products.

Apparent U.S. consumption of 2,4-D for the market limited to U.S. commercial and swap shipments totaled approximately *** pounds (\$***) in 2023. U.S. producers' U.S. commercial and swap shipments of 2,4-D totaled *** pounds (\$***) in 2023 and accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value.

U.S. imports from subject sources totaled approximately 36.0 million pounds (\$50.9 million) in 2023 and accounted for *** percent of total apparent U.S. consumption by quantity (*** percent by value), *** percent of apparent U.S. consumption limited to U.S. commercial sales by quantity (*** percent by value), and *** percent of apparent U.S. consumption limited to U.S. commercial and swap sales by quantity (*** percent by value).

U.S. imports from nonsubject sources totaled approximately 8.5 million pounds (\$29.6 million) in 2023 and accounted for *** percent of apparent U.S. consumption of the total market by quantity (*** percent by value), *** percent of apparent U.S. consumption limited to U.S. commercial sales by quantity (*** percent by value), and *** percent of apparent U.S. consumption limited to U.S. commercial and swap sales by quantity (*** percent by value).⁷

Summary data and data sources

A summary of data collected in these investigations is presented in appendix C, table C-1 for the total market, table C-2 for the market limited to U.S. commercial sales, and table C-3 for the market limited to commercial and swap sales. U.S. industry data are based on the questionnaire response of one firm that accounted for all known U.S. production of 2,4-D in acid form during 2023. Additionally, four firms that convert 2,4-D acid into derivative products ("U.S. converters") also submitted U.S. producer questionnaire responses. Part III and tables C-1 through C-3 in appendix C present U.S. industry data on the sole U.S. producer of 2,4-D acid, while information on the U.S. industry that also includes data from the four U.S. converters is presented in tables C-4 through C-6 in appendix C and appendices D, E, and F. U.S. imports are based on official import statistics.

⁷ These apparent U.S. consumption figures only include data from the sole U.S. producer of 2,4-D acid, Corteva. Apparent U.S. consumption and shares tables that also include data from the U.S. converters are presented in appendix D.

Previous and related investigations

2,4-D has not been the subject of any prior countervailing or antidumping duty investigations in the United States. There has been one antidumping investigation on another agricultural chemical active ingredient: Glyphosate from China (Inv. No. 731-TA-1178); however, the petition was withdrawn in that proceeding before a preliminary determination was made.⁸ Additionally, there is one order in place on furfuryl alcohol, which can be used as a precursor chemical in the production of pesticides (Furfuryl Alcohol from China; Inv. No. 731-TA-703).

Nature and extent of alleged subsidies and sales at LTFV

Alleged subsidies

On April 30, 2024, Commerce published a notice in the Federal Register of the initiation of its countervailing duty investigations on 2,4-D from China and India.⁹

Alleged sales at LTFV

On April 30, 2024, Commerce published a notice in the Federal Register of the initiation of its antidumping duty investigations on 2,4-D from China and India.¹⁰ Commerce has initiated antidumping duty investigations based on estimated dumping margins of 127.21 percent for 2,4-D from China and 36.41 percent for 2,4-D from India.

⁸ 75 FR 24969, May 6, 2010.

⁹ For further information on the alleged subsidy programs see Commerce's notice of initiation and related CVD initiation checklists. 89 FR 34205, April 30, 2024.

¹⁰ 89 FR 34200, April 30, 2024.

The subject merchandise

Commerce's scope

In the current proceeding, Commerce has defined the scope as follows:¹¹

The merchandise covered by these investigations is 2,4-dichlorophenoxyacetic acid (2,4-D) and its derivative products, including salt and ester forms of 2,4-D. 2,4-D has the Chemical Abstracts Service (CAS) registry number of 94-75-7 and the chemical formula C₈H₆Cl₂O₃.

Salt and ester forms of 2,4-D include 2,4-D sodium salt (CAS 2702-72-9), 2,4-D diethanolamine salt (CAS 5742-19-8), 2,4-D dimethyl amine salt (CAS 2008-39-1), 2,4-D isopropylamine salt (CAS 5742-17-6), 2,4-D tri-isopropanolamine salt (CAS 3234180-3), 2,4-D choline salt (CAS 1048373-72-3), 2,4-D butoxyethyl ester (CAS 1929-733), 2,4-D 2-ethylhexylester (CAS 1928-43-4), and 2,4-D isopropylester (CAS 94-11-1). All 2,4-D, as well as the salt and ester forms of 2,4-D, is covered by the scope irrespective of purity, particle size, or physical form.

The conversion of a 2,4-D salt or ester from 2,4-D acid, or the formulation of nonsubject merchandise with the subject 2,4-D, its salts, and its esters in the country of manufacture or in a third country does not remove the subject 2,4-D, its salts, or its esters from the scope. For any such formulations, only the 2,4-D, 2,4-D salt, and 2,4-D ester components of the mixture is covered by the scope of the investigations. Formulations of 2,4-D are products that are registered for end-use applications with the Environmental Protection Agency and contain a dispersion agent.

¹¹ 89 FR 34200 and 34205, April 30, 2024.

Tariff treatment

Based upon the scope set forth by Commerce, information available to the Commission indicates that the merchandise subject to these investigations are imported under 2918.99.2010 of the Harmonized Tariff Schedule of the United States (“HTS”). Other merchandise subject to the current scope, formulations, may be imported under 3808.93.0500 and 3808.93.1500. The 2024 general rate of duty is 6.5 percent ad valorem for HTS subheadings 2918.99.20 and 3808.93.15 and free for HTS subheading 3808.93.05.¹² Decisions on the tariff classification and treatment of imported goods are within the authority of U.S. Customs and Border Protection.

In 2019, 2,4-D formulations imported under 3808.93.0500 and 3808.93.1500 originating in China became subject to an additional 25 percent ad valorem duty under Section 301 of the Trade Act of 1974.¹³ 2,4-D that is not formulated and imported under 2918.99.2010 is not subject to Section 301 additional duties.

¹² USITC, HTSUS (2024) Revision 1, USITC Publication 5491, January 2024, pp. 29-66, 38-10.

¹³ Effective September 24, 2018, the additional duty rate was 10 percent ad valorem and on January 1, 2019, the rate was increased to 25 percent ad valorem. 83 FR 47974, September 21, 2018. See also HTS heading 9903.88.03 and U.S. notes 20(e) and 20(f) to subchapter III of chapter 99 and related tariff provisions for this duty treatment. USITC, HTSUS (2024) Revision 1, USITC Publication 5491, January 2024, pp. 38-10, 99-III-27 – 99-III-51. There were certain Section 301 exclusions granted for products under 9903.88.03 that are currently in effect, but none of them are for 2,4-D. See U.S. note 20(e) and 20(f). USITC, HTSUS (2024) Revision 1, USITC Publication 5491, January 2024.

The product

Description and applications

2,4-D is an herbicide, and it has action against a variety of broadleaf weeds, but not grasses.¹⁴ It is used in many places including turf, lawns, rights-of-way, aquatic sites, forestry sites, and a variety of field, fruit, and vegetable crops.¹⁵ It was first used in the United States in the 1940s and is registered for use on pastures and rangelands, residential lawns, roadways, aquatic sites, croplands, and forestry applications.^{16 17}

In terms of the mechanism of action of the herbicide, 2,4-D is a synthetic auxin and growth regulator. A synthetic auxin is a type of herbicide active ingredient that mimics auxin, a plant hormone that regulates many aspects of growth. Synthetic auxin herbicides bind to hormone receptors in plant cells and cause a chain of events within the plant that leads to rapid and uncontrolled growth. These herbicides specifically cause vascular tissue cells that carry water and nutrients to divide and grow at such a rate as to cause stem curl-over, leaf withering, and eventual plant death.¹⁸

2,4-D must be formulated to readily disperse upon application and to suitably mix with water. Accordingly, it is converted into various derivative forms, including salts and esters. Products containing 2,4-D derivatives, like its salt and ester forms, are blended with other active ingredients, chemicals and/or water to create end-use crop protection products. Over 1,500 herbicide products contain 2,4-D as an active ingredient. Products containing 2,4-D may come in the form of liquids (concentrated or ready-to-use), dusts, or granules.¹⁹

¹⁴ An herbicide is an agent, usually chemical, for killing or inhibiting the growth of unwanted plants, such as residential or agricultural weeds and invasive species. Britannica, "Herbicide," accessed April 30, 2024, <https://www.britannica.com/science/herbicide>.

¹⁵ Environmental Protection Agency, "2,4-D," February 14, 2024 update, <https://www.epa.gov/ingredients-used-pesticide-products/24-d#:~:text=2%2C4%2DD%20is%20a,field%2C%20fruit%20and%20vegetable%20crops>.

¹⁶ National Pesticide Information Center, "2,4-D," accessed April 29, 2024, <http://npic.orst.edu/factsheets/24Dgen.html>.

¹⁷ Petition, p. 6.

¹⁸ Petition, p. 6; Schulz and Segobye, "2,4-D transport and herbicide resistance in weeds," *Journal of Experimental Botany*, May 28, 2016, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4892745/#:~:text=The%20herbicidal%20mechanism%20of%20action,of%20auxin%20responses%20in%20plants>.

¹⁹ Petition, p. 6.

Manufacturing processes

2,4-D is synthesized two ways. The first method is chloroxidizing phenol with chlorine and then condensation with chloroacetic acid. The second method is condensation that is then followed by the chlorination process. Corteva uses only the first method, and the manufacturers in China use both methods.²⁰ Raw materials used in Corteva's process include phenol, chlorine, and 2,4-dichlorophenol.²¹

Once the 2,4-D is produced, it is most commonly converted into an amine salt or ester. Amine salts are made by reacting amines with strong acids.²² Esters are formed when the 2,4-D acid reacts with an alcohol.²³ The salt or ester forms of 2,4-D are selected due to the desired end use application. Generally, 2,4-D esters have higher vapor pressures than 2,4-D amine salts. Higher vapor pressures result in increased volatilization. Amine salts are generally less volatile than esters. Amine derivatives of 2,4-D are therefore typically used in landscape settings and scenarios when drift is a primary concern. Ester derivatives, on the other hand, are typically more active on weeds in comparison to amine salts. Plants are more likely to quickly absorb esters compared to salts, and this may be the desired property.²⁴ There are nine derivative forms of 2,4-D that are currently on the U.S. market, with dimethyl-amine salt ("DMA") and 2-ethylhexyl ester (2-EH) accounting for approximately 90-95 percent of global 2,4-D use.²⁵

²⁰ It was unknown which method the producers in India were using. Conference transcript, pp. 76-78 (Garcia de Alba).

²¹ Conference transcript, pp. 17, 70 (Garcia de Alba).

²² An amine is any member of a family of nitrogen-containing organic compounds that is derived from ammonia (NH₃).

²³ Petition, p. 7. An ester includes any of a class of organic compounds that react with water to produce alcohols and organic or inorganic acids.

²⁴ Petition, p. 8.

²⁵ Petition, p. 7.

Domestic like product issues

The petitioner proposes that the Commission should define the domestic like product to be coextensive with the scope.²⁶ Respondents Drexel, Nufarm, and PBI-Gordon do not disagree that the Commission should define the domestic like product to be co-extensive with the scope of the investigations.²⁷

Respondent Atul Ltd. and Atul USA (“Atul”) argued in its postconference brief that salt and ester derivatives of 2,4-D acid (referred to by Atul as “in-scope formulations”) should be considered a separate distinct domestic like product from 2,4-D acid. Atul made the arguments below relating to the Commission’s semifinished like product analysis.

Uses

According to Atul, “...salts and ester derivatives of 2,4-D acid are end-use products for field application. On the other hand, 2,4-D acid is used for the synthesis of a variety of formulations, including formulations not covered by the product scope, such as blended formulations. These formulations are admixtures of different kinds of herbicides and active ingredients meant to provide broad coverage and have been excluded from the present product scope. As stated in the petition, over 1,500 products containing 2,4-D acid are on the U.S. market. However, only nine derivatives are included in the product scope. This demonstrates the independent usage of acid outside of synthesis of in-scope formulations. The present scope implies that about 1,490 out-of-scope products are different products, while 9 products are same product as acid.”²⁸

Markets

According to Atul, “Separate markets exist for acid and in-scope formulations. Acid, a technical grade product, is sold to formulators (of about 1,500 different formulations) on the merchant market following a B2B model. On the other hand, in-scope formulations are for end-use and may be sold on B2B or B2C basis. Further, different licenses are required for operating in each market; sale of acid and sale of formulations require different EPA registrations.”²⁹

²⁶ Petition, pp. 11-16; Conference transcript p. 30 (Cannistra).

²⁷ Conference transcript, p. 147 (Okun, Porter, Emerson); Drexel postconference brief, April 18, 2024, pp. 6-7; Nufarm postconference brief, April 18, 2024, p. 4; and PBI-Gordon postconference brief, April 18, 2024, p. 4.

²⁸ Atul postconference brief, April 18, 2024, p. 1.

²⁹ Atul postconference brief, April 18, 2024, pp. 1-2.

Characteristics and functions

According to Atul, “Acid is the active ingredient and cannot be used in and of itself. On the other hand, in-scope formulations function as herbicides for control of broadleaf weeds. Similarly, out-of-scope formulations also function as herbicides. No justification has been given to differentiate in-scope and out-of-scope formulations to such as extent that one set of formulations (in-scope) have been presented as same as acid (i.e., one like product), while other set of formulations (out-of-scope) have been presented as different from acid (i.e., distinct like products).”³⁰

Value

According to Atul, “Acid, being a technical product, has a lower value than in-scope formulations. In-scope and out-of-scope formulations cannot be treated differently on the grounds of price and value.”³¹

Transformation processes

According to Atul, “Preparation of formulations from acid is a complex process requiring chemical reactions and additives to synthesize the desired formulation. Substantial investment is required for setting up formulation facilities. Transformative processes for in-scope and out-of-scope formulations is not so distinctly different that these can be treated differently for the present purposes.”³² Information regarding the manufacturing and fabrication of 2,4-D are presented above in the “manufacturing process” section.

³⁰ Atul postconference brief, April 18, 2024, p. 2.

³¹ Atul postconference brief, April 18, 2024, p. 2.

³² Atul postconference brief, April 18, 2024, p. 2.

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

U.S. market characteristics

2,4-D is a commodity industrial chemical that is an active ingredient used in a wide variety of herbicides to kill weeds on land in and in the water. 2,4-D is a synthetic auxin and a growth regulator, which means that when applied, 2,4-D mimics auxins, a class of hormones that regulate many aspects of growth in a plant. Synthetic auxin herbicides bind to hormone receptors in plant cells causing a chain of events within the plant that leads to rapid and uncontrolled growth, and the eventual plant death.¹ In its pure form, 2,4-D acid is a dry crystalline solid produced as a dry flake or powder and can be synthesized into salts and esters.² Agricultural and plant applications are the primary use for 2,4-D with other end uses including turf, lawns, aquatic sites, and forestry sites.³

The U.S. market for 2,4-D in acid form is supplied by one U.S. producer, Corteva, and imports from India and China for 2,4-D acid with minor spot imports from Colombia and Mexico.⁴ Most exports from China and India are shipped in powder acid form; however, some importers will convert the 2,4-D acid form into 2,4-D ester and salts for commercial sale.⁵

Apparent U.S. consumption of 2,4-D increased by *** percent from 2021 to 2022 and declined by *** percent from 2022 to 2023. Overall, apparent U.S. consumption in 2023 was *** percent higher than in 2021.

Impact of section 301 tariffs

U.S. producer and importers were asked to report the impact of section 301 tariffs on the 2,4-D market in the United States (tables II-1). Four importers reported that section 301 tariffs had an impact on the 2,4-D market, while *** reported that section 301 tariffs *** an impact on the market. Three importers reported that they did not know whether section 301 tariffs had had an impact.

Firms that reported that the section 301 tariffs had an impact were asked to describe the impact of section 301 tariffs on cost, price, supply, and/or demand. Four importers

¹ Petitioner conference brief, pp. 2-4.

² Petition, p. 1.

³ Petition exhibit I-7, p.1.; Petition exhibit I-9, p. 3

⁴ Conference transcript, p.21 (Garcia de Alba), Conference transcript, pp. 122-125 (Wolf), Conference transcript pp. 37-38 (Cannistra).

⁵ Conference transcript, pp. 183-184 (Wolf).

indicated that the 301 tariffs increased the cost of 2,4-D from China. Importer *** added that it had to shift supply from China to India.

Table II-1

2,4-D: Count of firms' responses regarding the impact of the 301 tariffs on Chinese origin products

Count in number of firms reporting

Item	Firm type	Yes	No	Don't know
Impact on the U.S. market from 301 actions	U.S. producers	***	***	***
Impact on the U.S. market from 301 actions	Importers	4	0	3

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

Channels of distribution

*** sold ***; while importers of 2,4-D from China were split between distributors and end users (including converters) with a majority of 2,4-D being sold to Distributors. Importers sold Indian 2,4-D *** to ***.

Table II-2

2,4-D: Share of U.S. shipments by source, channel of distribution, and period

Shares in percent

Source	Channel	2021	2022	2023
United States	Distributors	***	***	***
United States	End users	***	***	***
China	Distributors	***	***	***
China	End users	***	***	***
India	Distributors	***	***	***
India	End users	***	***	***
Subject	Distributors	***	***	***
Subject	End users	***	***	***
Nonsubject	Distributors	***	***	***
Nonsubject	End users	***	***	***
All imports	Distributors	***	***	***
All imports	End users	***	***	***

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

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

Geographic distribution

*** reported selling 2,4-D to *** (table II-3). Importers reported selling product from India and China to all regions in the contiguous United States. For ***, *** 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 of their product from India and China within 100 miles of their U.S. point of shipment, *** percent between 101 and 1,000 miles, and *** percent over 1,000 miles.

Table II-3
2,4-D: Count of U.S. producers' and U.S. importers' geographic markets

Count in number of firms reporting

Region	U.S. producers	China	India	Subject sources
Northeast	***	1	1	1
Midwest	***	6	5	7
Southeast	***	4	3	4
Central Southwest	***	3	2	3
Mountains	***	2	1	2
Pacific Coast	***	3	2	3
Other	***	0	0	0
All regions (except Other)	***	1	1	1
Reporting firms	***	6	5	7

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 II-4 provides a summary of the supply factors regarding 2,4-D from U.S. producer Corteva and from subject countries. From 2021 to 2023, capacity in the United States increased while capacity in China and India also increased. Combined capacity utilization in subject countries was higher than in the United States. Exports were a large share of shipments from both subject country, accounting for more than *** of Indian producers' shipments, and more than *** percent of shipments from China. *** and *** responding foreign producers reported that they were unable to shift production from 2,4-D to other products.

Table II-4**2,4-D: Supply factors that affect the ability to increase shipments to the U.S. market, by country**

Quantity in 1,000 pounds acid equivalent; Ratios and shares in percent; Count in number of firms reporting

Factor	Measure	United States	China	India	Subject suppliers
Capacity 2021	Quantity	***	***	***	***
Capacity 2023	Quantity	***	***	***	***
Capacity utilization 2021	Ratio	***	***	***	***
Capacity utilization 2023	Ratio	***	***	***	***
Inventories to total shipments 2021	Ratio	***	***	***	***
Inventories to total shipments 2023	Ratio	***	***	***	***
Home market shipments 2023	Ratio	***	***	***	***
Non-US export market shipments 2023	Ratio	***	***	***	***
Ability to shift production	Count	***	***	***	***

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

Note: Responding U.S. producer accounted for *** of U.S. production of 2,4-D in acid form in 2023. Responding foreign producer/exporter firms accounted for *** percent of U.S. imports of 2,4-D from China and over *** percent of U.S. imports from India during 2023. For additional data on the number of responding firms and their share of U.S. production and of U.S. imports from each subject country, please refer to Part I, "Summary Data and Data Sources."

Note: Counts equal the number of firms reporting "yes".

Domestic production

Based on available information, U.S. producer Corteva has the ability to respond to changes in demand with large changes in the quantity of shipments of U.S.-produced 2,4-D to the U.S. market. The main contributing factors to this degree of responsiveness of supply are ***. Factors mitigating responsiveness of supply include a ***.

Corteva capacity was largely stable from 2021 to 2023 while production decreased by *** percent, resulting in a decline in capacity utilization to *** percent in 2023 from *** percent in 2021. Corteva internally consumes *** of its production, utilizing *** percent capacity for internal consumption throughout the period of investigation.⁶ Corteva's primary export market is ***.

⁶ Corteva postconference brief, pp. 15–16.

Subject imports from China

Based on available information, producers of 2,4-D from China have the ability to respond to changes in demand with moderate changes in the quantity of shipments of 2,4-D to the U.S. market.⁷ The main contributing factors to this degree of responsiveness of supply are the ability to shift shipments from inventories and the ability to shift shipments from alternate markets through foreign exporters. Factors potentially mitigating responsiveness of supply are the impact of section 301 tariffs and ***.

Chinese foreign producer *** capacity increased by approximately *** percent during 2021-23, while capacity utilization was reported at constant at almost *** percent, resulting in a *** increase in production. *** major export markets include ***. Additionally, foreign producer *** reported that it *** on the same equipment as 2,4-D, noting that its plant is ***.

Subject imports from India

Based on available information, producers of 2,4-D from India have the ability to respond to changes in demand with moderate-to-high changes in the quantity of shipments of 2,4-D to the U.S. market. The main contributing factors to this degree of responsiveness of supply are the availability of unused capacity, and the ability to shift shipments from alternate markets and inventories. Factors mitigating supply responsiveness include the limited ability to shift production to or from alternate products.

Indian producers' capacity and production increased from 2021 to 2023, with production increases outpacing capacity increases, resulting in increased capacity utilization. Indian producers reported high rates of capacity utilization during the period (*** percent in 2021, *** percent in 2022, and *** percent in 2023). Major export markets reported by Indian producers include Argentina, Australia, Brazil, Central America, Colombia, Ethiopia, Thailand, and the Philippines. *** Indian producers reported that they are unable to switch production on the same equipment used to produce 2,4-D to other products.

⁷ Three firms submitted foreign producer questionnaires, two of which are 2,4-D resellers. Only *** submitted a foreign producer questionnaire from China.

Imports from nonsubject sources

Nonsubject imports accounted for 19.1 percent of total U.S. imports in 2023. The largest sources of nonsubject imports were Austria, Colombia, and Mexico. Combined, these countries accounted for 99 percent of nonsubject imports in 2023.

Supply constraints

*** stated that it faced supply chain challenges due to the impact of the COVID-19 pandemic on the availability of raw materials. Four of seven importers reported experiencing supply constraints since January 1, 2021. Importer *** highlighted capacity and availability issues; importers *** mentioned periodic sales allocations when demand exceeded production capacity, with importer *** noting Corteva's declining to sale 2,4-D acid, leading domestic converters to rely on imports to make 2,4-D salts and esters that is dependent on 2,4-D acid. Importer *** indicated that raw materials were also unavailable due to COVID-19-related supply chain disruptions during the pandemic's peak. Importer *** also reported the unavailability of a critical raw material required for producing one of its core product line in 2021 due to limited or no 2,4-D acid product available globally in 2022, resulting in being placed on volume allocations for over fifteen months.

U.S. demand

Based on available information, the overall demand for 2,4-D is likely to experience small changes in response to changes in price. The main contributing factors are the lack of substitute products and the moderate, though varying, cost share of 2,4-D in most of its end-use products.

End uses and cost share

U.S. demand for 2,4-D depends on the demand for U.S.-produced downstream products. Reported end uses were other forms of 2,4-D salt, formulated 2,4-D ester, and formulated herbicide.

2,4-D accounts for a moderate share of the cost of the end-use products in which it is used. Reported cost shares for some end uses were as follows: 13 percent for formulated salt; 71 to 100 percent for formulated ester; and 19 to 80 percent for 2,4-D formulated herbicide.

Business cycles

*** reported that 2,4-D was not subject to business cycles or conditions of competition. Most importers (6 of 8) indicated that the market was subject to business cycles and (4 of 7) importers reported distinct conditions of competition. Specifically, all reporting importers note that the demand for 2,4-D varies throughout the year, with most applications occurring in spring (6 of 6 reporting) and some in summer (2 out of 6 reporting) and winter (1 out of 6 reporting). Importers such as *** emphasize that inventory levels are influenced by seasonal crop cycles. Importer *** reports that the use of 2,4-D is connected to seasonal agricultural activities, while importer *** highlights that over 80 percent of acres treated with 2,4-D end-use products are treated during April, May, June, and July.

Four of seven importers indicated that the market was subject to distinctive conditions of competition. Specifically, importer ***, discusses the impact of global production capacities and seasonal factors on markets as well as global economic influences. Importer *** highlights that demand is driven by cost and price, import freight expenses, and product availability which can influence stocking or destocking in distribution channels. Importers *** state that under U.S. law, all pesticide products must be registered with the U.S. Environmental Protection Agency (EPA), including herbicide products, indicating their intended labeled use during submission for product registration. They emphasize that a significant portion of the 2,4-D market is affected by competition due to Corteva's patents, EPA regulations, and marketing programs adding that Corteva has produced a genetically modified (GMO) seed variety resistant to 2,4-D formulated herbicide products with exclusive rights for their use that is enforced through EPA registration.

Demand trends

*** reported there had been *** in U.S. and foreign demand for 2,4-D, while most importers (5 of 7) reported an increase in U.S. demand for 2,4-D since January 1, 2021 (table II-5). *** indicates that demand patterns vary from year to year. Importer *** reports that increased demand is due to seasonal factors, challenges with other herbicides, and the introduction of GMO technology. Importer *** notes a rising trend in 2,4-D usage, with importer *** attributing peak demand to high COVID-related demand and domestic supply shortages in 2022 with a return to typical demand trends following a market correction in 2023. Importers *** highlight an annual increase in 2,4-D's popularity driven by the growing adoption of Corteva's Enlist seeds; although these specific seeds require using Corteva's 2,4-D herbicide products.

Table II-5**2,4-D: Count of firms' responses regarding overall domestic and foreign demand, by firm type**

Count in number of firms reporting

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

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

Substitute products

Substitutes for 2,4-D are limited. *** a majority (6 of 7) responding importers reported that there were no substitutes. Importer *** state that Dicamba (another herbicide active chemical ingredient) could be used as a substitute for 2,4-D.

Substitutability issues

This section assesses the degree to which U.S.-produced 2,4-D and imports of 2,4-D from subject countries can be substituted for one another by examining the importance of certain purchasing factors and the comparability of 2,4-D 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 2,4-D and 2,4-D imported from subject sources.⁸ Factors contributing to this level of substitutability include similar quality, similar availability of forms of 2,4-D, and high interchangeability between domestic and subject sources. Factors reducing substitutability include some differences in reported interchangeability between 2,4-D from domestic and subject sources, a difference in reported lead times from domestic and subject sources, and some significant factors other than price that firms consider, including the reported inability of some importers to purchase from domestic producers or the preference for flake or powder 2,4-D acid.

⁸ The degree of substitution between domestic and imported 2,4-D depends upon the extent of product differentiation between the domestic and imported products and reflects how easily purchasers can switch from domestically produced 2,4-D to the 2,4-D imported from subject countries (or vice versa) when prices change. The degree of substitution may include such factors as relative prices (discounts/rebates), quality differences (e.g., grade standards, defect rates, etc.), and differences in sales conditions (e.g., lead times between order and delivery dates, reliability of supply, product services, etc.).

Factors affecting purchasing decisions

Purchasers responding to lost sales lost revenue allegations were asked to identify the main purchasing factors their firm considered in their purchasing decisions for 2,4-D.⁹ The major purchasing factors identified by firms are availability/reliability of supply, quality, and price.

Most important purchase factors

The most often cited top three factors firms consider in their purchasing decisions for 2,4-D were availability/supply (four firms), quality (four firms), and price (three firms) as shown in table II-6. Availability was the most frequently cited first-most important factor (cited by two firms), followed by quality and price/cost (reported by one firm for each). Availability was also the most frequently reported second-most important factor (two firms), and quality was the most frequently reported third-most important factor (two firms).

Table II-6
2,4-D: Count of ranking of factors used in purchasing decisions as reported by purchasers, by factor

Count in number of firms reporting

Factor	First	Second	Third	Total
Availability / Supply	2	2	0	4
Quality	1	1	2	4
Price / Cost	1	1	1	3
All other factors	1	1	1	NA

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

Note: Other factors include lead time, regulatory compliance, and strategic partnerships.

Lead times

U.S. producer Corteva reported *** its commercial shipments were made from ***, with lead times averaging *** days. Importers reported that *** percent of their commercial shipments were from U.S. inventories, with lead times averaging *** days, and the remaining *** percent were produced to order, with lead times averaging *** days.

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

Comparison of U.S.-produced and imported 2,4-D

In order to determine whether U.S.-produced 2,4-D can generally be used in the same applications as imports from China and India, U.S. producers and importers were asked whether the products can always, frequently, sometimes, or never be used interchangeably. As shown in tables II-7 to II-8, U.S. producer Corteva reported that 2,4-D from all specified sources were *** interchangeable. All responding importers reported that U.S. produced 2,4-D were always or frequently interchangeable with imported product from China and India.

Table II-7
2,4-D: Count of U.S. producers reporting the interchangeability between product produced in the United States and in other countries, by country pair

Count in number of firms reporting

Country pair	Always	Frequently	Sometimes	Never
United States vs. China	***	***	***	***
United States vs. India	***	***	***	***
China vs. India	***	***	***	***
United States vs. Other	***	***	***	***
China vs. Other	***	***	***	***
India vs. Other	***	***	***	***

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

Table II-8
2,4-D: Count of importers reporting the interchangeability between product produced in the United States and in other countries, by country pair

Count in number of firms reporting

Country pair	Always	Frequently	Sometimes	Never
United States vs. China	2	2	0	0
United States vs. India	3	0	0	0
China vs. India	3	0	0	0
United States vs. Other	2	1	0	0
China vs. Other	2	1	0	0
India vs. Other	2	0	0	0

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

Importer *** reports that domestic supply has better manufacturing flowability, effectively reducing processing time by requiring minimal or no crushing of 2,4-D and performing well on their equipment. In contrast, imported material requires additional preparatory crushing to enhance manufacturing flowability. Importer *** adds that the interchangeability is contingent upon meeting product specifications for U.S. EPA approval.

In addition, U.S. producers and importers were asked to assess how often differences other than price were significant in sales of 2,4-D from the United States, subject, or nonsubject countries. As seen in tables II-9 to II-10, U.S. producer Corteva reported that non-price differences are *** significant when comparing domestic 2,4-D and product from subject countries. Most importers reported that non-price differences were always or frequently significant between domestic and Chinese 2,4-D products and sometimes significant when considering domestic and nonsubject sources. Importers were mixed when reporting non-price differences between domestic and Indian 2,4-D products.

Table II-9

2,4-D: 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

Count in number of firms reporting

Country pair	Always	Frequently	Sometimes	Never
United States vs. China	***	***	***	***
United States vs. India	***	***	***	***
China vs. India	***	***	***	***
United States vs. Other	***	***	***	***
China vs. Other	***	***	***	***
India vs. Other	***	***	***	***

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

Table II-10

2,4-D: Count of importers reporting the significance of differences between product produced in the United States and in other countries, by country pair

Count in number of firms reporting

Country pair	Always	Frequently	Sometimes	Never
United States vs. China	3	1	1	0
United States vs. India	1	1	1	0
China vs. India	1	1	1	0
United States vs. Other	0	1	3	0
China vs. Other	0	1	2	0
India vs. Other	0	1	1	0

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

Several importers have stated that the domestic producer is unwilling or unable to supply them. Importer *** mentioned that the U.S. producer refused to sell to them due to viewing *** as a competitor, while importer *** indicated that they were unable to obtain sufficient supplies of 2,4-D from the domestic supplier and had to purchase from imported sources because "Corteva notified them that they would no longer supply 2,4-D acid due to capacity constraints at their production facility." Importer ***

states that they are forced to import 2,4-D acid to produce 2,4-D salts and esters since no domestically produced acid is available for commercial purchase from Corteva. Additionally, importer *** reported historical purchases of 2,4-D products from Corteva but noted a change in Corteva's supply patterns, which led to an increase in imports and investment in plant infrastructure upgrades required for processing imported 2,4-D products.

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

The Commission analyzes a number of factors in making injury determinations (see 19 U.S.C. §§ 1677(7)(B) and 1677(7)(C)). Information on the subsidies and dumping margins was presented in Part I of this report and information on the volume and pricing of imports of the subject merchandise is presented in Part IV and Part V. Information on the other factors specified is presented in this section and/or Part VI and (except as noted) is based on the questionnaire responses of one firm that accounted for the all known U.S. production of 2,4-D in acid form during 2023.

U.S. producers

The Commission issued a U.S. producer questionnaire to the petitioner (Corteva), as the company indicated in the petition it was the sole U.S. producer of 2,4-D. However, it was determined that Corteva is the sole U.S. producer of 2,4-D in acid form,¹ and four firms that convert 2,4-D acid into derivative salt and ester products ("U.S. converters")² also submitted U.S. producer questionnaire responses.³ Part III and tables C-1 through C-3 in appendix C present U.S. industry data on the sole U.S. producer of 2,4-D acid, Corteva, while information on the U.S. industry that also includes data from the four U.S. converters is presented in tables C-4 through C-6 in appendix C and appendices D, E, and F.⁴

¹ Corteva also ***.

² The four firms referred to as "U.S. converters" are ***. *** reported producing both 2,4-D salts and esters, while *** only reported producing 2,4-D salt.

³ Corteva is believed to be the sole U.S. producer of 2,4-D in acid form. The five responding firms in total are believed to collectively represent the majority of U.S. production of 2,4-D in salt and ester forms. All five firms also formulate 2,4-D salts and/or esters into downstream herbicide products.

⁴ All five firms also submitted supplemental U.S. producer questionnaire responses concerning production related activities. Data from the supplemental responses are also presented in appendix D.

Table III-1 lists Corteva's production location, position on the petition, and share of total production of 2,4-D in acid form.

Table III-1

2,4-D acid: U.S. producer Corteva, its position on the petition, location of production, and share of reported production, 2023

Firm	Position on petition	Production location	Share of production
Corteva	Petitioner	Midland, MI	100.0

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

Corteva ***. In addition, as discussed in greater detail below, Corteva ***.

Table III-2 presents events in the U.S. industry since January 1, 2021 as noted in public sources.

Table III-2
2,4-D: Important industry events since 2021

Item	Firm	Event
Weather	Corteva and other firms	In February 2021, Winter Storm Uri hit Texas chemical plants, which make up nearly 75 percent of U.S. chemical production, and these chemicals are used as raw material for many other companies' chemical manufacturing processes, including Corteva. As much as 80 percent of U.S. basic organic chemicals capacity was offline after the storm, and up to 60 percent was still offline in mid-March 2021. Capacity was largely restored in April 2021.
Weather	Multiple firms	In December 2022, multiple chemical plants in Texas shut down due to cold weather. As Texas chemical plants make up a majority of chemical production, various raw materials for downstream companies were affected.
COVID-19	Multiple firms	COVID-19 continued to have supply chain effects on the chemical industry in 2021 and 2022, with one survey reporting that 93 percent of companies responded that supply chain and freight transportation disruptions had impacted their U.S. chemicals manufacturing business.
Court settlement over contamination litigation	Corteva, Chemours, Dupont	On June 2, 2023, Corteva announced it had reached a settlement agreement over Per- and Polyfluorinated Substances (PFAS), toxic contaminants. The companies agreed to collectively establish and contribute a total of \$1.185 billion to a water district settlement fund. Contribution rates were to be consistent with the binding Memorandum of Understanding between the companies reached in January 2021, with Chemours contributing 50 percent (about \$592 million), and DuPont (about \$400 million) and Corteva (about \$193 million) collectively contributing the remaining 50 percent. Following preliminary court approval in August 2023, about 14,000 public water systems were notified of the settlement. Federal court approved the settlement in February 2024.

Source: Luke Metzger, "The Texas Freeze: Timeline of Events," Environment Texas, January 31, 2022, <https://environmentamerica.org/texas/center/articles/the-texas-freeze-timeline-of-events/>; S&P Global, "Impact of Winter Storm Uri on Chemical Markets," accessed April 27, 2024, <https://www.spglobal.com/commodityinsights/en/ci/topic/impact-of-winter-storm-uri-on-chemical-markets.html>; Jess Donald, "Winter Storm Uri, 2021: The Economic Impact of the Storm," Comptroller.Texas.Gov, October 2021, <https://comptroller.texas.gov/economy/fiscal-notes/archive/2021/oct/winter-storm-impact.php>; Conference Transcript, p. 64 (Garcia de Alba), 124 (Wolf); Jesse Thompson, "Texas Winter Deep Freeze Broke Refining, Petrochemical Supply Chains," Federal Reserve Bank of Dallas, Southwest Economy, second quarter 2021, <https://www.dallasfed.org/research/swe/2021/swe2102/swe2102c>; Al Greenwood, "More Texas Chem Plants Shut Down Amid Cold Weather," ICIS, December 23, 2023, <https://www.icis.com/explore/resources/news/2022/12/23/10839145/more-texas-chem-plants-shut-down-amid-cold-weather/>; Hossein Abedsoltan, "COVID-19 and the Chemical Industry: Impacts, Challenges, and Opportunities," Journal of Chemical Technology and Biotechnology, October 2023; <https://analyticalsciencejournals.onlinelibrary.wiley.com/doi/full/10.1002/jctb.7531>; Maersk, "The Chemical Supply Chain: Lessons Learned from the Pandemic to Influence Strategy in 2021," January 2021,

https://www.maersk.com/~media_sc9/maersk/solutions/chemicals/files/covid19-lessons-learned_chemical-industry_white-paper.pdf; S&P Global Platts, "Petrochemical Trends H1 2022: Continued Challenges Amid Latest Wave of COVID-19," n.d., https://www.spglobal.com/commodityinsights/PlattsContent/assets/files/en/specialreports/chemicals/petrochemical_trends_h1_2022.html; American Chemistry Council, "New Report Finds Major Supply Chain Problems Continue to Impact Chemical Manufacturing," April 13, 2023, <https://www.americanchemistry.com/chemistry-in-america/news-trends/press-release/2023/new-report-finds-major-supply-chain-problems-continue-to-impact-chemical-manufacturing>; Corteva, "Chemours, DuPont, and Corteva Reach Comprehensive PFAS Settlement with U.S. Water Systems," Press release, June 2, 2023, <https://corteva.com/resources/media-center/chemours-dupont-and-corteva-reach-comprehensive-pfas-settlement-with-us-water-systems.html>; FSJA, "Federal Court Sanctions Historic Settlement in PFAS Contamination Litigation," February 9, 2024, <https://fireandsafetyjournalamericas.com/federal-court-sanctions-historic-settlement-in-pfas-contamination-litigation/>; Andrew Alessandro, "Three Large Companies Agree to Historic PFAS Settlement," June 12, 2023, <https://www.gibbonslawalert.com/2023/06/12/three-large-chemical-companies-agree-to-historic-pfas-settlement/>; John Gardella, "PFAS AFFFMDL Settlements Moving Forward," August 30, 2023, <https://www.cmbg3.com/pfas-aff-mdl-settlements-moving-forward>.

Producers in the United States were asked to report any changes in the character of their operations or organization relating to the production of 2,4-D since 2021 as well as the impact of the COVID-19 pandemic on firm operations. Table III-3 presents the operational changes identified by Corteva.

Table III-3
2,4-D: U.S. producer Corteva's reported changes in operations, since January 1, 2021

Item	Narrative response on changes in operations
***	***
***	***
***	***

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

U.S. production, capacity, and capacity utilization

The Commission asked U.S. firms to report their installed overall, practical overall, and practical 2,4-D capacities. Installed or “theoretical” overall capacity measures the level of production firms could have attained based solely on existing capital investments and not considering other constraints such as availability of material inputs, labor force, and normal downtime. The two practical capacity measures take into consideration both existing capital investment as well as non-capital investment constraints. Practical overall capacity measures firms’ capacity to produce 2,4-D as well as any other products produced using the same equipment/machinery based on firms’ actual product mix over the period, whereas practical 2,4-D capacity measures only the practical capacity of firms to produce 2,4-D.

Table III-4 presents Corteva’s installed and practical capacity and production. Corteva reported that its installed capacity was *** over the period at approximately *** pounds.⁵ The company also ***, thus Corteva’s ***. Corteva reported that ***.⁶ Its practical capacity was approximately *** pounds in 2021, decreased to *** pounds in 2022, and then increased to *** pounds in 2023 for a *** percent overall increase in its practical capacity from 2021-23.

Corteva’s production increased from approximately *** pounds in 2021 to *** pounds in 2022 (an increase of *** percent) and then decreased to *** pounds in 2023 (a *** percent decrease from 2022-23 and a decrease of *** percent overall from 2021-23). Resultingly, Corteva’s practical capacity increased *** percentage points from 2021-22 (from *** percent to *** percent) then decreased by *** percentage points to *** percent, resulting in an overall decrease of *** percentage points across the period.

⁵ References to pounds throughout part III are measured in dry weight acid equivalent.

⁶ For additional details, see Corteva’s responses in tables III-3 and III-5.

Table III-4

2,4-D: U.S. producer Corteva's installed and practical capacity, production, and utilization on the same equipment as subject production, by period

Capacity and production in 1,000 pounds acid equivalent; utilization in percent

Item	Measure	2021	2022	2023
Installed overall	Capacity	***	***	***
Installed overall	Production	***	***	***
Installed overall	Utilization	***	***	***
Practical overall	Capacity	***	***	***
Practical overall	Production	***	***	***
Practical overall	Utilization	***	***	***
Practical 2,4-D	Capacity	***	***	***
Practical 2,4-D	Production	***	***	***
Practical 2,4-D	Utilization	***	***	***

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

Figure III-1

2,4-D: U.S. producer Corteva's practical capacity, production, and capacity utilization, by period

* * * * *

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

Table III-5 presents Corteva's narratives regarding practical capacity constraints.

Table III-5

2,4-D: U.S. producer Corteva's reported constraints to practical overall capacity, since January 1, 2021

Item	Narrative response on constraints to practical overall capacity
Supply of material inputs	***
Other constraints	***

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

Alternative products

Corteva indicated in its responses that ***.

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

Table III-6 presents U.S. producer Corteva's U.S. shipments, export shipments, and total shipments during the period of investigation. The *** of Corteva's shipments by both quantity and value were U.S. shipments (*** percent or greater by quantity and *** percent or greater by value) with export shipments representing *** percent or less by quantity and *** percent or less by value during the period.

Corteva's total shipments decreased irregularly across the period (a *** percent overall decrease by quantity and *** percent overall decrease by value) beginning at approximately *** pounds (\$****) in 2021 and ending at *** pounds (\$****) in 2023. Corteva's total shipments increased *** percent by quantity (*** percent by value) from 2021-22, then decreased *** percent by quantity (*** percent by value) from 2022-23. Because ***, Corteva's U.S. shipments followed a similar trajectory to total shipments also decreasing irregularly across the period (a *** percent by overall decrease by quantity and a *** percent decrease by value) (beginning at approximately *** pounds (\$****) in 2021 and ending at *** pounds (\$****) in 2023). Corteva's U.S. shipments increased *** percent by quantity (*** percent by value) from 2021-22, then decreased *** percent by quantity (*** percent by value) from 2021-22. Corteva's export shipments ***.

The unit values of Corteva's U.S. and total shipments as measured in dollars per pound fluctuated across the period. Unit values of total shipments increased from \$*** per pound in 2021 to \$*** per pound in 2022 and then decreased to \$*** per pound in 2023 representing a *** percent decrease across the period. Unit values of U.S. shipments increased from \$*** per pound in 2021 to \$*** per pound in 2022 and then decreased to \$*** per pound in 2023 representing a *** percent decrease across the period. Unit values of export shipments increased from \$*** per pound in 2021 to \$*** per pound in 2022 and \$*** per pound in 2023 representing a *** percent increase in export unit values across the period.

Table III-6**2,4-D: U.S. producer Corteva's total shipments, by destination and period**

Quantity in 1,000 pounds acid equivalent; value in 1,000 dollars; unit value in dollars per 1,000 pounds acid equivalent; shares in percent

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

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

Table III-7 presents Corteva's U.S. shipments by type. As noted, Corteva's U.S. shipments decreased irregularly by both quantity and value across the period (** percent by quantity and ** percent by value).

The ** of Corteva's U.S. shipments were reported as internal consumption in each year with the company reporting an increasing share of its production being internally consumed across the period. Corteva reported ** percent of its U.S. shipments being internally consumed by quantity (and ** percent by value) in 2021. Corteva's share of U.S. shipments represented by internal consumption then increased to ** percent by quantity (and ** percent by value) in 2022. In 2023, Corteva's share of U.S. shipments represented by internal consumption increased again to ** percent of U.S. shipments by quantity (** percent by value). This represented a ** percentage point increase by quantity and an ** percentage point increase by value across the period in the share of U.S. shipments being internally consumed. Corteva's overall internal consumption increased irregularly ** percent by quantity over the period but decreased ** percent irregularly by value.

Commercial U.S. shipments represented the second largest portion of Corteva's U.S. shipments by both quantity and value in each period. Commercial U.S. shipments by quantity and value decreased both overall and as a proportion of U.S. shipments across each period as Corteva's internal consumption as a proportion of U.S. shipments increased. Commercial U.S. shipments were ** pounds (\$**) in 2021, then decreased to ** pounds (\$**) in 2022, and then decreased again to ** pounds (\$**) in 2023, representing a decrease of ** percent by quantity and ** percent by value across the period. As a share of U.S. shipments, commercial U.S. shipments were ** percent of Corteva's U.S. shipments in 2021 by quantity (** percent by value) and decreased to ** percent of U.S. shipments by both quantity and value in 2023.

Lastly, Corteva reported U.S. shipments categorized as swap shipments under an agreement with **. ⁷ Corteva's shipments represented by this agreement were ** pounds (\$**) in 2021, then decreased to ** pounds (\$**) in 2022 and ended at ** pounds (\$**) in 2023, representing a ** percent decrease by quantity and ** percent decreased by value across the period.

⁷ In describing the swap shipments, Corteva noted that, "****." ** in its U.S. producer response provided the following description of the agreement, "****."

Resultingly, the swap shipments as a share of total U.S. shipments decreased from *** percent of total U.S. shipments in 2021 by quantity (*** percent by value) to *** percent of U.S. shipments by quantity (*** percent by value).

Unit values of Corteva's U.S. shipments as measured in dollars per pound a decreased irregularly from \$*** per pound in 2021 to \$*** per pound in 2022 and ending at \$*** per pound in 2023, a *** percent decrease across the period. Unit values of Corteva's internal consumption and commercial U.S. shipments both decreased irregularly from \$*** per pound in 2021 to \$*** per pound in 2022 and ending at \$*** per pound in 2023, a *** percent decrease across the period. Unit values of Corteva's U.S. swap shipments increased irregularly from \$*** per pound in 2021 to \$*** per pound in 2022 and ending at \$*** per pound in 2023, a *** percent increase across the period.

Table III-7
2,4-D: U.S. producer Corteva's U.S. shipments, by type and period

Quantity in 1,000 pounds acid equivalent; value in 1,000 dollars; unit value in dollars per pound acid equivalent; shares in percent

Item	Measure	2021	2022	2023
Commercial U.S. shipments	Quantity	***	***	***
Swap shipments	Quantity	***	***	***
Internal consumption	Quantity	***	***	***
U.S. shipments	Quantity	***	***	***
Commercial U.S. shipments	Value	***	***	***
Swap shipments	Value	***	***	***
Internal consumption	Value	***	***	***
U.S. shipments	Value	***	***	***
Commercial U.S. shipments	Unit value	***	***	***
Swap shipments	Unit value	***	***	***
Internal consumption	Unit value	***	***	***
U.S. shipments	Unit value	***	***	***
Commercial U.S. shipments	Share of quantity	***	***	***
Swap shipments	Share of quantity	***	***	***
Internal consumption	Share of quantity	***	***	***
U.S. shipments	Share of quantity	100.0	100.0	100.0
Commercial U.S. shipments	Share of value	***	***	***
Swap shipments	Share of value	***	***	***
Internal consumption	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—⁸

If domestic producers internally transfer significant production of the domestic like product for the production of a downstream article and sell significant production of the domestic like product in the merchant market, and the Commission finds that—

- (I) the domestic like product produced that is internally transferred for processing into that downstream article does not enter the merchant market for the domestic like product,*
- (II) the domestic like product is the predominant material input in the production of that downstream article, and*

then the Commission, in determining market share and the factors affecting financial performance . . . , shall focus primarily on the merchant market for the domestic like product.

⁸ Amended by PL 114-27 (as signed, June 29, 2015), Trade Preferences Extension Act of 2015.

Transfers and sales

As reported in table III-7, internal consumption accounted for between *** and *** percent of Corteva's U.S. shipments of 2,4-D by quantity across the period. Additionally, U.S. shipments categorized as swap shipments accounted for between *** and *** percent of Corteva's U.S. shipments of 2,4-D by quantity across the period. As shown in table III-8, *** of Corteva's internal consumption or swaps were sold as is, but rather *** internal consumption and swap shipments were reported as having been processed into downstream formulated herbicide products.

Table III-8
2,4-D: U.S. producer Corteva's production used in downstream products, by type of consumption and period

Quantity in 1,000 pounds acid equivalent; Share in percent

Item	Measure	2021	2022	2023
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	***	***	***
Swaps: Sold as is	Quantity	***	***	***
Swaps: Processed into downstream products	Quantity	***	***	***
All swaps	Quantity	***	***	***
IC + swaps: Sold as is	Share	***	***	***
Swaps: Processed into downstream products	Share	***	***	***
All swaps	Share	***	***	***
Sold as is	Quantity	***	***	***
Processed into downstream products	Quantity	***	***	***
All internal consumption and swaps	Quantity	***	***	***
Sold as is	Share	***	***	***
Processed into downstream products	Share	***	***	***
All internal consumption and swaps	Share	***	***	***

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

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

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. Corteva reported internal consumption of 2,4-D for the production of downstream formulated herbicide products. No 2,4-D intended for internal consumption was reported as having been diverted to the merchant market.

Second statutory criterion in captive consumption

The second criterion of the captive consumption provision concerns whether the domestic like product is the predominant material input in the production of the downstream article that is captively produced. As shown in table III-9, with respect to the downstream articles resulting from captive production, Corteva reported that 2,4-D accounts for *** percent of the finished value of the downstream product and *** percent of the share of the downstream product by quantity.⁹

Table III-9
2,4-D: U.S. producer Corteva's 2,4-D contribution to downstream product

Share in percent

Material input	Share of value	Share of quantity
2,4-D	***	***
All other material inputs	***	***
All material inputs	100.0	100.0

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

⁹ Daniel Cannistra counsel for Corteva stated, “****” See EDIS Doc #819759 for ***. Email from Daniel Cannistra, April 25, 2024, EDIS Doc #819759.

U.S. producers' inventories

Table III-10 presents Corteva's end-of-period inventories and the ratio of these inventories to the company's production, U.S. shipments, and total shipments. Corteva's end-of-period inventories decreased across the period from approximately *** pounds in 2021 to *** pounds in 2022, and then to *** pounds in 2023, a decrease of *** percent from 2021-23. Corteva's inventories as a ratio to its U.S. production, U.S. shipments, and total shipments all decreased across the period. Corteva's inventories ratio to U.S. production decreased from *** percent in 2021 to *** percent in 2023, a decrease of *** percentage points. Corteva's inventories ratio to U.S. shipments decreased from *** percent in 2021 to *** percent in 2023, a decrease of *** percentage points. The company's inventories ratio to total shipments decreased from *** percent in 2021 to *** percent in 2023, a decrease of *** percentage points.

Table III-10

2,4-D: U.S. producer Corteva's inventories and their ratio to select items, by period

Quantity in 1,000 pounds dry acid equivalent; ratio in percent

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

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

U.S. producers' imports from subject sources

Corteva reported having ***. It indicated its reason for importing as, “***.” Corteva reported that it imported ***. It also reported it directly imported ***. Table III-11 presents this import data in 1,000 pounds dry acid equivalent and provides ratios of the imports by source to Corteva’s U.S. production. Corteva’s reported imports from China, India, and from the two subject sources combined represented *** percent of its U.S. production in each year of the period.

Table III-11

2,4-D: Corteva's U.S. production, U.S. imports from subject sources, and ratio of subject imports to production, by period

Quantity in 1,000 pounds dry acid equivalent; ratio in percent

Item	Measure	2021	2022	2023
U.S. production	Quantity	***	***	***
Imports from China	Quantity	***	***	***
Imports from India	Quantity	***	***	***
Imports from subject sources	Quantity	***	***	***
Imports from China to U.S. production	Ratio	***	***	***
Imports from India to U.S. production	Ratio	***	***	***
Imports from subject sources to U.S. production	Ratio	***	***	***

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

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

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

Corteva ***.

U.S. employment, wages, and productivity

Table III-12 shows Corteva’s employment-related data. Corteva reported, “***.” The company reported *** production and related workers (“PRWs”) were employed in relation to the production of 2,4-D in each year of the period. Approximately *** hours were worked in 2021 and approximately *** hours were worked in both 2022 and 2023 in connection with 2,4-D production. Hours worked per PRW were *** in 2021 and *** in 2022 and 2023.

Hourly wages increased from \$*** per hour in 2021 to \$*** per hour in 2022 and increased again to \$*** in 2023, an increase across the period of *** percent. Total wages paid increased irregularly from approximately \$*** in 2021 to \$*** in 2022 before decreasing to \$*** in 2023 for an overall increase of *** percent in total wages paid per year across the period. Productivity as measured in pounds acid equivalent per hour decreased across the period, beginning at *** pounds per hour in 2021 and decreasing to *** pounds per hour in 2023, a decrease of *** percent across the period. Unit labor costs increased *** percent across the period.

Table III-12

2,4-D: U.S. producer Corteva's employment related information, by item and period

Item	2021	2022	2023
Production and related workers (PRWs) (number)	***	***	***
Total hours worked (1,000 hours)	***	***	***
Hours worked per PRW (hours)	***	***	***
Wages paid (\$1,000)	***	***	***
Hourly wages (dollars per hour)	***	***	***
Productivity (pounds acid equivalent per hour)	***	***	***
Unit labor costs (dollars per pound acid equivalent)	***	***	***

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

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

U.S. importers

The Commission issued importer questionnaires to 29 firms believed to be possible importers of subject 2,4-D, as well as to U.S. producers of 2,4-D.¹ Usable questionnaire responses were received from eight companies,² representing *** percent of U.S. imports from China, *** percent of U.S. imports from India, and *** percent of U.S. imports from subject sources as compared to official import statistics reported under primary HTS statistical reporting number 2918.99.2010.³ Table IV-1 lists all responding U.S. importers of 2,4-D from China and India and other sources, their locations, and their shares of U.S. imports in 2023. In 2023, seven of the eight U.S. importers reported imports of 2,4-D from China, five of the eight firms reported imports of 2,4-D from India, and three of the eight firms reported imports of 2,4-D from nonsubject sources.

Table IV-1
2,4-D: U.S. importers, their headquarters, and share of total imports within a given source by firm, 2023

Share in percent

Firm	Headquarters	China	India	Subject sources	Nonsubject sources	All import sources
Albaugh	Ankeny, IA	***	***	***	***	***
Atul USA	Charlotte, NC	***	***	***	***	***
Corteva	Indianapolis, IN	***	***	***	***	***
Drexel	Memphis, TN	***	***	***	***	***
Nufarm	Alsip, IL	***	***	***	***	***
PBI-Gordon	Shawnee, KS	***	***	***	***	***
ProActive	Naples, FL	***	***	***	***	***
Sharda Cropchem	Mumbai, India	***	***	***	***	***
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 "---".

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

² Additionally, five firms submitted responses certifying that they had not imported 2,4-D since January 1, 2021: ***.

³ Merchandise covered by the scope may also be imported under HTS statistical reporting numbers 3808.93.0500 and 3808.93.1500 covering formulated herbicide products.

U.S. imports

Table IV-2 presents data for U.S. imports of 2,4-D from China and India, subject sources combined, nonsubject sources, and all sources as reported under primary HTS statistical reporting number 2918.99.2010. Quantities, values, unit values, shares, and ratios to U.S. production are presented. In all years of the period, China was the leading source of U.S. imports by quantity, followed by India, and then nonsubject sources.

Imports from China were approximately 20.2 million pounds in 2021 (\$26.4 million), increasing 151.0 percent to 50.8 million pounds in 2022 (\$107.7 million, a 308.2 percent increase by value), before decreasing 59.3 percent to 20.7 million pounds in 2023 (\$26.3 million, a 75.6 percent decrease by value). Resultingly, U.S. imports from China increased irregularly 2.1 percent by volume but decreased irregularly 0.4 percent by value overall from 2021-23.

Imports from India were approximately 8.8 million pounds in 2021 (\$11.4 million), increasing 108.8 percent to 18.4 million pounds in 2022 (\$42.3 million, a 270.2 percent increase by value from 2021-22), before decreasing 16.6 percent to 15.3 million pounds in 2023 (\$24.6 million, a 41.8 percent decrease by value from 2022-23). U.S. imports from India increased irregularly by both volume and value overall from 2021-23 (by 74.1 and 115.5 percent, respectively).

Combined, U.S. imports from the two subject sources increased irregularly from 2021-23 (23.9 percent by quantity and 34.6 percent by value). U.S. imports from subject sources were approximately 29.0 million pounds in 2021 (\$37.8 million) increasing 138.2 percent to 69.1 million pounds in 2022 (\$150.0 million, a 296.7 percent increase by value from 2021-22), before decreasing 48.0 percent to 36.0 million pounds in 2023 (\$50.9 million, a 66.1 percent decrease by value from 2022-23).

Imports from nonsubject sources⁴ were approximately 548 thousand pounds in 2021 (\$2.2 million), increasing 115.3 percent to 1.2 million pounds in 2022 (\$5.0 million, a 130.0 percent increase by value from 2021-22) and then increasing again by 620.4 percent to 8.5 million pounds in 2023 (\$29.6 million, a 493.7 percent increase by value from 2022-23). U.S. imports from nonsubject sources increased 1,451.1 percent by volume and 1,265.5 percent by value overall over the 2021-23 period. Resultingly, nonsubject imports' share of total U.S.

⁴ The top nonsubject import sources across the period were Mexico (58.0 percent of nonsubject imports from 2021-23 by volume), Colombia (22.4 percent of nonsubject imports from 2021-23 by volume), and Singapore (8.5 percent of nonsubject imports from 2021-23 by volume). Imports from Mexico increased 1,352.6 percent by volume from 2021-23, while all reported U.S. imports from Colombia in the period entered in 2023 (no imports were reported from Colombia in 2021 or 2022).

imports by volume grew from 1.9 percent of the volume of imports in 2021 (5.4 percent by value) to 19.1 percent by volume (36.8 percent by value).

U.S. imports from subject sources as a share of total imports increased from 98.1 percent of imports by volume in 2021 (94.6 percent by value) to 98.3 percent of imports in 2022 by volume (96.8 percent by value) before decreasing 17.4 percentage points to 80.9 percent of total imports in 2023 by volume (63.2 percent by value, representing a 31.4 percentage points drop in share of value from 2021-23). Imports from China as a share of total imports increased from 68.4 percent in 2021 (66.0 percent by value) to 72.2 percent in 2022 (69.5 percent by value) before decreasing 25.8 percentage points to 46.5 percent by volume (32.7 percent by value). Imports from India as a share of total imports decreased from 29.7 percent of the volume in 2021 (28.6 by value) to 26.1 percent in 2022 (27.3 percent by value) before increasing 8.3 percentage points to 34.4 percent by volume (30.6 by value).

Average unit values (“AUVs”) of U.S. imports from nonsubject sources were higher than AUVs of imports from subject sources in all periods. AUVs of imports from nonsubject sources were between \$3.49 and \$4.23 per pound from 2021-23 as compared to AUVs between \$1.30 and \$2.17 per pound for subject imports from 2021-23. AUVs of imports for all sources increased from 2021-22 before decreasing from 2022-23. From 2021-23, AUVs of imports from China were between \$1.27 and \$2.12 per pound, while AUVs of imports from India were between \$1.30 and \$2.30 per pound. AUVs of imports from China decreased irregularly across the period, while AUVs of imports from India increased irregularly across the period.

Table IV-2
2,4-D: U.S. imports, by source and period

Quantity in 1,000 pounds acid equivalent; value in 1,000 dollars; unit value in dollars per 1,000 pounds acid equivalent

Source	Measure	2021	2022	2023
China	Quantity	20,230	50,783	20,650
India	Quantity	8,793	18,361	15,306
Subject sources	Quantity	29,023	69,145	35,956
Nonsubject sources	Quantity	548	1,179	8,494
All import sources	Quantity	29,571	70,324	44,450
China	Value	26,394	107,746	26,301
India	Value	11,415	42,259	24,602
Subject sources	Value	37,809	150,005	50,903
Nonsubject sources	Value	2,169	4,989	29,618
All import sources	Value	39,978	154,994	80,521
China	Unit value	1.30	2.12	1.27
India	Unit value	1.30	2.30	1.61
Subject sources	Unit value	1.30	2.17	1.42
Nonsubject sources	Unit value	3.96	4.23	3.49
All import sources	Unit value	1.35	2.20	1.81

Table continued.

Table IV-2 Continued
2,4-D: U.S. imports, by source and period

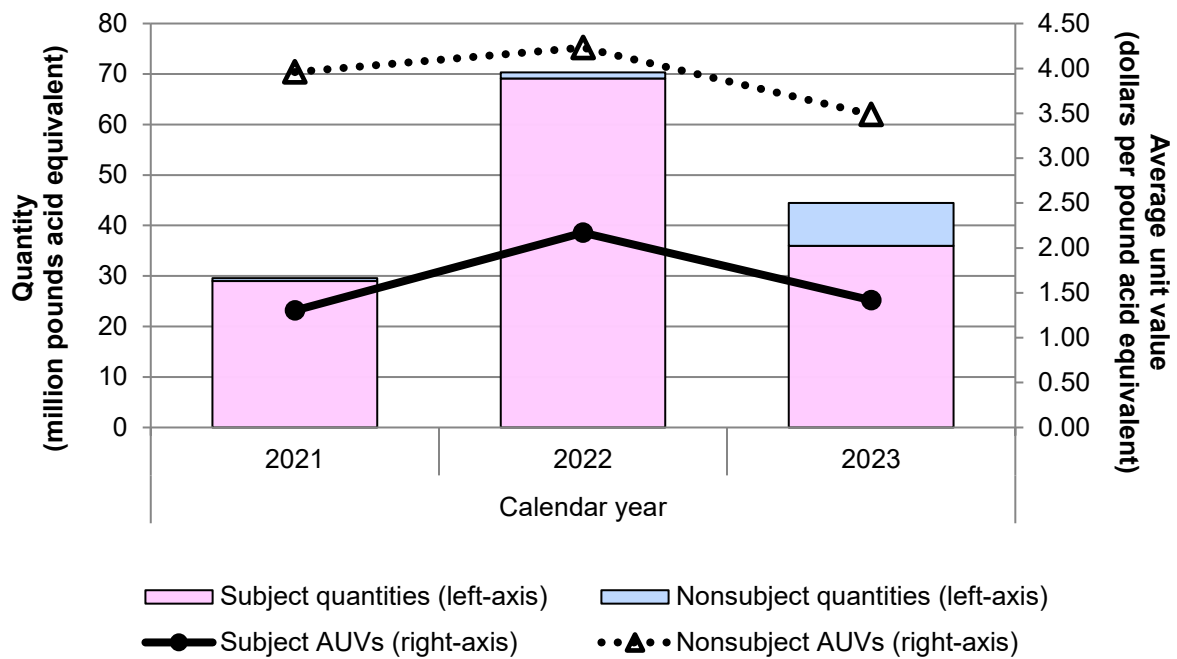
Shares and ratios in percent; ratios represent the ratio to U.S. production

Source	Measure	2021	2022	2023
China	Share of quantity	68.4	72.2	46.5
India	Share of quantity	29.7	26.1	34.4
Subject sources	Share of quantity	98.1	98.3	80.9
Nonsubject sources	Share of quantity	1.9	1.7	19.1
All import sources	Share of quantity	100.0	100.0	100.0
China	Share of value	66.0	69.5	32.7
India	Share of value	28.6	27.3	30.6
Subject sources	Share of value	94.6	96.8	63.2
Nonsubject sources	Share of value	5.4	3.2	36.8
All import sources	Share of value	100.0	100.0	100.0
China	Ratio	***	***	***
India	Ratio	***	***	***
Subject sources	Ratio	***	***	***
Nonsubject sources	Ratio	***	***	***
All import sources	Ratio	***	***	***

Source: Compiled from official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting number 2918.99.2010, accessed on April 11, 2024. Imports are based on the imports for consumption data series. Value data reflect landed duty-paid values.

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

Figure IV-1
2,4-D: U.S. import quantities and average unit values, by source and period



Source: Compiled from official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting number 2918.99.2010, accessed on April 11, 2024. Imports are based on the imports for consumption data series. Value data reflect landed duty-paid values.

Negligibility

The statute requires that an investigation be terminated without an injury determination if imports of the subject merchandise are found to be negligible.⁵ 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.⁶

Imports from China accounted for 46.0 percent of total imports of 2,4-D by quantity from March 2023 through February 2024 (approximately 17.6 million pounds of the 38.3 million pounds imported over the period). Imports from India accounted for 33.9 percent of total imports of 2,4-D by quantity from March 2023 through February 2024 (approximately 13.0 million pounds of the 38.3 million pounds imported over the period).

Table IV-3
2,4-D: U.S. imports in the twelve-month period preceding the filing of the petition, March 2023 through February 2024

Quantity in 1,000 pounds acid equivalent; share in percent

Source of imports	Quantity	Share of quantity
China	17,590	46.0
India	12,991	33.9
Nonsubject sources	7,691	20.1
All import sources	38,272	100.0

Source: Compiled from official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting number 2918.99.2010, accessed on April 11, 2024. Imports are based on the imports for consumption data series.

⁵ 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)).

⁶ Section 771 (24) of the Act (19 U.S.C § 1677(24)).

Cumulation considerations

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

Fungibility

The Commission requested U.S. producers and U.S. importers report their shipments of 2,4-D by 2,4-D acid (“acid”), 2,4-D dimethylamine salt (“salt”), 2,4-D ethylhexyl ester (“ester”), and all other product forms. Table IV-4 and figure IV-2 present data for U.S. shipments of 2,4-D by these chemical form breakouts. 2,4-D acid can be processed into derivative forms of salts or esters. Firms were instructed to report U.S. shipments in the form by which they were consumed in the instances where acid was being internally consumed to produce salts or esters.

U.S. producer Corteva reported *** percent of its internal consumption or U.S. commercial shipments being in acid form with the remaining *** percent being in ester form. U.S. importers from China reported *** percent of U.S. shipments of imports from China being in acid form and *** percent of U.S. shipments in ester form. U.S. importers from India reported *** percent of U.S. shipments of imports from India being in acid form and *** percent of U.S. shipments in ester form. U.S. importers from nonsubject sources reported *** percent of U.S. shipments of imports from nonsubject sources being in acid form, *** percent of U.S. shipments in ester form, and *** percent of U.S. shipments as other.⁷ U.S. producer Corteva reported *** percent of all U.S. shipments of 2,4-D in acid form.

⁷ U.S. importer *** reported the U.S. shipments classified as other which it described as shipments of “***.”

Table IV-4**2,4-D: U.S. producer Corteva's and U.S. importers' U.S. shipments, by source and chemical form, 2023**

Quantity in 1,000 pounds acid equivalent; Share of quantity in percent

Source	Acid	Salt	Ester	All other products	All chemical forms
U.S. producers	***	***	***	***	***
China	***	***	***	***	***
India	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
All sources	***	***	***	***	***

Table continued.

Table IV-4 Continued**2,4-D: U.S. producer Corteva's and U.S. importers' U.S. shipments, by source and chemical form, 2023**

Share across in percent

Source	Acid	Salt	Ester	All other products	All chemical forms
U.S. producers	***	***	***	***	100.0
China	***	***	***	***	100.0
India	***	***	***	***	100.0
Subject sources	***	***	***	***	100.0
Nonsubject sources	***	***	***	***	100.0
All import sources	***	***	***	***	100.0
All sources	***	***	***	***	100.0

Table continued.

Table IV-4 Continued**2,4-D: U.S. producer Corteva's and U.S. importers' U.S. shipments, by source and chemical form, 2023**

Share down in percent

Source	Acid	Salt	Ester	All other products	All chemical forms
U.S. producers	***	***	***	***	***
China	***	***	***	***	***
India	***	***	***	***	***
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: Zeroes, null values, and undefined calculations are suppressed and shown as “---”.

Figure IV-2
2,4-D: U.S. producer Corteva's and U.S. importers' U.S. shipments, by source and chemical form, 2023

* * * * *

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

Geographical markets

Table IV-10 presents U.S. imports of 2,4-D, by source and border of entry in 2023, based on official Commerce import statistics. U.S. imports of 2,4-D from China and India principally entered through the Northern border⁸ of entry (84.7 and 76.8 percent of total entries from each source, respectively). The border of entry with the second highest share of U.S. imports of 2,4-D from China was the Southern border⁹ (10.8 percent of imports from China), while the border of entry with the second highest share of U.S. imports of 2,4-D from India was the Eastern border¹⁰ (16.9 percent of imports from India). China had 4.5 percent of 2023 imports enter through the Eastern border, while 6.3 percent of imports from India entered through the Southern border. Zero imports were reported from both China and India as having entered through the Western border¹¹ in 2023. U.S. imports of 2,4-D from nonsubject sources entered almost entirely through the Southern and Eastern borders in 2023 (with 59.7 percent and 40.3 percent of nonsubject imports entering through those borders, respectively).

⁸ The northern border encompasses the following customs entry districts: Chicago, Illinois; Detroit, Michigan; St. Louis, Missouri; Duluth and Minneapolis, Minnesota; Great Falls, Montana; Pembina, North Dakota; and Cleveland, Ohio.

⁹ The southern border encompasses the following customs entry districts: Mobile, Alabama; New Orleans, Louisiana; Miami and Tampa, Florida; and Dallas-Fort Worth, El Paso, Houston-Galveston, and Laredo, Texas.

¹⁰ The eastern border of entry encompasses the following customs entry districts: Washington, DC; Savannah, Georgia; Portland, Maine; Baltimore, Maryland; Boston, Massachusetts; Charlotte, North Carolina; Buffalo and Ogdensburg, New York; Philadelphia, Pennsylvania; San Juan, Puerto Rico; Charleston, South Carolina; Norfolk, Virginia; and St. Albans, Vermont.

¹¹ The western border encompasses the following customs entry districts: Anchorage, Alaska; Los Angeles, San Diego, and San Francisco, California; Honolulu, Hawaii; Columbia-Snake, Oregon; and Seattle, Washington.

Table IV-5
2,4-D: U.S. imports, by source and by border of entry, 2023

Quantity in 1,000 pounds acid equivalent

Source	East	North	South	West	All borders
China	923	17,499	2,228	---	20,650
India	2,585	11,761	960	---	15,306
Subject sources	3,508	29,260	3,188	---	35,956
Nonsubject sources	3,422	0	5,073	---	8,494
All import sources	6,929	29,260	8,261	---	44,450

Table continued.

Table IV-5 Continued
2,4-D: U.S. imports, by source and by border of entry, 2023

Share across in percent

Source	East	North	South	West	All borders
China	4.5	84.7	10.8	---	100.0
India	16.9	76.8	6.3	---	100.0
Subject sources	9.8	81.4	8.9	---	100.0
Nonsubject sources	40.3	0.0	59.7	---	100.0
All import sources	15.6	65.8	18.6	---	100.0

Table continued.

Table IV-5 Continued
2,4-D: U.S. imports, by source and by border of entry, 2023

Share down in percent

Source	East	North	South	West	All borders
China	13.3	59.8	27.0	---	46.5
India	37.3	40.2	11.6	---	34.4
Subject sources	50.6	100.0	38.6	---	80.9
Nonsubject sources	49.4	0.0	61.4	---	19.1
All import sources	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 number 2918.99.2010, accessed April 11, 2024. Imports are based on the imports for consumption data series.

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 "---".

Presence in the market

Table IV-6 and figure IV-2 present data on monthly entries of U.S. imports of 2,4-D as reported under statistical reporting number 2918.99.2010 between January 2021 and December 2023. Imports from China were present in 34 of the 36 months of the period (with no reported imports in the months of July or August of 2023). Imports from India were present in 33 of the 36 months of the period (with no reported imports in the months of August, September, or October of 2023). Imports from nonsubject sources were present in 20 of the 36 months of the period.

Table IV-6
2,4-D: U.S. imports, by month and source

Quantity in 1,000 pounds acid equivalent

Year	Month	China	India	Subject sources	Nonsubject sources	All import sources
2021	January	2,220	595	2,815	39	2,854
2021	February	159	886	1,045	---	1,045
2021	March	2,501	347	2,847	---	2,847
2021	April	3,885	561	4,446	---	4,446
2021	May	2,116	646	2,761	0	2,761
2021	June	516	222	738	---	738
2021	July	913	511	1,424	198	1,623
2021	August	992	40	1,032	39	1,071
2021	September	1,190	185	1,376	---	1,376
2021	October	2,770	2,207	4,977	---	4,977
2021	November	593	1,489	2,082	---	2,082
2021	December	2,376	1,105	3,480	272	3,752
2022	January	2,857	909	3,766	466	4,232
2022	February	2,460	2,225	4,685	713	5,399
2022	March	3,333	1,948	5,282	---	5,282
2022	April	5,338	2,086	7,425	---	7,425
2022	May	5,139	3,256	8,395	0	8,395
2022	June	5,772	718	6,490	0	6,490
2022	July	7,070	2,052	9,122	---	9,122
2022	August	2,623	841	3,465	0	3,465
2022	September	3,861	444	4,305	---	4,305
2022	October	6,258	889	7,146	0	7,147
2022	November	4,535	1,333	5,869	---	5,869
2022	December	1,536	1,659	3,194	---	3,194

Table continued.

Table IV-6 Continued
2,4-D: U.S. imports, by year, by month, and by source

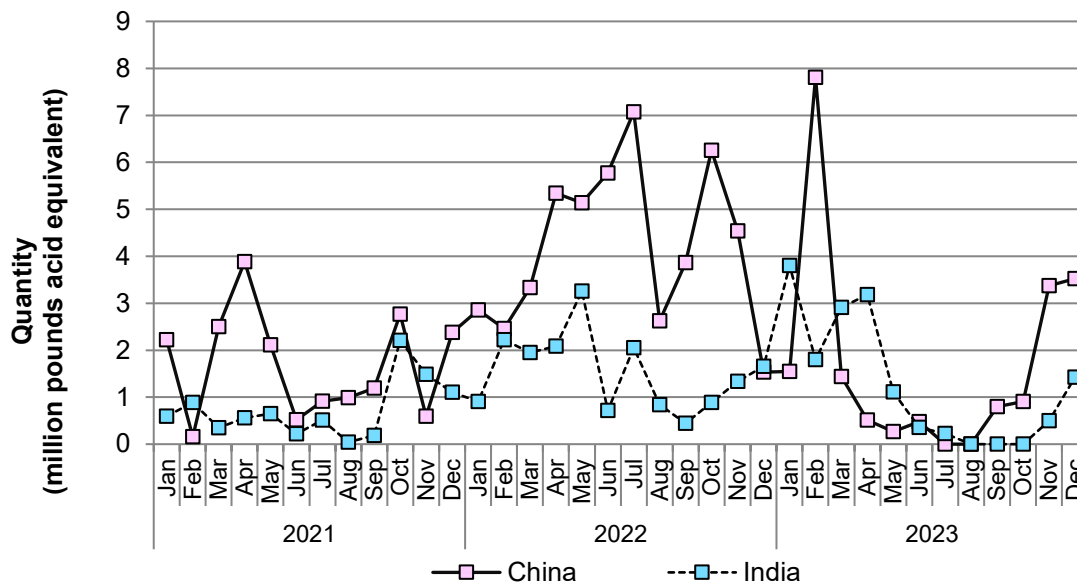
Quantity in 1,000 pounds acid equivalent

Year	Month	China	India	Subject sources	Nonsubject sources	All import sources
2023	January	1,550	3,799	5,349	278	5,627
2023	February	7,808	1,798	9,606	525	10,131
2023	March	1,436	2,911	4,347	2,388	6,735
2023	April	512	3,182	3,695	795	4,490
2023	May	269	1,111	1,381	1,775	3,156
2023	June	475	357	832	1,441	2,273
2023	July	---	225	225	---	225
2023	August	---	---	---	---	---
2023	September	801	---	801	569	1,370
2023	October	905	---	905	---	905
2023	November	3,373	496	3,870	505	4,374
2023	December	3,521	1,426	4,947	218	5,165

Source: Compiled from official U.S. import statistics of the U.S. Department of Commerce Census Bureau using statistical reporting number 2918.99.2010, accessed April 11, 2024. Imports are based on the imports for consumption data series.

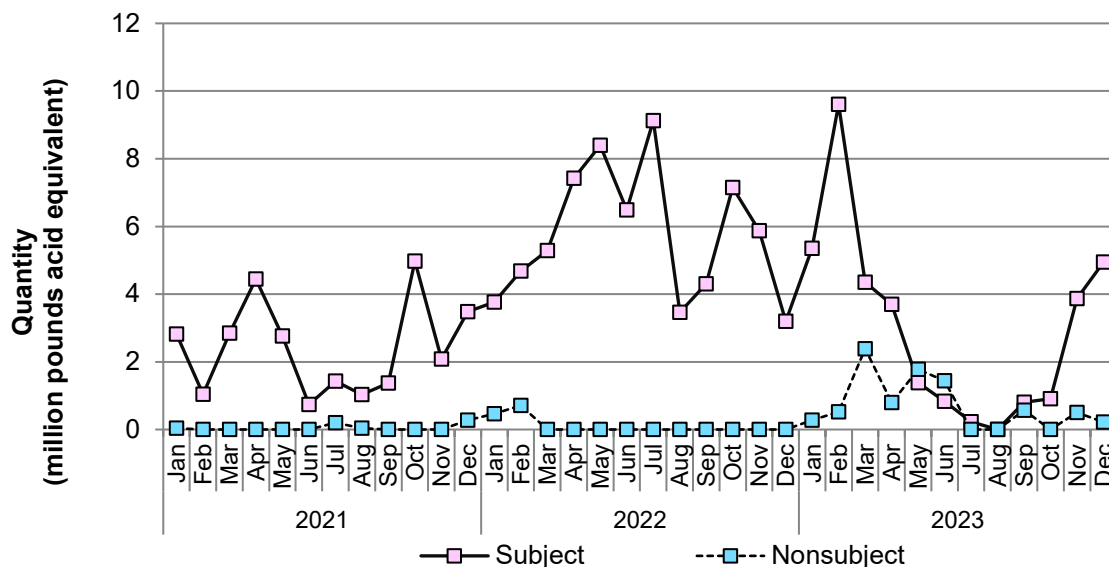
Note: Zeroes, null values, and undefined calculations are suppressed and shown as “---”.

Figure IV-3
2,4-D: U.S. imports from individual subject sources, by source and by month



Source: Compiled from official U.S. import statistics of the U.S. Department of Commerce Census Bureau using statistical reporting number 2918.99.2010, accessed April 11, 2024. Imports are based on the imports for consumption data series.

Figure IV-4
2,4-D: U.S. imports from aggregated subject and nonsubject sources, by month



Source: Compiled from official U.S. import statistics of the U.S. Department of Commerce Census Bureau using statistical reporting number 2918.99.2010, accessed April 11, 2024. Imports are based on the imports for consumption data series.

Apparent U.S. consumption and market shares

Quantity

Tables IV-7 through IV-9 and figures IV-5 through IV-7 present data on apparent U.S. consumption and U.S. market shares by quantity for 2,4-D only including data from U.S. producer Corteva. Apparent U.S. consumption and shares tables also including data from the U.S. converters are presented in appendix D. Because official imports statistics are used, import shares are represented by U.S. imports rather than U.S. shipments of U.S. imports.

Apparent U.S. consumption and market shares for the total market by quantity

Table IV-7 and figure IV-5 show apparent U.S. consumption for the total market by quantity. Total apparent U.S. consumption by quantity increased from *** pounds in 2021 to *** pounds in 2022 (a *** percent increase) before decreasing to *** pounds in 2023 (a *** percent decrease). This represented an irregular increase of *** percent across the 2021-23 period.

U.S. producer Corteva's total U.S. shipments (including internal consumption, commercial shipments, and swaps) increased from *** pounds in 2021 to *** pounds in 2022 (a *** percent increase) before decreasing to *** pounds in 2023 (a *** percent decrease). This represented an irregular decrease of *** percent from 2021-23. U.S. producer Corteva's share of total apparent U.S. consumption decreased irregularly across the period starting at *** percent of total apparent U.S. consumption in 2021 before decreasing to *** percent of apparent U.S. consumption in 2022 and then increasing to *** percent of apparent U.S. consumption in 2023, for an overall irregular decrease of *** percentage points across the period.

Imports from subject sources increased from 29.0 million pounds in 2021 to 69.1 million pounds in 2022 (an increase of 138.2 percent) before decreasing to 36.0 million pounds in 2023 (a decrease of 48.0 percent). This represented an irregular increase of 23.9 percent from 2021-23. Subject imports' share of total apparent U.S. consumption by quantity increased from *** percent in 2021 to *** percent in 2022 before decreasing to *** percent in 2023, for an irregular increase of *** percentage points from 2021-23.

Imports from nonsubject sources increased from 548 thousand pounds in 2021 to 1.2 million pounds in 2022 (an increase of 115.3 percent) before increasing to 8.5 million pounds in 2023 (an additional 620.4 percent increase). This represented an irregular increase of 1,451.1 percent from 2021-23. Nonsubject imports' share of total apparent U.S. consumption by quantity increased in each year of the period starting at *** percent in 2021, increasing to

*** percent in 2022, before increasing *** percent in 2023, a *** percentage point increase across the 2021-23 period.

Table IV-7

2,4-D: Apparent U.S. consumption and market shares for the total market based on quantity data, by source and period

Quantity in 1,000 pounds acid equivalent; Shares in percent

Source	Measure	2021	2022	2023
U.S. producers	Quantity	***	***	***
China	Quantity	20,230	50,783	20,650
India	Quantity	8,793	18,361	15,306
Subject sources	Quantity	29,023	69,145	35,956
Nonsubject sources	Quantity	548	1,179	8,494
All import sources	Quantity	29,571	70,324	44,450
All sources	Quantity	***	***	***
U.S. producers	Share	***	***	***
China	Share	***	***	***
India	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 and official U.S. import statistics of the U.S. Department of Commerce Census Bureau using statistical reporting number 2918.99.2010, accessed April 11, 2024. Imports are based on the imports for consumption data series.

Figure IV-5

2,4-D: Apparent U.S. consumption for the total market based on quantity data, by source and period

* * * * *

Source: Compiled from data submitted in response to Commission questionnaires and official U.S. import statistics of the U.S. Department of Commerce Census Bureau using statistical reporting number 2918.99.2010, accessed April 11, 2024. Imports are based on the imports for consumption data series.

Apparent U.S. consumption and market shares limited to commercial sales by quantity

Table IV-8 and figure IV-6 show apparent U.S. consumption when only including Corteva's commercial sales by quantity. Apparent U.S. consumption limited to U.S. producer Corteva's commercial sales by quantity increased from *** pounds in 2021 to *** pounds in 2022 (an *** percent increase) before decreasing to *** pounds in 2023 (a *** percent decrease). This represented an increase of *** percent across the 2021-23 period.

U.S. producer Corteva's U.S. commercial shipments decreased from *** pounds in 2021 to *** pounds in 2022 (a *** percent decrease) before decreasing to *** pounds in 2023 (an additional *** percent decrease). This represented a decrease of *** percent in commercial shipments from 2021-23. U.S. producer Corteva's share of apparent U.S. consumption limited to commercial shipment decreased across the period starting at *** percent of total apparent U.S. consumption in 2021 before decreasing to *** percent of apparent U.S. consumption in 2022 and then increasing to *** percent of apparent U.S. consumption in 2023. Overall, Corteva's share of total apparent U.S. consumption decreased by *** percentage points from 2021-23.

As noted, imports from subject sources increased from 29.0 million pounds in 2021 to 69.1 million pounds in 2022 (a 138.2 percent increase) before decreasing to 36.0 million pounds in 2023 (a decrease of 48.0 percent). This represented an irregular increase of 23.9 percent from 2021-23. Subject imports' share of apparent U.S. consumption limited to commercial sales by quantity increased from *** percent in 2021 to *** percent in 2022 before decreasing to *** percent in 2023, an irregular increase of *** percentage points from 2021-23.

Imports from nonsubject sources increased from 548 thousand pounds in 2021 to 1.2 million pounds in 2022 (a 115.3 percent increase) before increasing to 8.5 million pounds in 2023 (an additional 620.4 percent increase). This represented an irregular increase of 1,451.1 percent from 2021-23. Nonsubject imports' share of apparent U.S. consumption limited to commercial sales by quantity increased in each year of the period starting at *** percent in 2021, increasing to *** percent in 2022, before increasing to *** percent in 2023, a *** percentage point increase across the 2021-23 period.

Table IV-8**2,4-D: Apparent U.S. consumption and market shares limited to commercial sales quantity data, by source and period**

Quantity in 1,000 pounds acid equivalent; Shares in percent

Source	Measure	2021	2022	2023
U.S. producers	Quantity	***	***	***
China	Quantity	20,230	50,783	20,650
India	Quantity	8,793	18,361	15,306
Subject sources	Quantity	29,023	69,145	35,956
Nonsubject sources	Quantity	548	1,179	8,494
All import sources	Quantity	29,571	70,324	44,450
All sources	Quantity	***	***	***
U.S. producers	Share	***	***	***
China	Share	***	***	***
India	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 and official U.S. import statistics of the U.S. Department of Commerce Census Bureau using statistical reporting number 2918.99.2010, accessed April 11, 2024. Imports are based on the imports for consumption data series.

Figure IV-6**2,4-D: Apparent U.S. consumption limited to commercial sales quantity data, by source and period**

* * * * *

Source: Compiled from data submitted in response to Commission questionnaires and official U.S. import statistics of the U.S. Department of Commerce Census Bureau using statistical reporting number 2918.99.2010, accessed April 11, 2024. Imports are based on the imports for consumption data series.

Apparent U.S. consumption and market shares limited to commercial sales and swaps by quantity

Table IV-9 and figure IV-7 show apparent U.S. consumption only including commercial sales and swaps by quantity. Apparent U.S. consumption limited to U.S. producer Corteva's commercial sales and swaps by quantity increased from *** pounds in 2021 to *** pounds in 2022 (a *** percent increase) before decreasing to *** pounds in 2023 (a *** percent decrease). This represented an irregular increase of *** percent across the 2021-23 period.

U.S. producer Corteva's commercial U.S. shipments and swap shipments decreased from *** pounds in 2021 to *** pounds in 2022 (a *** percent decrease) before decreasing to *** pounds in 2023 (an additional *** percent decrease). This represented a decrease of *** percent from 2021-23. U.S. producer Corteva's share of apparent U.S. consumption limited to commercial shipments and swaps decreased across the period starting at *** percent of total apparent U.S. consumption in 2021 before decreasing to *** percent of apparent U.S. consumption in 2022 and then decreasing to *** percent of apparent U.S. consumption in 2023. Overall, Corteva's share of total apparent U.S. consumption when limited to commercial sales and swaps decreased by *** percentage points from 2021-23.

As noted, imports from subject sources increased from 29.0 million pounds in 2021 to 69.1 million pounds in 2022 (a 138.2 percent increase) before decreasing to 36.0 million pounds in 2023 (a 48.0 percent decrease). This represented an irregular increase of 23.9 percent from 2021-23. Subject imports' share of apparent U.S. consumption limited to commercial sales and swaps by quantity increased from *** percent in 2021 to *** percent in 2022 before decreasing to *** percent in 2023, an irregular increase of *** percentage points from 2021-23.

Imports from nonsubject sources increased from 548 thousand pounds in 2021 by 115.3 percent to 1.2 million pounds in 2022 before increasing an additional 620.4 percent to 8.5 million pounds in 2023. This represented an irregular increase of 1,451.1 percent from 2021-23. Nonsubject imports' share of apparent U.S. consumption limited to commercial sales and swaps by quantity increased in each year of the period starting at *** percent in 2021, increasing to *** percent in 2022, before increasing to *** percent in 2023, a *** percentage point increase across the 2021-23 period.

Table IV-9**2,4-D: Apparent U.S. consumption and market shares combining commercial sales and swaps quantity data, by source and period**

Quantity in 1,000 pounds acid equivalent; Shares in percent

Source	Measure	2021	2022	2023
U.S. producers	Quantity	***	***	***
China	Quantity	20,230	50,783	20,650
India	Quantity	8,793	18,361	15,306
Subject sources	Quantity	29,023	69,145	35,956
Nonsubject sources	Quantity	548	1,179	8,494
All import sources	Quantity	29,571	70,324	44,450
All sources	Quantity	***	***	***
U.S. producers	Share	***	***	***
China	Share	***	***	***
India	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 and official U.S. import statistics of the U.S. Department of Commerce Census Bureau using statistical reporting number 2918.99.2010, accessed April 11, 2024. Imports are based on the imports for consumption data series.

Figure IV-7**2,4-D: Apparent U.S. consumption combining commercial sales and swaps quantity data, by source and period**

* * * * *

Source: Compiled from data submitted in response to Commission questionnaires and official U.S. import statistics of the U.S. Department of Commerce Census Bureau using statistical reporting number 2918.99.2010, accessed April 11, 2024. Imports are based on the imports for consumption data series.

Value

Tables IV-10 through IV-12 and figures IV-8 through IV-10 present data on apparent U.S. consumption and U.S. market shares by value for 2,4-D only including data from U.S. producer Corteva. As noted, because official imports statistics are used, import shares are represented by U.S. imports rather than U.S. shipments of U.S. imports.

Apparent U.S. consumption and market shares for the total market by value

Table IV-10 and figure IV-8 show apparent U.S. consumption for the total market by value. Total apparent U.S. consumption by value increased from \$*** in 2021 to \$*** in 2022 (a *** percent increase) before decreasing to \$*** in 2023 (a *** percent decrease from 2022-23). This represented an irregular crease of *** percent across the 2021-23 period.

The value of U.S. producer Corteva's total U.S. shipments (including internal consumption, commercial shipments, and swaps) increased from \$*** in 2021 to \$*** in 2022 (a *** percent increase) before decreasing to \$*** in 2023 (a *** percent decrease). This represented an irregular decrease of *** percent from 2021-23. U.S. producer Corteva's share of total apparent U.S. consumption decreased irregularly across the period starting at *** percent of total apparent U.S. consumption in 2021 before decreasing to *** percent of apparent U.S. consumption in 2022 and then increasing to *** percent of apparent U.S. consumption in 2023. Overall, Corteva's share of total apparent U.S. consumption decreased irregularly by *** percentage points from 2021-23.

Imports from subject sources increased from \$37.8 million in 2021 to \$150.0 million in 2022 (a 296.7 percent increase) before decreasing to \$50.9 million in 2023 (a 66.1 percent decrease). This represented an irregular increase of 34.6 percent from 2021-23. Subject imports' share of total apparent U.S. consumption by value increased from *** percent in 2021 to *** percent in 2022 before decreasing to *** percent in 2023, an irregular increase of *** percentage points from 2021-23.

Imports from nonsubject sources increased from \$2.2 million in 2021 to \$5.0 million in 2022 (a 130.0 percent increase) before increasing to \$29.6 million in 2023 (an additional 493.7 percent increase). This represented an increase of 1,265.5 percent from 2021-23. Nonsubject imports' share of total apparent U.S. consumption by value increased in each year of the period starting at *** percent in 2021, increasing to *** percent in 2022, before increasing to *** percent in 2023, an *** percentage point increase across the 2021-23 period.

Table IV-10**2,4-D: Apparent U.S. consumption and market shares for the total market based on value data, by source and period**

Value in 1,000 dollars; Shares in percent

Source	Measure	2021	2022	2023
U.S. producers	Value	***	***	***
China	Value	26,394	107,746	26,301
India	Value	11,415	42,259	24,602
Subject sources	Value	37,809	150,005	50,903
Nonsubject sources	Value	2,169	4,989	29,618
All import sources	Value	39,978	154,994	80,521
All sources	Value	***	***	***
U.S. producers	Share	***	***	***
China	Share	***	***	***
India	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 and official U.S. import statistics of the U.S. Department of Commerce Census Bureau using statistical reporting number 2918.99.2010, accessed April 11, 2024. Imports are based on the imports for consumption data series. Value data reflect landed duty-paid values.

Figure IV-8**2,4-D: Apparent U.S. consumption for the total market based on value data, by source and period**

* * * * *

Source: Compiled from data submitted in response to Commission questionnaires and official U.S. import statistics of the U.S. Department of Commerce Census Bureau using statistical reporting number 2918.99.2010, accessed April 11, 2024. Imports are based on the imports for consumption data series. Value data reflect landed duty-paid values.

Apparent U.S. and market shares consumption limited to commercial sales by value

Table IV-11 and figure IV-9 show apparent U.S. consumption only including commercial sales by value. Apparent U.S. consumption limited to U.S. producer commercial sales by value increased from \$*** in 2021 to \$*** in 2022 (a *** percent increase) before decreasing to \$*** in 2023 (a *** percent decrease from 2022-23). This represented an irregular increase of *** percent across the 2021-23 period.

U.S. producer Corteva's commercial U.S. shipments decreased from \$*** in 2021 to \$*** in 2022 (an *** percent decrease) before decreasing to \$*** in 2023 (an additional *** percent decrease). This represented a decrease of *** percent from 2021-23. U.S. producer Corteva's share of apparent U.S. consumption limited to commercial shipment decreased irregularly across the period starting at *** percent of total apparent U.S. consumption in 2021 before decreasing to *** percent of apparent U.S. consumption in 2022 and then increasing to *** percent of apparent U.S. consumption in 2023. Overall, Corteva's share of total apparent U.S. consumption decreased by *** percentage points from 2021-23.

As noted, imports from subject sources increased from \$37.8 million in 2021 to \$150.0 million in 2022 (a 296.7 percent increase) before decreasing to \$50.9 million in 2023 (a 66.1 percent decrease). This represented an irregular increase of 34.6 percent from 2021-23. Subject imports' share of apparent U.S. consumption limited to commercial sales by value increased from *** percent in 2021 to *** percent in 2022 before decreasing to *** percent in 2023, an irregular decrease of *** percentage points from 2021-23.

Imports from nonsubject sources increased from \$2.2 million in 2021 to \$5.0 million in 2022 (a 130.0 percent increase) before increasing to \$29.6 million in 2023 (an additional 493.7 percent increase). This represented a 1,265.5 percent increase from 2021-23. Nonsubject imports' share of apparent U.S. consumption limited to commercial sales by value decreased from *** percent in 2021 to *** percent in 2022, before increasing to *** percent in 2023, a *** percentage point irregular increase across the 2021-23 period.

Table IV-11**2,4-D: Apparent U.S. consumption and market shares limited to commercial sales value data, by source and period**

Value in 1,000 dollars; Shares in percent

Source	Measure	2021	2022	2023
U.S. producers	Value	***	***	***
China	Value	26,394	107,746	26,301
India	Value	11,415	42,259	24,602
Subject sources	Value	37,809	150,005	50,903
Nonsubject sources	Value	2,169	4,989	29,618
All import sources	Value	39,978	154,994	80,521
All sources	Value	***	***	***
U.S. producers	Share	***	***	***
China	Share	***	***	***
India	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 and official U.S. import statistics of the U.S. Department of Commerce Census Bureau using statistical reporting number 2918.99.2010, accessed April 11, 2024. Imports are based on the imports for consumption data series. Value data reflect landed duty-paid values.

Figure IV-9**2,4-D: Apparent U.S. consumption limited to commercial sales value data, by source and period**

* * * * *

Source: Compiled from data submitted in response to Commission questionnaires and official U.S. import statistics of the U.S. Department of Commerce Census Bureau using statistical reporting number 2918.99.2010, accessed April 11, 2024. Imports are based on the imports for consumption data series. Value data reflect landed duty-paid values.

Apparent U.S. consumption and market shares limited to commercial sales and swaps by value

Table IV-12 and figure IV-10 show apparent U.S. consumption limited to Corteva's U.S. commercial and swap sales by value. Apparent U.S. consumption limited to U.S. commercial sales and swaps by value increased from \$*** in 2021 to \$*** in 2022 (a *** percent increase) before decreasing to \$*** in 2023 (a *** percent decrease). This represented an irregular increase of *** percent across the 2021-23 period.

U.S. producer Corteva's commercial U.S. shipments and swap shipments decreased from \$*** in 2021 to \$*** in 2022 (a *** percent decrease) before decreasing to \$*** in 2023 (an additional *** percent decrease). This represented a decrease of *** percent overall from 2021-23. U.S. producer Corteva's share of apparent U.S. consumption limited to commercial shipments and swaps decreased across the period starting at *** percent of total apparent U.S. consumption in 2021 before decreasing to *** percent of apparent U.S. consumption in 2022 and then increasing to *** percent of apparent U.S. consumption in 2023. As such, Corteva's share of total apparent U.S. consumption limited to U.S. commercial sales and swaps decreased irregularly by *** percentage points from 2021-23.

As noted, imports from subject sources increased from \$37.8 million in 2021 to \$150.0 million in 2022 (a 296.7 percent increase) before decreasing to \$50.9 million in 2023 (a 66.1 percent decrease). This represented an irregular increase of 34.6 percent from 2021-23. Subject imports' share of apparent U.S. consumption limited to commercial sales and swaps by value increased from *** percent in 2021 to *** percent in 2022 before decreasing to *** percent in 2023, an irregular increase of *** percentage points from 2021-23.

Imports from nonsubject sources increased from \$2.2 million in 2021 to \$5.0 million in 2022 (a 130.0 percent increase) before increasing to \$29.6 million in 2023 (an additional 493.7 percent increase). This represented an increase of 1,265.5 percent from 2021-23. Nonsubject imports' share of apparent U.S. consumption limited to commercial sales and swaps by value increased in each year of the period starting at *** percent in 2021, increasing to *** percent in 2022, before increasing to *** percent in 2023, a *** percentage point increase across the 2021-23 period.

Table IV-12**2,4-D: Apparent U.S. consumption and market shares combining commercial sales and swaps value data, by source and period**

Value in 1,000 dollars; Shares in percent

Source	Measure	2021	2022	2023
U.S. producers	Value	***	***	***
China	Value	26,394	107,746	26,301
India	Value	11,415	42,259	24,602
Subject sources	Value	37,809	150,005	50,903
Nonsubject sources	Value	2,169	4,989	29,618
All import sources	Value	39,978	154,994	80,521
All sources	Value	***	***	***
U.S. producers	Share	***	***	***
China	Share	***	***	***
India	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 and official U.S. import statistics of the U.S. Department of Commerce Census Bureau using statistical reporting number 2918.99.2010, accessed April 11, 2024. Imports are based on the imports for consumption data series. Value data reflect landed duty-paid values.

Figure IV-10**2,4-D: Apparent U.S. consumption, excluding non-2,4-D acid producing U.S. synthesizers and formulators, combining commercial sales and swaps value data, by source and period**

* * * * *

Source: Compiled from data submitted in response to Commission questionnaires and official U.S. import statistics of the U.S. Department of Commerce Census Bureau using statistical reporting number 2918.99.2010, accessed April 11, 2024. Imports are based on the imports for consumption data series. Value data reflect landed duty-paid values.

Part V: Pricing data

Factors affecting prices

Raw material costs

The raw materials used to produce 2,4-D acid include chloroacetic acid, phenol, and sodium hydroxide. 2,4-D acid is synthesized in two main ways. The first method is the chloroxidization of phenol with chlorine, followed by its condensation with chloroacetic acid. The other method shifts the order of some unitary operations: the condensation of phenol and chloroacetic acid happens first and the chlorination process second.¹ Petitioner also noted that the cost of chlorine has caused an increase in raw material prices during this period of investigation.²

*** and three of seven responding importers reported that raw material prices have fluctuated up since January 1, 2021. Of the remaining four importers, three responding importers reported that raw material prices have fluctuated down, and one importer reported there has been no change in raw material prices.

Importers generally reported that prices for raw materials in 2,4-D have fluctuated. Importer *** reports that the cost for 2,4-D raw materials, such as acetic acid, monochloroacetic acid ("MCAA"), Phenol, and Caustic Soda, increased from 2021 to 2022 and declined from 2022 to 2023. Importer *** also adds that prices fluctuated up in 2022 and 2023 but have fluctuated down in 2024. Importer *** states that increased raw material prices have forced them to increase their selling price.

Transportation costs to the U.S. market

Transportation costs for 2,4-D shipped from subject countries to the United States averaged 12.9 percent for China and 6.5 percent for India during 2023. These estimates were derived from official import data and represent the transportation and other charges on imports.³

¹ Conference transcript, pp 17-19 (Garcia de Alba).

² Conference transcript, p. 161.

³ The estimated transportation costs were obtained by subtracting the customs value from the c.i.f. value of the imports for 2023 and then dividing by the customs value based on the HTS statistical reporting number 2918.99.2010.

U.S. inland transportation costs

U.S. producer Corteva reported that *** typically arranges transportation to its customers, and its average inland transportation cost is *** percent. All reporting importers (6 of 6) reported that they arranged transportation to their customers and reported that inland transportation costs average from 3.0 to 10.0 percent.

Pricing practices

Pricing methods

*** the majority of importers reported that they set prices through transaction-by-transaction negotiations, although importer *** also uses set price lists alongside transaction-by-transaction negotiations. Importer *** determines its pricing through contracts, while importer *** relies on a fixed price list. Importer *** utilizes other methods to determine pricing, mentioning that *** (table V-1).

Table V-1
2,4-D: Count of U.S. producers' and importers' reported price setting methods

Count in number of firms reporting

Method	U.S. producer	U.S. importers
Transaction-by-transaction	***	4
Contract	***	1
Set price list	***	2
Other	***	1
Responding firms	***	7

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.

***, while importers reported selling *** of their 2,4-D on short term contracts, *** sales on annual contracts, and *** spot sales (table V-2).

Table V-2**2,4-D: U.S. producers' and importers' shares of commercial U.S. shipments by type of sale, 2023**

Share in percent

Item	U.S. producer	Subject U.S. importers
Long-term contracts	***	***
Annual contract	***	***
Short-term contracts	***	***
Spot sales	***	***

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

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

*** importer *** reported fixing price and quantity for short-term contracts, which typically last *** days. *** importer *** also reported that it ***. Importer *** reported selling *** percent of its 2,4-D based on fixed quantity annual contracts with price renegotiation but not indexed to raw material cost. The remaining importers reported selling only on a spot sales basis.⁴

Sales terms and discounts

*** importers reported that they usually quote prices on a delivered basis. *** importer *** reported offering a quantity discount, with *** also offering an early payment discount. The remaining responding importers had no policy on discounts.

⁴ *** did not report any terms of sales information.

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 2,4-D products shipped to unrelated U.S. customers during January 2021-December 2023. Firms that imported these products from China and/or India for own use/retail sale were requested to provide import purchase cost data.

Product 1.-- 2,4-D acid, Form: white to brown crystalline solid

Product 2.-- 2,4-D salt, Form: white or cream-colored power

Product 3.-- 2,4-D salt, Form: amber aqueous liquid

Product 4.-- 2,4-D 2-ethylhexylester ("EHE"), Form: dark amber liquid

Price data

U.S. producer Corteva and six importers provided usable pricing data for sales of the requested products, although not all firms reported pricing for all products for all quarters.⁵ Pricing data reported by these firms accounted for approximately *** percent of U.S. producer's commercial U.S. shipments of 2,4-D,⁶ *** percent of commercial U.S. shipments of subject imports from China, and *** percent of commercial U.S. shipments of subject imports from India in 2023.

Price data for products 1 and 4 are presented in tables V-3 to V-4 and figures V-1 to V-2.⁷

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

⁶ 2,4-D acid made up almost all reported pricing product. When adding in all four pricing products, pricing data reported by U.S. producer accounted for *** percent of producer's shipments.

⁷ Pricing product data was not reported by producer or importers for product 2 or product 3.

Table V-3**2,4-D: Weighted-average f.o.b. prices and quantities of domestic and imported product 1 and margins of underselling/(overselling), by quarter**

Quantity in 1,000 pounds acid equivalent; Prices in dollars per pound acid equivalent; Margins in percent

Period	U.S. price	U.S. quantity	China price	China quantity	China margin	India price	India quantity	India margin
2021 Q1	***	***	***	***	***	***	***	***
2021 Q2	***	***	***	***	***	***	***	***
2021 Q3	***	***	***	***	***	***	***	***
2021 Q4	***	***	***	***	***	***	***	***
2022 Q1	***	***	***	***	***	***	***	***
2022 Q2	***	***	***	***	***	***	***	***
2022 Q3	***	***	***	***	***	***	***	***
2022 Q4	***	***	***	***	***	***	***	***
2023 Q1	***	***	***	***	***	***	***	***
2023 Q2	***	***	***	***	***	***	***	***
2023 Q3	***	***	***	***	***	***	***	***
2023 Q4	***	***	***	***	***	***	***	***

Table continued.

Table V-3 Continued

2,4-D: Weighted-average f.o.b. prices and quantities of domestic and imported product 1 and margins of underselling/(overselling), by quarter

Quantity in 1,000 pounds acid equivalent; Prices in dollars per pound acid equivalent; Margins in percent

Period	U.S. price	U.S. quantity	Subject price	Subject quantity	Subject margin
2021 Q1	***	***	***	***	***
2021 Q2	***	***	***	***	***
2021 Q3	***	***	***	***	***
2021 Q4	***	***	***	***	***
2022 Q1	***	***	***	***	***
2022 Q2	***	***	***	***	***
2022 Q3	***	***	***	***	***
2022 Q4	***	***	***	***	***
2023 Q1	***	***	***	***	***
2023 Q2	***	***	***	***	***
2023 Q3	***	***	***	***	***
2023 Q4	***	***	***	***	***

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

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

Note: Product 1: 2,4-D acid, Form: white to brown crystalline solid.

Figure V-1
2,4-D: Weighted-average prices and quantities of domestic and imported product 1, by quarter

Price of product 1

* * * * *

Volume of product 1

* * * * *

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

Note: Product 1: 2,4-D acid, Form: white to brown crystalline solid.

Table V-4**2,4-D: Weighted-average f.o.b. prices and quantities of domestic and imported product 4 and margins of underselling/(overselling), by quarter**

Quantity in 1,000 pounds acid equivalent; Prices in dollars per pound acid equivalent; Margins in percent

Period	U.S. price	U.S. quantity	China price	China quantity	China margin	India price	India quantity	India margin
2021 Q1	***	***	***	***	***	***	***	***
2021 Q2	***	***	***	***	***	***	***	***
2021 Q3	***	***	***	***	***	***	***	***
2021 Q4	***	***	***	***	***	***	***	***
2022 Q1	***	***	***	***	***	***	***	***
2022 Q2	***	***	***	***	***	***	***	***
2022 Q3	***	***	***	***	***	***	***	***
2022 Q4	***	***	***	***	***	***	***	***
2023 Q1	***	***	***	***	***	***	***	***
2023 Q2	***	***	***	***	***	***	***	***
2023 Q3	***	***	***	***	***	***	***	***
2023 Q4	***	***	***	***	***	***	***	***

Table continued.

Table V-4 Continued

2,4-D: Weighted-average f.o.b. prices and quantities of domestic and imported product 4 and margins of underselling/(overselling), by quarter

Quantity in 1,000 pounds acid equivalent; Prices in dollars per pound acid equivalent; Margins in percent

Period	U.S. price	U.S. quantity	Subject price	Subject quantity	Subject margin
2021 Q1	***	***	***	***	***
2021 Q2	***	***	***	***	***
2021 Q3	***	***	***	***	***
2021 Q4	***	***	***	***	***
2022 Q1	***	***	***	***	***
2022 Q2	***	***	***	***	***
2022 Q3	***	***	***	***	***
2022 Q4	***	***	***	***	***
2023 Q1	***	***	***	***	***
2023 Q2	***	***	***	***	***
2023 Q3	***	***	***	***	***
2023 Q4	***	***	***	***	***

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

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

Note: Product 4: 2,4-D 2-ethylhexylester (“EHE”), Form: dark amber liquid.

Figure V-2

2,4-D: Weighted-average prices and quantities of domestic and imported product 4, by quarter

Price of product 4

* * * * *

Volume of product 4

* * * * *

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

Note: Product 4: 2,4-D 2-ethylhexylester ("EHE"), Form: dark amber liquid.

Import purchase cost data

Five importers reported useable import purchase cost data for product 1 and product 4.⁸ Purchase cost data reported by these firms accounted for *** percent of subject imports from China and *** percent of subject imports from India in 2023. Landed duty paid purchase cost data for imports from China and India are presented in tables V-5 to V-6, along with U.S. producers' sales prices.⁹

Importers reporting import purchase cost data were asked to provide additional information regarding the costs and benefits of directly importing 2,4-D.

Two of four importers reported that they incurred additional costs beyond landed duty-paid costs by importing 2,4-D directly rather than purchasing from a U.S. producer or U.S. importer. Of these, one importer estimated the total additional cost incurred as approximately *** percent higher compared to the landed-duty paid value. Firms were also asked to identify specific additional costs they incurred as a result of importing 2,4-D. Reported costs include duties, fees, ocean freight, Asian procurement team, added plant costs (maintenance and cleanout costs), and additional capital cost.

Firms were also asked to describe how these additional costs incurred by importing 2,4-D directly compare with those incurred when purchasing from a U.S. producer or U.S. importer. Importer *** states that Corteva is a competitor and will not sell 2,4-D to them, requiring them to incur the additional cost of purchasing from a foreign producer of 2,4-D. Importer *** explains that Corteva is the sole domestic producer of 2,4-D acid and does not sell that product commercially, requiring them to rely on imported 2,4-D acid for the production of herbicide products despite the burdensome EPA registration process for the importation of 2,4-D in the United States. Importer *** states that the additional cost of importing 2,4-D faces quality challenges with high sodium concentration from imported 2,4-D, leading to added plant costs and additional importing and Asian procurement costs.

Four of five importers reported comparing the costs of importing to the cost of purchasing from a U.S. producer in determining whether to import 2,4-D. These four importers also compare costs to purchasing from a U.S. importer. One importer did not compare the costs of purchasing from U.S. producers or importers.

⁸ Purchase cost data was not reported by any importers for product 2 or product 3.

⁹ 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.

Five importers identified benefits from importing 2,4-D directly instead of purchasing from U.S. producers or importers, including market cost, supply availability, and business sustainability. Importer *** states that they have no choice but to buy 2,4-D from Chinese suppliers because Corteva refuses to supply them. Additionally, importer *** reports that although Corteva is their preferred supplier, the domestic producer did not provide the additional volumes they needed resulting in an increase in purchases of 2,4-D acid from Chinese sources in order to meet their needs and sustain their business operations. Importer *** chooses to import 2,4-D directly instead of purchasing from another U.S. importer due to the increase cost that would be passed to them from the required EPA registration process for importation of 2,4-D. Importer *** reports that Corteva stopped selling 2,4-D acid to them in 2022 which led them to also increase imports of 2,4-D from foreign producers.

Firms were also asked whether the import cost (both excluding and including additional costs) of 2,4-D they imported was lower than the price of purchasing 2,4-D from a U.S. producer or importer. One importer estimated that they saved *** percent of the purchase price by importing 2,4-D rather than purchasing from a U.S. importer and saving approximately *** percent compared to purchasing the product from a U.S. producer.¹⁰ Importer *** reports that importing cost them *** percent more than purchasing domestic product.

¹⁰ Importers *** were the only importers that provided estimate savings information.

Table V-5**2,4-D: Import landed duty-paid purchase costs and domestic prices, quantities of product 1, and price-cost differentials, by quarter**

Quantity in 1,000 pounds acid equivalent; Prices and unit LDP values in dollars per pound acid equivalent; Differentials in percent

Period	U.S. price	U.S. quantity	China unit LDP value	China quantity	China differential	India unit LDP value	India quantity	India differential
2021 Q1	***	***	***	***	***	***	***	***
2021 Q2	***	***	***	***	***	***	***	***
2021 Q3	***	***	***	***	***	***	***	***
2021 Q4	***	***	***	***	***	***	***	***
2022 Q1	***	***	***	***	***	***	***	***
2022 Q2	***	***	***	***	***	***	***	***
2022 Q3	***	***	***	***	***	***	***	***
2022 Q4	***	***	***	***	***	***	***	***
2023 Q1	***	***	***	***	***	***	***	***
2023 Q2	***	***	***	***	***	***	***	***
2023 Q3	***	***	***	***	***	***	***	***
2023 Q4	***	***	***	***	***	***	***	***

Table continued.

Table V-5 Continued

2,4-D: Import landed duty-paid purchase costs and domestic prices, quantities of product 1, and price-cost differentials, by quarter

Quantity in 1,000 pounds acid equivalent; Prices and unit LDP values in dollars per pound acid equivalent; Differentials in percent

Period	U.S. price	U.S. quantity	Subject unit LDP value	Subject quantity	Subject differential
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***

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

Note: Product 1: 2,4-D acid, Form: white to brown crystalline solid.

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

Note: U.S. producer price data is the same as that presented in table V-3.

Figure V-3
2,4-D: U.S. producer prices and import purchase costs, and quantities, of product 1, by 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: 2,4-D acid, Form: white to brown crystalline solid.

Table V-6**2,4-D: Import landed duty-paid purchase costs and domestic prices, quantities of product 4, and price-cost differentials, by quarter**

Quantity in 1,000 pounds acid equivalent; Prices and unit LDP values in dollars per pound acid equivalent; Differentials in percent

Period	U.S. price	U.S. quantity	China unit LDP value	China quantity	China differential	India unit LDP value	India quantity	India differential
2021 Q1	***	***	***	***	***	***	***	***
2021 Q2	***	***	***	***	***	***	***	***
2021 Q3	***	***	***	***	***	***	***	***
2021 Q4	***	***	***	***	***	***	***	***
2022 Q1	***	***	***	***	***	***	***	***
2022 Q2	***	***	***	***	***	***	***	***
2022 Q3	***	***	***	***	***	***	***	***
2022 Q4	***	***	***	***	***	***	***	***
2023 Q1	***	***	***	***	***	***	***	***
2023 Q2	***	***	***	***	***	***	***	***
2023 Q3	***	***	***	***	***	***	***	***
2023 Q4	***	***	***	***	***	***	***	***

Table continued.

Table V-6 Continued**2,4-D: Import landed duty-paid purchase costs and domestic prices, quantities of product 4, and price-cost differentials, by quarter**

Quantity in 1,000 pounds acid equivalent; Prices and unit LDP values in dollars per pound acid equivalent; Differentials in percent

Period	U.S. price	U.S. quantity	Subject unit LDP value	Subject quantity	Subject differential
2021 Q1	***	***	***	***	***
2021 Q2	***	***	***	***	***
2021 Q3	***	***	***	***	***
2021 Q4	***	***	***	***	***
2022 Q1	***	***	***	***	***
2022 Q2	***	***	***	***	***
2022 Q3	***	***	***	***	***
2022 Q4	***	***	***	***	***
2023 Q1	***	***	***	***	***
2023 Q2	***	***	***	***	***
2023 Q3	***	***	***	***	***
2023 Q4	***	***	***	***	***

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

Note: Product 4: 2,4-D 2-ethylhexylester ("EHE"), Form: dark amber liquid.

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

Note: U.S. producer price data is the same as that presented in table V-4.

Figure V-4

2,4-D: U.S. producer prices and import purchase costs, and quantities, of product 4, by 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: 2,4-D 2-ethylhexylester ("EHE"), Form: dark amber liquid.

Price and purchase cost trends

In general, prices increased during January 2021-December 2023. Table V-7 summarizes the price trends, by country and by product. As shown in the table, the domestic price for product 1 increased by *** percent during January 2021-December 2023, and import price for product 1 from China increased to *** percent, while import price for product 1 from India decreased by *** percent (Table V-7).¹¹ Landed duty-paid costs for China increased to *** percent, while landed duty-paid costs for India decreased by *** percent from January 2021-December 2023 (Table V-8).¹²

Table V-7

2,4-D: Summary of price data, by product and source, January 2021 through December 2023

Prices in dollars per pound acid equivalent; Quantity in 1,000 pounds acid equivalent; Change in percent

Product	Source	Number of quarters	Quantity	Low price	High price	First quarter price	Last quarter price	Change over period
Product 1	United States	***	***	***	***	***	***	***
Product 1	China	***	***	***	***	***	***	***
Product 1	India	***	***	***	***	***	***	***
Product 4	United States	***	***	***	***	***	***	***
Product 4	China	***	***	***	***	***	***	***
Product 4	India	***	***	***	***	***	***	***

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

Note: Percentage change from the first quarter in which data were available in 2021 to the last quarter in which data were available in 2023.

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

¹¹ Product 4 was only sold in *** quarters for subject importers and *** quarters for the domestic producer, and a price change was not calculated for this time period. No importers reported price data for product 2 or product 3 from China or India.

¹² Purchase cost data for product 4 was only reported for *** for China, and a price change was not calculated for this period. No importers reported purchase cost data for product 2 or product 3 from China or India.

Table V-8**2,4-D: Summary of purchase cost data, by product and source, January 2021 through December 2023**

Prices and unit LDP values in dollars per pound acid equivalent; Quantity in 1,000 pounds acid equivalent; Change in percent

Product	Source	Number of quarters	Quantity	Low price/ Unit LDP value	High price/ Unit LDP value	First quarter price/Unit LDP value	Last quarter price/Unit LDP value	Change over period
Product 1	United States	***	***	***	***	***	***	***
Product 1	China	***	***	***	***	***	***	***
Product 1	India	***	***	***	***	***	***	***
Product 4	United States	***	***	***	***	***	***	***
Product 4	China	***	***	***	***	***	***	***
Product 4	India	***	***	***	***	***	***	***

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

Note: Percentage change from the first quarter in which data were available in 2021 to the last quarter in which data were available in 2023.

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

Price and purchase cost comparisons

Price comparisons

As shown in tables V-9 and V-10, prices for product imported from China were below those for U.S.-produced product in 5 of 14 instances (*** pounds); margins of underselling ranged from *** to *** percent. In the remaining 9 instances (*** pounds), prices for product from China were between *** and *** percent above prices for the domestic product. Prices for product imported from India were below those for U.S.-produced product in 12 of 17 instances (*** pounds); margins of underselling ranged from *** to *** percent. In the remaining 5 instances (*** pounds), prices for product from India were between *** and *** percent above prices for the domestic product.

Table V-9**2,4-D: Instances of underselling and overselling and the range and average of margins, by product**

Quantity in 1,000 pounds acid equivalent; Margins in percent

Products	Type	Number of quarters	Quantity	Average margin	Min margin	Max margin
Product 1	Underselling	14	***	***	***	***
Product 2	Underselling	---	***	***	***	***
Product 3	Underselling	---	***	***	***	***
Product 4	Underselling	3	***	***	***	***
All products	Underselling	17	***	***	***	***
Product 1	Overselling	8	***	***	***	***
Product 2	Overselling	---	***	***	***	***
Product 3	Overselling	---	***	***	***	***
Product 4	Overselling	6	***	***	***	***
All products	Overselling	14	***	***	***	***

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.

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

Table V-10**2,4-D: Instances of underselling and overselling and the range and average of margins, by source**

Quantity in 1,000 pounds acid equivalent; Margins in percent

Sources	Type	Number of quarters	Quantity	Average margin	Min margin	Max margin
China	Underselling	5	***	***	***	***
India	Underselling	12	***	***	***	***
All subject sources	Underselling	17	***	***	***	***
China	Overselling	9	***	***	***	***
India	Overselling	5	***	***	***	***
All subject sources	Overselling	14	***	***	***	***

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 tables V-11 and V-12, landed duty-paid costs for 2,4-D imported from China were below the sales price for U.S.-produced product in 12 of 13 instances (*** pounds); price-cost differentials ranged from *** to *** percent. In the remaining instance (*** pounds), landed duty-paid costs for 2,4-D from China were *** percent above sales prices for the domestic product. Landed duty-paid costs for 2,4-D imported from India

were below those for U.S.-produced product in 9 of 10 instances (** pounds); margins of underselling ranged from ** to ** percent. In the remaining 1 instance (** pounds), the price for Indian product was ** percent higher than domestic product.

Table V-11

2,4-D: Instances of lower and higher import purchase costs and the range and average of price-cost differentials, by product

Quantity in 1,000 pounds acid equivalent; Differentials in percent

Products	Type	Number of quarters	Quantity	Average differential	Min differential	Max differential
Product 1	Lower than US	21	***	***	***	***
Product 2	Lower than US	---	***	***	***	***
Product 3	Lower than US	---	***	***	***	***
Product 4	Lower than US	---	***	***	***	***
All products	Lower than US	21	***	***	***	***
Product 1	Higher than US	1	***	***	***	***
Product 2	Higher than US	---	***	***	***	***
Product 3	Higher than US	---	***	***	***	***
Product 4	Higher than US	1	***	***	***	***
All products	Higher than US	2	***	***	***	***

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.

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

Table V-12

2,4-D: Instances of lower and higher import purchase costs and the range and average of price-cost differentials, by source

Quantity in 1,000 pounds acid equivalent; Differentials in percent

Sources	Type	Number of quarters	Quantity	Average differential	Min differential	Max differential
China	Lower than US	12	***	***	***	***
India	Lower than US	9	***	***	***	***
All subject sources	Lower than US	21	***	***	***	***
China	Higher than US	1	***	***	***	***
India	Higher than US	1	***	***	***	***
All subject sources	Higher than US	2	***	***	***	***

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. producer of 2,4-D report purchasers with which they experienced instances of lost sales or revenue due to competition from imports of 2,4-D from China and/or India during January 2021-December 2023. U.S. producer Corteva reported ***. U.S. producer Corteva submitted lost sales and lost revenue allegations identifying ***. All allegations were against ***.

Staff contacted *** purchasers and received responses from five purchasers.¹³ Responding purchasers reported purchasing *** pounds of 2,4-D during January 2021-December 2023 (table V-13).

Table V-13
2,4-D: Purchasers' reported purchases and imports, by firm and source

Quantity in 1,000 pounds acid equivalent; Change in shares in percentage points

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

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

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

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

During 2023, responding purchasers purchased or imported 9.2 percent from U.S. producers, 35.7 percent from China, and 30.9 percent from India of their total purchases or imports.¹⁴ Purchasers were asked about changes in their purchasing patterns from different sources since 2021. Of the responding purchasers, four reported decreasing or downward fluctuating purchases from domestic producers, none reported increasing purchases from

¹³ Purchaser *** was not identified on the petitioner allegation list, but submitted a usable lost sales lost revenue questionnaire. Identified purchaser *** did not submit a lost sales lost revenue questionnaire.

¹⁴ No purchasers reported purchasing nonsubject sources or from unknown sources.

domestic producers, and one did not purchase any domestic product.¹⁵ Explanations for decreasing purchases of domestic product included lack of domestic supply, adjusted domestic product volume, and market price. Purchaser *** states that its volume from domestic supplier was adjusted on mutual agreement with the supplier. Purchaser *** states that despite expressing an interest in increasing its annual purchases of 2,4-D acid, Corteva would not supply additional volumes above allotment. They further state that in 2021, Corteva notified them that they would no longer supply 2,4-D acid due to capacity constraints at their production facility forcing the company to purchase 2,4-D overseas. Purchaser *** reiterates this stating it has historically purchased 2,4-D acid and esters from Corteva, and that in 2020, Corteva stopped selling 2,4-D acid to them and 2,4-D esters in 2022—with Corteva stating insufficient capacity to supply both times. As a result of Corteva’s refusal to supply, they were required to increase imports of 2,4-D from China and other foreign manufacturers.

Table V-14
2,4-D: 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	0	0	0	1	3	1
China	1	3	0	1	0	0
India	1	0	1	1	0	2
Nonsubject sources	0	2	0	0	0	1
Sources unknown	0	0	0	1	0	3

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

Of the five responding purchasers, three reported that, since 2021, they had purchased imported 2,4-D from China instead of U.S.-produced product and two had reported that they had purchased imported 2,4-D from India instead of U.S.-produced product. Two of these purchasers reported that subject import prices were lower than U.S.-produced product, and one of these purchasers reported that price was a primary reason for the decision to purchase imported product rather than U.S.-produced product. One purchaser estimated the quantity of 2,4-D it purchased from China instead of domestic product to be approximately *** pounds (table V-15 and table V-16). Reasons purchasers identified for buying from subject sources were adjustments for reduced domestic supply in volume, refusal of supply by Corteva, or the availability of imports to compensate for the lack of availability from a domestic supplier.

¹⁵ Of the five responding purchasers, one purchaser indicated that they did not know the source of the 2,4-D they purchased.

Table V-15**2,4-D: Purchasers' responses to purchasing subject imports instead of domestic product, by firm**

Quantity in 1,000 pounds acid equivalent

Firm	Purchased subject imports instead of domestic	Imports priced lower	Choice based on price	Quantity	Narrative on reasons for purchasing imports
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
All firms	Yes--4; No--1	Yes--2; No--2	Yes--1; No--3	***	NA

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

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

Table V-16**2,4-D: Purchasers' responses to purchasing subject imports instead of domestic product, by source**

Count in number of firms reporting; Quantity in 1,000 pounds acid equivalent

Source	Purchased subject imports instead of domestic	Imports priced lower	Choice based on price	Quantity
China	3	2	1	***
India	2	---	---	***
Subject sources	4	2	1	***

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

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

Of the five responding purchasers, one reported that the U.S. producer had reduced prices in order to compete with lower-priced imports from China and India, and one purchaser reported that they did not know (table V-17). The reported price reduction was estimated to be *** percent. In describing the price reductions, the purchaser indicated that it was due to reduction in market price.

Table V-17**2,4-D: Purchasers' responses to U.S. producer price reductions, by firm**

Count in number of firms reporting; Price reductions in percent

Firm	Purchased subject imports instead of domestic	Imports priced lower	Narrative on reasons for purchasing imports
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
All firms	Yes--1; No--3	***	NA

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 *** reports that it purchases and imports 2,4-D acid to convert into salts, which are ***. The company imports as there is no merchant market for domestically produced 2,4-D acid. Corteva is the only domestic manufacturer of 2,4-D acid and uses similar processes to convert it into salts and esters, making Corteva the leading player in this particular herbicide product market. *** reports that purchasers can also be producers in stating that it is acquiring 2,4-D acid from ***. Purchaser *** reports that it historically purchased around *** pounds per year from Corteva but faced constraints when attempting to increase these volumes annually due to capacity limitations at Corteva's production facility, prompting them to seek alternative sourcing options from Chinese and Indian suppliers when supply was disrupted to sustain operations while meeting customer base obligations efficiently.

Part VI: Financial experience of U.S. producers

Background¹

The petitioner, Corteva, is the sole U.S. producer of 2,4-D in all its forms (acid as well as the acid-derived forms ester and salt). Corteva reported financial data for a fiscal year ending December 31st and on the basis of GAAP.^{2 3} Internal consumption accounted for the large majority of Corteva's revenue (***) percent), with swap transactions accounting for *** percent and commercial sales (including exports) accounting for *** percent from 2021 to 2023.^{4 5}

¹ The following abbreviations are used in the tables and/or text of this section: generally accepted accounting principles ("GAAP"), net sales ("NS"), cost of goods sold ("COGS"), selling, general, and administrative expenses ("SG&A expenses"), average unit values ("AUVs" or "per-unit basis"), research and development expenses ("R&D expenses"), and return on assets ("ROA"), and January 1, 2021 to December 31, 2023 ("period examined").

² Corteva's 2,4-D operations are in the Crop Protection reportable segment and accounted for less than *** percent of consolidated net sales in 2023. Corteva's 2023 Form 10-K, pp. 42-44 and F-5 to F-6 (as filed) and Corteva's U.S. producer questions, III-9a.

³ The estimated shares of net sales of the three forms of 2,4-D produced at Corteva's dedicated Midland, Michigan plant in 2023 are: 2,4-D acid form *** percent, 2,4-D ester form *** percent, and 2,4-D salt form *** percent. Corteva's postconference brief, p. 32 and email from Daniel Cannistra, Counsel for Corteva, April 24, 2024.

⁴ ***.

⁵ Tolling arrangements of U.S. producer Corteva accounted for less than *** percent of total production by quantity from 2021 to 2023 ***. *** during this period. ***. In addition, Corteva has ***. Corteva's U.S. producer questionnaire, III-4 and email from Daniel Cannistra, Counsel for Corteva, April 24, 2024.

Operations on 2,4-D

Table VI-1 presents aggregated data on U.S. producer Corteva’s 2,4-D operations in the overall market (also referred to as the “total market” elsewhere in this report), while table VI-2 presents corresponding changes in AUVs in the overall market.^{6 7} Tables VI-3 and VI-4 present financial results limited to commercial sales (including exports) and corresponding changes in AUVs, respectively. Tables VI-5 and VI-6 present financial results specific to Corteva’s swap transactions and corresponding changes in AUVs, respectively. Finally, tables VI-7 and VI-8 present financial results combining commercial sales and swap transactions and corresponding changes in AUVs, respectively.

⁶ Data in appendix F reflect the combined financial data of U.S. producer Corteva and four U.S. converters of 2,4-D (***), with *** accounting for *** percent of combined net sales quantity data in the overall/total market from 2021 to 2023 (table F-1).

⁷ *** of 2,4-D reported swap transactions or transfers to related firms during the period examined.

Table VI-1**2,4-D: U.S. producer Corteva's results of operations in the overall market, by item and period**

Quantity in 1,000 pounds acid equivalent; value in 1,000 dollars; ratios in percent

Item	Measure	2021	2022	2023
Commercial sales	Quantity	***	***	***
Swap transactions	Quantity	***	***	***
Internal consumption	Quantity	***	***	***
Total net sales	Quantity	***	***	***
Commercial sales	Value	***	***	***
Swap transactions	Value	***	***	***
Internal consumption	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.

Table VI-1 Continued**2,4-D: U.S. producer Corteva's results of operations in the overall market, by item and period**

Shares in percent; unit values in dollars per pound acid equivalent; count in number of firms reporting

Item	Measure	2021	2022	2023
COGS: Raw materials	Share	***	***	***
COGS: Direct labor	Share	***	***	***
COGS: Other factory	Share	***	***	***
COGS: Total	Share	***	***	***
Commercial sales	Unit value	***	***	***
Swap transactions	Unit value	***	***	***
Internal consumption	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	***	***	***

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

Note: Shares represent the share of COGS. Shares and ratios shown as "0.00" represent values greater than zero, but less than "0.005" percent. Zeroes, null values, and undefined calculations are suppressed and shown as "---".

Table VI-2**2,4-D: Changes in AUVs between comparison periods in the overall market of U.S. producer Corteva**

Changes in percent

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

Table continued.

Table VI-2 Continued**2,4-D: Changes in AUVs between comparison periods in the overall market of U.S. producer Corteva**

Changes in dollars per pound acid equivalent

Item	2021-23	2021-22	2022-23
Commercial sales	▼ ***	▲ ***	▼ ***
Swap transactions	▲ ***	▲ ***	▼ ***
Internal consumption	▼ ***	▲ ***	▼ ***
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: 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.

Table VI-3**2,4-D: U.S. producer Corteva's results of operations limited to commercial sales, by item and period**

Quantity in 1,000 pounds acid equivalent; value in 1,000 dollars; ratios in percent

Item	Measure	2021	2022	2023
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	***	***	***
COGS: Raw materials	Ratio to NS	***	***	***
COGS: Direct labor	Ratio to NS	***	***	***
COGS: Other factory	Ratio to NS	***	***	***
COGS: Total	Ratio to NS	***	***	***
Gross profit	Ratio to NS	***	***	***
SG&A expense	Ratio to NS	***	***	***
Operating income or (loss)	Ratio to NS	***	***	***
Net income or (loss)	Ratio to NS	***	***	***

Table continued.

Table VI-3 Continued**2,4-D: U.S. producer Corteva's results of operations limited to commercial sales, by item and period**

Shares in percent; unit values in dollars per pound acid equivalent; count in number of firms reporting

Item	Measure	2021	2022	2023
COGS: Raw materials	Share	***	***	***
COGS: Direct labor	Share	***	***	***
COGS: Other factory	Share	***	***	***
COGS: Conversion costs (direct labor + other factory)	Share	***	***	***
COGS: Total	Share	***	***	***
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	***	***	***

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

Note: Shares represent the share of COGS. Zeroes, null values, and undefined calculations are suppressed and shown as "---".

Table VI-4**2,4-D: Changes in AUVs between comparison periods limited to commercial sales of U.S. producer Corteva**

Changes in percent

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

Table continued.

Table VI-4 Continued**2,4-D: Changes in AUVs between comparison periods limited to commercial sales of U.S. producer Corteva**

Changes in dollars per pound acid equivalent

Item	2021-23	2021-22	2022-23
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.

Table VI-5**2,4-D: U.S. producer Corteva's results of operations limited to swap transactions, by item and period**

Quantity in 1,000 pounds acid equivalent; value in 1,000 dollars; ratios in percent

Item	Measure	2021	2022	2023
Swap transactions	Quantity	***	***	***
Swap transactions	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	***	***	***
COGS: Raw materials	Ratio to NS	***	***	***
COGS: Direct labor	Ratio to NS	***	***	***
COGS: Other factory	Ratio to NS	***	***	***
COGS: Total	Ratio to NS	***	***	***
Gross profit	Ratio to NS	***	***	***
SG&A expense	Ratio to NS	***	***	***
Operating income or (loss)	Ratio to NS	***	***	***
Net income or (loss)	Ratio to NS	***	***	***

Table continued.

Table VI-5 Continued**2,4-D: U.S. producer Corteva's results of operations limited to swap transactions, by item and period**

Shares in percent; unit values in dollars per pound acid equivalent; count in number of firms reporting

Item	Measure	2021	2022	2023
COGS: Raw materials	Share	***	***	***
COGS: Direct labor	Share	***	***	***
COGS: Other factory	Share	***	***	***
COGS: Conversion costs (direct labor + other factory)	Share	***	***	***
COGS: Total	Share	***	***	***
Swap transactions	Unit value	***	***	***
COGS: Raw materials	Unit value	***	***	***
COGS: Direct labor	Unit value	***	***	***
COGS: Other factory	Unit value	***	***	***
COGS: Total	Unit value	***	***	***
Gross profit or (loss)	Unit value	***	***	***
SG&A expenses	Unit value	***	***	***
Operating income or (loss)	Unit value	***	***	***
Net income or (loss)	Unit value	***	***	***
Operating losses	Count	***	***	***
Net losses	Count	***	***	***
Data	Count	***	***	***

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

Note: Shares represent the share of COGS. Zeroes, null values, and undefined calculations are suppressed and shown as "---".

Table VI-6**2,4-D: Changes in AUVs between comparison periods limited to swap transactions of U.S. producer Corteva**

Changes in percent

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

Table continued.

Table VI-6 Continued**2,4-D: Changes in AUVs between comparison periods limited to swap transactions of U.S. producer Corteva**

Changes in dollars per pound acid equivalent

Item	2021-23	2021-22	2022-23
Swap transactions	▲ ***	▲ ***	▼ ***
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.

Table VI-7**2,4-D: U.S. producer Corteva's results of operations combining commercial sales and swap transactions, by item and period**

Quantity in 1,000 pounds acid equivalent; value in 1,000 dollars; ratios in percent

Item	Measure	2021	2022	2023
Commercial sales & swap transactions	Quantity	***	***	***
Commercial sales & swap transactions	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	***	***	***
COGS: Raw materials	Ratio to NS	***	***	***
COGS: Direct labor	Ratio to NS	***	***	***
COGS: Other factory	Ratio to NS	***	***	***
COGS: Total	Ratio to NS	***	***	***
Gross profit	Ratio to NS	***	***	***
SG&A expense	Ratio to NS	***	***	***
Operating income or (loss)	Ratio to NS	***	***	***
Net income or (loss)	Ratio to NS	***	***	***

Table continued.

Table VI-7 Continued

2,4-D: U.S. producer Corteva's results of operations combining commercial sales and swap transactions, by item and period

Shares in percent; unit values in dollars per pound acid equivalent; count in number of firms reporting

Item	Measure	2021	2022	2023
COGS: Raw materials	Share	***	***	***
COGS: Direct labor	Share	***	***	***
COGS: Other factory	Share	***	***	***
COGS: Conversion costs (direct labor + other factory)	Share	***	***	***
COGS: Total	Share	***	***	***
Commercial sales & swap transactions	Unit value	***	***	***
COGS: Raw materials	Unit value	***	***	***
COGS: Direct labor	Unit value	***	***	***
COGS: Other factory	Unit value	***	***	***
COGS: Total	Unit value	***	***	***
Gross profit or (loss)	Unit value	***	***	***
SG&A expenses	Unit value	***	***	***
Operating income or (loss)	Unit value	***	***	***
Net income or (loss)	Unit value	***	***	***
Operating losses	Count	***	***	***
Net losses	Count	***	***	***
Data	Count	***	***	***

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

Note: Shares represent the share of COGS. Zeroes, null values, and undefined calculations are suppressed and shown as "---".

Table VI-8**2,4-D: Changes in AUVs between comparison combining commercial sales and swap transactions of U.S. producer Corteva**

Changes in percent

Item	2021-23	2021-22	2022-23
Commercial sales & swap transactions	▲ ***	▲ ***	▼ ***
COGS: Raw materials	▲ ***	▲ ***	▼ ***
COGS: Direct labor	▲ ***	▲ ***	▲ ***
COGS: Other factory	▲ ***	▲ ***	▼ ***
COGS: Total	▲ ***	▲ ***	▼ ***

Table continued.

Table VI-8 Continued**2,4-D: Changes in AUVs between comparison periods combining commercial sales and swap transactions of U.S. producer Corteva**

Changes in dollars per pound acid equivalent

Item	2021-23	2021-22	2022-23
Commercial sales & swap transactions	▲ ***	▲ ***	▼ ***
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.

Net sales

As presented in table VI-1, overall net sales include commercial sales (including exports), internal consumption, and swap transactions.⁸ In overall operations, net sales quantity and value both irregularly decreased from 2021 to 2023. Internal consumption quantity (the largest share of net sales) increased irregularly while the value decreased irregularly from 2021 to 2023; commercial sales and swap transactions decreased consistently in both quantity and value.⁹ Differences in net sales were somewhat attributable to differences in product mix, e.g., the three 2,4-D forms (acid, ester, and salt) sold in each of the four financial breakouts presented in tables VI-1, VI-3, VI-5, and VI-7.¹⁰

Net sales AUVs decreased from 2021 to 2023 in the overall market (table VI-1) and commercial sales breakout (table VI-3) while AUVs increased in swap transactions (table VI-5) and the combined commercial sales plus swap transactions breakout (table VI-7). Internal consumption made up the *** share of sales volume and revenue in the overall market (table VI-1), with internal consumption AUVs irregularly declining from 2021 to 2023. Commercial sales (including exports) accounted for the highest AUVs (but the smallest share of sale volume and revenue) while swap transaction AUVs were the lowest in all three years examined.¹¹

***.¹²

⁸ Internal consumption accounted for *** percent in 2021 to *** percent in 2023, commercial sales represented *** percent in 2021 to *** percent in 2023, and swap transactions represented *** percent in 2021 to *** percent in 2023 of Corteva's total net sales quantity in the overall market.

⁹ Corteva ***. Email from Daniel Cannistra, Counsel for Corteva, April 24, 2024.

¹⁰ Corteva ***. Ibid.

¹¹ Swap transaction quantities and values ***. Email from Daniel Cannistra, Counsel for Corteva, April 24, 2024.

¹² Corteva's postconference brief, pp. 14-15.

Cost of goods sold and gross profit or loss¹³

As presented in tables VI-1, VI-3, VI-5, and VI-7, raw material costs represented the majority of total COGS, ranging from *** percent of total COGS from 2021 to 2023. In absolute values, raw materials irregularly decreased in the overall market (table VI-1) but consistently decreased in the other three financial breakouts (tables VI-3, VI-5, and VI-7). On a per-unit basis, raw material costs irregularly increased in all four financial breakouts (tables VI-1, VI-3, VI-5, and VI-7).¹⁴ As a share of net sales, raw material cost trends varied in relation to the sales values in each breakout: irregularly increasing in the overall market (table VI-1) and in the combined commercial sales and swap transactions (table VI-7); consistently increasing in the commercial sales only breakout (table VI-3); and, irregularly decreasing for swap transactions (table VI-5) from 2021 to 2023. Monochloroacetic acid (“MCAA”) ***, ***, phenol, caustic soda, *** chlorine and hydrochloric acid.¹⁵ Corteva cited chlorine as the raw material item ***; in addition, the market price for phenol increased by approximately *** percent from 2021 to 2023.¹⁶ Table VI-9 presents Corteva’s raw material cost data, by type.

¹³ Corteva used ***, across all four financial breakouts presented in tables VI-1, VI-3, VI-5, and VI-7. Corteva is *** for raw materials, direct labor, and other factory costs in all four financial breakouts. Corteva’s U.S. producer questionnaire, III-8a to III-8c and email from Daniel Cannistra, Counsel for Corteva, April 24, 2024.

¹⁴ Corteva used ***. Ibid.

¹⁵ Corteva reported *** from Q4 2021 to Q2 2022 related to sourcing ***. Since Q2 2022, Corteva reported that the ***. Corteva’s U.S. producer questionnaire, II-3d and III-18; and, email from Daniel Cannistra, Counsel for Corteva, April 24, 2024.

¹⁶ Daniel Cannistra, Counsel for Corteva, April 24, 2024.

Table VI-9**2,4-D: U.S. producer Corteva's raw material costs in the overall market in 2023**

Value in 1,000 dollars; unit values in dollars per pound acid equivalent; share of value in percent

Item	Value	Unit value	Share of value
Monochloroacetic acid (MCAA)	***	***	***
Phenol	***	***	***
Caustic soda	***	***	***
Chlorine	***	***	***
Hydrochloric acid	***	***	***
All raw materials	***	***	***

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

Note: Data above provides specific raw material items of the total raw material value in 2023 presented in table VI-1.

Other factory costs account for the second largest share of total COGS in all four financial breakouts, ranging from *** percent from 2021 to 2023 (tables VI-1, VI-3, VI-5, and VI-7). In absolute values, other factory costs showed the following trends from 2021 to 2023: irregularly increasing in the overall market (table VI-1); irregularly decreasing in commercial sales (table VI-3); consistently decreasing in swap transactions (table VI-5); and, irregularly decreasing in the combined commercial sales and swap transactions (table VI-7). As a ratio to net sales and on a per-unit basis, other factory costs irregularly increased in all four financial breakouts from 2021 to 2023 (tables VI-1, VI-3, VI-5, and VI-7). Corteva explained that *** for increases in other factory costs from 2021 to 2023.¹⁷

Direct labor costs, which accounted for the smallest share of total COGS, ranged from *** percent from 2021 to 2023 (tables VI-1, VI-3, VI-5, and VI-7). In absolute values, direct labor costs showed the following trends from 2021 to 2023: consistently increasing in the overall market (table VI-1); consistently decreasing in the other three breakouts (commercial sales (table VI-3), swap transactions (table VI-5), and combined commercial sales and swap transactions (table VI-7)). As a ratio to net sales and on a per-unit basis, direct labor costs irregularly increased in all four financial breakouts from 2021 to 2023 (tables VI-1, VI-3, VI-5, and VI-7). Corteva explained that direct labor AUV increases were the result of ***.¹⁸

In absolute values, total COGS showed the following trends from 2021 to 2023; irregularly decreasing in the overall market (table VI-1) but consistently decreasing in the other three breakouts (commercial sales (table VI-3), swap transactions (table VI-5), and the combined commercial sales and swap transactions breakout (table VI-7). As a ratio to net sales,

¹⁷ Ibid.

¹⁸ Email from Daniel Cannistra, Counsel for Corteva, April 24, 2024.

total COGS consistently increased in three financial breakouts (overall market (table VI-1), commercial sales (table VI-3), and the combined commercial sales plus swap transactions breakout (table VI-7)), with swap transactions irregularly increasing *** (table VI-5). The AUVs of total COGS irregularly increased from 2021 to 2023 in all four financial breakouts, reflecting the previously discussed irregular increases in per-unit raw materials, direct labor, and other factory costs (tables VI-1, VI-3, VI-5, and VI-7).

Gross profit in Corteva's overall market operations consistently decreased from *** in 2021 to *** in 2023 (table VI-1). Gross profits in its commercial sales (table VI-3) and the combined commercial sales plus swap transactions breakout (table VI-7) irregularly declined from 2021 to 2023. Unlike the other three financial breakouts, gross profit in Corteva's swap transactions (table VI-5) increased but were still in *** (from *** in 2021 to *** in 2023). Gross margins (total gross profit divided by total net sales) declined in all four financial breakouts from 2021 to 2023 (i.e., Corteva sold less 2,4-D at prices not high enough to offset increases in COGS over the period examined).

SG&A expenses and operating income or loss

From 2021 to 2023, total SG&A expenses irregularly decreased in commercial sales, swap transactions and the combined commercial sale and swap data (tables VI-3, VI-5, and VI-7); SG&A expenses irregularly increased in the overall market (table IV-1).¹⁹ SG&A expense ratios (i.e., total SG&A expenses divided by net sales) increased in all four categories of 2,4-D operations from 2021 to 2023.

In the overall market, Corteva's operating income consistently decreased, from *** in 2021 to *** in 2022 and then to *** in 2023. Corteva's operating income in commercial sales (table VI-3) irregularly decreased from *** in 2023 while operating income in its swap transactions (table VI-5) increased from ***. Operating income for commercial sales plus swap transactions (table VI-7) mirrored the trend in the commercial sales breakout, irregularly decreasing from *** in 2021 to *** in 2023. Operating margins (i.e., operating income divided by net sales) consistently decreased in the overall market (table VI-1), commercial sales breakout (table VI-3), and the combined commercial sales and swap transactions breakout (table VI-7) while operating margins in swap transactions irregularly decreased (table VI-5). The patterns of operating results primarily reflect the factors impacting financial results at the gross levels (i.e., highest operating income in 2021 was the result of COGS being lower than net sales) in both overall and commercial sales breakouts (tables VI-1 and VI-5, respectively). Corteva's

¹⁹ Corteva explained that the SG&A expense ***). Ibid.

swap transactions (table VI-5) and the combined commercial sales and swap transactions breakout (table VI-7) showed negative operating results in all three years, reflecting revenues being lower than operating costs as well as operating costs increasing faster than sales values.

All other expenses and net income or loss

Corteva ***. As a result, net incomes are the same as operating incomes in all four income statements presented in tables VI-1 (overall market), VI-3 (commercial sales including exports), VI-5 (swap transactions), and VI-7 (commercial sales and swap transactions).²⁰

Variance analysis

A variance analysis for the overall market 2,4-D operations of U.S. producer Corteva is presented in table VI-10.²¹ The information for this variance analysis is derived from table VI-1 (overall market).

²⁰ Corteva informed staff that ***. Using the share of Corteva's net sales of 2,4-D and Corteva's consolidated financial statements, staff estimated that all other expenses (***) would be \$*** in 2023. This estimation is not included in Corteva's financial data for 2,4-D ***. Email from Daniel Cannistra, Counsel for Corteva, April 24, 2024 and Corteva's 2023 Form 10-K, pp. 42-43; F-5; and, F-6 (as filed).

²¹ The Commission's variance analysis is calculated in three parts: Sales variance, cost of sales variance (COGS variance), and SG&A expense variance. Each part consists of a price variance (in the case of the sales variance) or a cost or expense variance (in the case of the COGS and SG&A expense variance), and a volume variance. The sales or cost/expense variance is calculated as the change in unit price or per-unit cost/expense times the new volume, while the volume variance is calculated as the change in volume times the old unit price or per-unit cost/expense. Summarized at the bottom of the table, the price variance is from sales; the cost/expense variance is the sum of those items from COGS and SG&A variances, respectively, and the volume variance is the sum of the volume components of the net sales, COGS, and SG&A expense variances. The overall volume component of the variance analysis is generally small. As noted in the *Net Sales* section above, differences in product mix are primarily limited to ***. Since the shares of total 2,4-D sales accounted for by each customer varied somewhat during the period examined, it appears reasonable to assume that effective product mix also varied. While the Commission's variance analysis is generally more meaningful when product mix and/or customer mix remains the same throughout the period, implied changes in 2,4-D product mix and customer type do not appear substantial enough to undermine the utility of the variance analysis.

Table VI-10**2,4-D: Variance analysis on the overall market operations of U.S. producer Corteva between comparison periods**

Value in 1,000 dollars

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

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

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

Capital expenditures, R&D expenses, assets, and ROA²²

Table VI-11 presents data on U.S. producer Corteva's capital expenditures, R&D expenses, total assets, and operating ROA.^{23 24} Table VI-12 presents Corteva's narrative responses on the nature, focus, and significance of their capital expenditures and major asset categories and any significant changes in asset levels over the period examined.

Table VI-11

2,4-D: U.S. producer Corteva's capital expenditures, R&D expenses, total assets, and ROA, by period

Value in 1,000 dollars

Item	2021	2022	2023
Capital expenditures	***	***	***
R&D expenses	***	***	***
Total assets	***	***	***
ROA	***	***	***

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

Table VI-12

2,4-D: U.S. producer Corteva's narrative descriptions of its capital expenditures, R&D expenses, and ROA

Item	Narrative on item
Capital expenditures	***
R&D expenses	***
Total net assets	***

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

²² U.S. producer Corteva estimates that a greenfield 2,4-D acid production facility would cost \$*** while U.S. converter *** estimates that cost to be \$***. Corteva's postconference brief, pp. 28-29 and Drexel's postconference brief, responses to staff, p. 7.

²³ 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.

²⁴ Corteva reported ***. See footnote 20 in this section of the report; Corteva's postconference brief, p. 27; and, email from Daniel Cannistra, Counsel for Corteva, April 24, 2024.

Capital and investment

The Commission requested the U.S. producer of 2,4-D to describe any actual or potential negative effects of imports of 2,4-D from China and India on the firm's growth, investment, ability to raise capital, development and production efforts, or the scale of capital investments. Table VI-13 presents the impact in each category reported by U.S. producer Corteva and table VI-14 provides U.S. producer Corteva's narrative responses.

Table VI-13

2,4-D: U.S. producer Corteva's actual and anticipated negative effects of imports from subject sources on investment, growth, and development since January 1, 2021, by effect

Number of firms reporting

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

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

Table VI-14

2,4-D: U.S. producer Corteva's narratives relating to actual and anticipated negative effects of imports on investment, growth, and development, since January 1, 2021, by effect, since January 1, 2021

Item	Firm name and narrative on impact of imports
Cancellation, postponement, or rejection of expansion projects	***
Other effects on growth and development	***
Anticipated effects of imports	***

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

Part VII: Threat considerations and information on nonsubject countries

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

In determining whether an industry in the United States is threatened with material injury by reason of imports (or sales for importation) of the subject merchandise, the Commission shall consider, among other relevant economic factors¹--

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

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

- (VI) *the potential for product-shifting if production facilities in the foreign country, which can be used to produce the subject merchandise, are currently being used to produce other products,*
- (VII) *in any investigation under this title which involves imports of both a raw agricultural product (within the meaning of paragraph (4)(E)(iv)) and any product processed from such raw agricultural product, the likelihood that there will be increased imports, by reason of product shifting, if there is an affirmative determination by the Commission under section 705(b)(1) or 735(b)(1) with respect to either the raw agricultural product or the processed agricultural product (but not both),*
- (VIII) *the actual and potential negative effects on the existing development and production efforts of the domestic industry, including efforts to develop a derivative or more advanced version of the domestic like product, and*
- (IX) *any other demonstrable adverse trends that indicate the probability that there is likely to be material injury by reason of imports (or sale for importation) of the subject merchandise (whether or not it is actually being imported at the time).²*

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

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

Subject countries

The Commission issued foreign producer/exporter questionnaires to twelve firms believed to produce and/or export 2,4-D in China and four firms believed to produce and/or export 2,4-D in India.³ The Commission received seven usable questionnaire responses: three from producer/exporters in India, one from an exporter/reseller in India, one from a producer/exporter in China, and two from exporter/resellers in China.⁴

The responding producer/exporter in China accounted for *** percent of U.S. imports of 2,4-D from China in 2023, while the three responding Indian producer/exporters' exports accounted for *** percent of U.S. imports of 2,4-D from India in 2023.⁵ Additionally, the responding producer/exporter in China estimated that it accounted for *** percent of 2,4-D production in China in 2023, and the three responding Indian producer/exporters collectively estimated that they accounted for 108 percent of production of 2,4-D in India in 2023.⁶

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

⁴ Additionally, one firm (***) submitted a response certifying that it had not produced or exported 2,4-D from China or India since January 1, 2021.

⁵ These estimates were calculated using official U.S. import statistics of the U.S. Department of Commerce Census Bureau using statistical reporting number 2918.99.2010.

⁶ Firms were asked in the Commission's foreign producer/exporter questionnaire to estimate the share of their country's 2023 2,4-D production accounted for by their firm's 2023 2,4-D production. Indian producer Meghmani Organics estimated it accounted for *** percent of 2023 Indian production, Indian producer Atul estimated it accounted for *** percent of 2023 Indian production, and Indian producer Agrow Allied estimated it accounted for *** percent of 2023 Indian production. Since firms don't 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 possibly leading to estimates that collectively add up to over 100 percent.

Tables VII-1 presents summary data on the 2,4-D operations of the responding producers and exporters in China and India for 2023, and table VII-2 presents summary data by subject foreign industry for 2023. Both tables include breakouts by production, production shares, exports to the United States, exports to the United States shares, total shipments, and total shipment shares. The 2023 production of the responding producer in China accounted for *** percent of total reported 2023 production and *** percent of reported 2023 exports to the United States (with the Indian firms' conversely accounting for *** percent of reported production and *** percent of reported exports to the United States in 2023).

Table VII-1
2,4-D: Summary data for subject producers, 2023

Quantity in 1,000 pounds acid equivalent; Shares in percent

Producer and (subject foreign industry)	Production	Share of reported production	Exports to the United States	Share of reported exports to the United States	Total shipments	Share of firm's total shipments exported to the United States
Agrow Allied (India)	***	***	***	***	***	***
Atul (India)	***	***	***	***	***	***
Meghmani Organics (India)	***	***	***	***	***	***
Jiangxi Tianyu Chemical/ Thai Harvest (China)	***	***	***	***	***	***
All individual producers	***	100.0	***	100.0	***	***

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

Table VII-2
2,4-D: Summary data, by subject foreign industry, 2023

Quantity in 1,000 pounds acid equivalent; Shares in percent

Subject foreign industry	Production	Share of reported production	Exports to the United States	Share of reported exports to the United States	Total shipments	Share of firm's total shipments exported to the United States
China	***	***	***	***	***	***
India	***	***	***	***	***	***
All subject foreign industries	***	100.0	***	100.0	***	***

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

Table VII-3 presents summary data for the responding subject resellers by firm for 2023. Sharda Cropchem reported resales exported to the United States from both China and India and submitted separate questionnaire responses by country. Sharda reported that it exported resales from Chinese producers *** and from Indian producers ***.⁷ Nufarm reported resales exported to the United States produced by ***.^{8 9}

Table VII-3
2,4-D: Summary data for subject resellers, by firm, 2023

Quantity in 1,000 pounds acid equivalent; Shares in percent

Reseller and (subject foreign industry)	Resales exported to the United States	Share of resales exported to the United States
Nufarm Services (China)	***	***
Sharda Cropchem (China)	***	***
Sharda Cropchem (India)	***	***
All individual resellers	***	100.0

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

⁷ As noted in table III-1, the Commission received foreign producer/exporter questionnaire responses from *** but did not receive questionnaire responses from ***.

⁸ Counsel for Nufarm stated, “***.” Email correspondence with Daniel Porter, counsel for Nufarm, April 5, 2024, EDIS doc #818536.

⁹ As noted in table III-1, the Commission ***.

Changes in operations

Subject producers were asked to report any change in the character of their operations or organization relating to the production of 2,4-D since 2021. Each of the four responding producers indicated in their responses that they had experienced such changes: two of the producers reported expansions, one reported production curtailments, and one reported production process optimizations. Table VII-4 presents the changes identified by these subject foreign producers.

Table VII-4
2,4-D: Reported changes in operations in subject foreign industries since January 1, 2021, by reported change category and firm

Item	Firm name (subject foreign industry) and accompanying narrative response regarding changes in operations
Production curtailments	***
Expansions	***
Expansions	***
Other	***

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

Operations on 2,4-D

The Commission asked foreign producers to report their installed overall, practical overall, and practical 2,4-D capacities. Installed or “theoretical” overall capacity measures the level of production firms could have attained based solely on existing capital investments and not considering other constraints such as availability of material inputs, labor force, and normal downtime. The two practical capacity measures take into consideration both existing capital investment as well as non-capital investment constraints. Practical overall capacity measures firms’ capacity to produce 2,4-D as well as any other products produced using the same equipment/machinery based on firms’ actual product mix over the period, whereas practical 2,4-D capacity measures only the practical capacity of firms to produce 2,4-D.

Table VII-5 presents data on subject producers’ installed capacity, practical overall capacity, and practical 2,4-D capacity and production on the same equipment. The subject producers ***, thus ***. Subject producers’ installed capacity increased each year of the period from approximately *** pounds in 2021 to *** pounds in 2022 and *** pounds in 2023, an increase of *** pounds in installed capacity across the period (a *** percent increase).¹⁰ Practical capacity increased irregularly, decreasing from approximately *** pounds in 2021 to *** pounds in 2022 before increasing to *** pounds in 2023, a *** percent increase over the 2021-23 period. As noted in table VII-6, subject producers’ reported conditions related to maintenance and labor availability that constrained their abilities for practical capacities to reach installed capacities.

Subject producers’ 2,4-D production decreased irregularly across the period (decreasing from approximately *** pounds in 2021 to *** pounds in 2022, a *** percent decrease, then increasing to *** pounds in 2023, a *** percent from 2022-23 but an overall decrease of *** percent across the period). Resultingly, subject producers’ practical capacity utilization ratios decreased *** percentage points across the period from *** percent in 2021, to *** percent in 2022, and to *** percent in 2023.

¹⁰ ***.

Table VII-5

2,4-D: Producers' in subject foreign industries installed and practical capacity and production on the same equipment as subject production, by period

Quantity in 1,000 pounds acid dry weight equivalent

Item	Measure	2021	2022	2023
Installed overall	Capacity	***	***	***
Installed overall	Production	***	***	***
Installed overall	Utilization	***	***	***
Practical overall	Capacity	***	***	***
Practical overall	Production	***	***	***
Practical overall	Utilization	***	***	***
Practical 2,4-D	Capacity	***	***	***
Practical 2,4-D	Production	***	***	***
Practical 2,4-D	Utilization	***	***	***

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

Table VII-6 presents subject producers' reported constraints on reaching installed capacity since January 1, 2021. Three of the four responding subject producers reported constraints. The reported constraints related to maintenance and labor availability.

Table VII-6

2,4-D: Producers' in subject foreign industries reported constraints to practical overall capacity, since January 1, 2021

Item	Firm name (subject foreign industry) and narrative response on constraints to practical overall capacity
Production bottlenecks	***
Existing labor force	***
Other constraints	***
Other constraints	***

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

Table VII-7 presents information on the 2,4-D operations of the responding subject producers and exporters. As previously shown in table VII-5, subject foreign producers' practical capacity increased irregularly by *** percent while production decreased irregularly *** percent over the 2021-23 period.

Subject foreign producers' exports to the United States decreased irregularly over the period increasing from approximately *** pounds in 2021 to *** pounds in 2022 (a *** percent increase) before decreasing to *** pounds (representing a *** percent overall decrease from 2021-23). All four producers' exports to the United States increased from 2021-22, while three of the four producers' exports to the United States decreased between 2022 and 2023.

The producers collectively projected that 2024 exports to the United States would be *** percent higher in 2024 than 2023 and that 2025 exports would increase again by *** percent over the 2024 projected figure ending at approximately *** pounds (***). Foreign producers' exports to all other markets decreased across each year of the period and ended *** percent lower in 2023 than in 2021. Foreign producers' home market shipments increased irregularly by *** percent from 2021-23 (with a decrease of *** percent from 2021-22). From 2021-23, internal consumption and transfers represented between *** and *** percent of foreign producers' total shipments while commercial home market shipments represented between *** and *** percent of foreign producers' total shipments.

In 2023, *** percent of subject foreign producers' shipments were home market shipments (*** percent being internal consumption or transfers and *** percent commercial home market shipments). The remaining *** percent of foreign producer shipments were exports with *** percent of total shipments being exports to the United States and *** percent of total shipments being exports to all other markets.¹¹

In addition to the subject foreign producers reported exports to the United States (approximately *** pounds, *** pounds, and *** pounds in 2021, 2022, and 2023, respectively). Resellers also reported exports of approximately *** pounds in 2021, *** pounds in 2022, and *** pounds in 2023 (resellers' exports decreased *** percent overall from 2021-23). As a share of total reported exports to the United

¹¹ Foreign producers listed other principal export markets as Australia, Brazil, Africa, Argentina, Colombia, Central America, Ethiopia, Philippines, and Thailand.

States, foreign producers reported a greater share of the exports to the United States than reported by the resellers in year of the period (** percent in 2021, ** percent in 2022, and ** percent in 2023). The foreign producers collectively projected their exports to the United States would be ** percent higher in 2024 than in 2023 and that exports would be an additional ** percent higher in 2025 than the projected 2024 figure. Total exports to the United States as reported by producers and resellers combined decreased irregularly from 2021-23 by ** percent (with an increase of ** percent from 2021-22). Resellers and producers combined projected exports to the United States would be ** percent higher in 2024 than in 2023 and an additional ** percent higher in 2025 than the 2024 projection.

When adjusting total shipments, subject producers' and resellers' exports to the United States represented ** percent of total shipments in 2021, ** percent of total shipments in 2022, and ** percent of total shipments in 2023.¹²

¹² Total shipments have been adjusted because foreign exporter ** exported resales from ** to the United States. Since questionnaires were not received from those firms, total shipments for subject foreign industries were adjusted to include these resales in the sum thus adjusting the calculated shares accounted for by exports to the United States.

Table VII-7
2,4-D: Data on subject foreign industries, by item and period

Quantity in 1,000 pounds acid equivalent

Item	2021	2022	2023	Projection 2024	Projection 2025
Capacity	***	***	***	***	***
Production	***	***	***	***	***
End-of-period inventories	***	***	***	***	***
Internal consumption and transfers	***	***	***	***	***
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 VII-7 Continued
2,4-D: Data on subject foreign industries, by item and period

Shares and ratios in percent

Item	2021	2022	2023	Projection 2024	Projection 2025
Capacity utilization ratio	***	***	***	***	***
Inventory ratio to production	***	***	***	***	***
Inventory ratio to total shipments	***	***	***	***	***
Internal consumption and transfers share	***	***	***	***	***
Commercial home market shipments share	***	***	***	***	***
Home market shipments share	***	***	***	***	***
Exports to the United States share	***	***	***	***	***
Exports to all other markets share	***	***	***	***	***
Export shipments share	***	***	***	***	***
Total shipments share	100.0	100.0	100.0	100.0	100.0
Share of total exports to the U.S. exported by producers	***	***	***	***	***
Share of total exports to the U.S. exported by resellers	***	***	***	***	***
Adjusted share of total shipments exported to the United States	***	***	***	***	***

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

Note: Foreign exporter *** exported resales from *** to the United States. Since questionnaires were not received from those firms, the share of total shipments exported to the United States and share of total shipments exported include these resales in the sum of total shipments for China and all subject foreign industries.

Table VII-8 presents information on the 2,4-D practical capacity, production, capacity utilization, and production shares by country. As a share of production, China represented between *** and *** percent of total production between 2021 and 2023, with Indian production conversely representing between *** and *** percent of reported production over the period.

As noted, practical capacity increased irregularly by *** percent over the 2021-23 period. By country, Jiangxi Tianyu Chemical reported all data for China, and the company's practical capacity increased *** percent from 2021-23. Indian producers' practical capacity increased *** percent from 2021-23. Practical capacity for 2024 and 2025 were projected by the responding producers to remain unchanged from 2023 capacity.

Production decreased irregularly from 2021-23, decreasing *** percent across the period. By country, China's practical capacity (Jiangxi Tianyu Chemical) increased *** percent and Indian producers' practical capacity increased *** percent.¹³ Jiangxi Tianyu Chemical projected its 2024 and 2025 production would be *** from its 2023 production while the Indian producers projected production in 2024 and 2025 would be *** percent higher than 2023 production.¹⁴

Jiangxi Tianyu Chemical reported ***. The Indian producers reported decreasing practical capacity utilization ratios from *** percent in 2021 to *** percent in 2022 and *** percent in 2023, a decrease of *** percentage points across the period (all three Indian producers reported lower utilization ratios in 2023 as compared to 2021). The Indian producers projected capacity utilization would increase to *** percent in 2024 and 2025.

13 ***.

14 ***.

Table VII-8**2,4-D: Subject foreign industries' output: Practical capacity, by subject foreign industry and period**

Quantity in 1,000 pounds acid equivalent

Subject foreign industry	2021	2022	2023	Projection 2024	Projection 2025
China	***	***	***	***	***
India	***	***	***	***	***
All subject foreign industries	***	***	***	***	***

Table continued.

Table VII-8 Continued**2,4-D: Subject foreign industries' output: Production, by subject foreign industry and period**

Quantity in 1,000 pounds acid equivalent

Subject foreign industry	2021	2022	2023	Projection 2024	Projection 2025
China	***	***	***	***	***
India	***	***	***	***	***
All subject foreign industries	***	***	***	***	***

Table continued.

Table VII-8 Continued**2,4-D: Subject foreign industries' output: Capacity utilization ratio, by subject foreign industry and period**

Ratios in percent

Subject foreign industry	2021	2022	2023	Projection 2024	Projection 2025
China	***	***	***	***	***
India	***	***	***	***	***
All subject foreign industries	***	***	***	***	***

Table continued.

Table VII-8 Continued**2,4-D: Subject foreign industries' output: Share of production, by subject foreign industry and period**

Shares in percent

Subject foreign industry	2021	2022	2023	Projection 2024	Projection 2025
China	***	***	***	***	***
India	***	***	***	***	***
All subject foreign industries	100.0	100.0	100.0	100.0	100.0

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

Table VII-9 presents information on the 2,4-D subject producers' and resellers exports to the United States, shares of total shipments, total exports, and shares of total shipments by subject industry.

As previously noted, exports to the United States as reported by producers and resellers combined decreased irregularly from 2021-23 by *** percent (from *** pounds in 2021 and increasing to *** pounds in 2022 before decreasing to *** pounds in 2023). By subject country, from 2021-23 exports from China as reported by producers and resellers to the United States decreased irregularly, while exports from India increase irregularly.

Exports from China to the United States were *** pounds in 2021 increasing *** percent to *** pounds in 2022 and decreasing to *** pounds in 2023. Exports from India to the United States were *** pounds in 2021 increasing to *** pounds in 2022 before decreasing to *** pounds in 2023 representing a *** percent increase across the 2021-23 period. The foreign industry in China projected that exports to the United States would be *** percent higher in 2024 than 2023 and *** percent higher in 2025 than 2024, while the industry in India projected 2024 export shipments to the United States would be *** percent lower in 2024 than 2023 and *** percent higher in 2025 than in 2023.

Total exports as reported by producers and resellers combined also decreased irregularly from 2021-23, by *** percent (from *** pounds in 2021 and increasing to *** pounds in 2022 before decreasing to *** pounds in 2023). Total exports in both subject foreign industries decreased irregularly (total exports from China decreased irregularly across the period by *** percent, while total exports from India decreased irregularly across the period by *** percent). The foreign industry in China projected that its total exports would be *** percent higher in 2024 than 2023 and *** percent higher in 2025 than 2024, while the industry in India projected that its 2024 total exports would be *** percent higher in 2024 than 2023 and *** percent higher in 2025 than in 2024.

Chinese producers' and resellers' exports to the United States represented *** percent of adjusted total Chinese shipments, while Chinese producers' and resellers' exports to all destination markets represented *** percent of adjusted total Chinese shipments in 2023. Indian producers' and resellers' exports to the United States represented *** percent of total Indian shipments, while Indian producers' and resellers' exports to all destination markets represented *** percent of total shipments from India in 2023.

Table VII-9**2,4-D: Subject producers' and resellers' exports: Exports to the United States, by subject foreign industry and period**

Quantity in 1,000 pounds acid equivalent

Subject foreign industry	2021	2022	2023	Projection 2024	Projection 2025
China	***	***	***	***	***
India	***	***	***	***	***
All subject foreign industries	***	***	***	***	***

Table continued.

Table VII-9 Continued**2,4-D: Subject producers' and resellers' exports: Share of total shipments exported to the United States, by subject foreign industry and period**

Share in percent.

Subject foreign industry	2021	2022	2023	Projection 2024	Projection 2025
China	***	***	***	***	***
India	***	***	***	***	***
All subject foreign industries	***	***	***	***	***

Table continued.

Table VII-9 Continued**2,4-D: Subject producers' and resellers' exports: Total exports, by subject foreign industry and period**

Quantity in 1,000 pounds acid equivalent

Subject foreign industry	2021	2022	2023	Projection 2024	Projection 2025
China	***	***	***	***	***
India	***	***	***	***	***
All subject foreign industries	***	***	***	***	***

Table continued.

Table VII-9 Continued**2,4-D: Subject producers' and resellers' exports: Share of total shipments exported, by subject foreign industry and period**

Share in percent.

Subject foreign industry	2021	2022	2023	Projection 2024	Projection 2025
China	***	***	***	***	***
India	***	***	***	***	***
All subject foreign industries	***	***	***	***	***

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

Note: Foreign exporter *** exported resales from *** to the United States. Since questionnaires were not received from those firms, the share of total shipments exported to the United States and share of total shipments exported include these resales in the sum of total shipments for China and all subject foreign industries.

Alternative products

The three responding producers in India and the one responding producer in China did not report any production of alternative products using the same equipment and/or labor as those used to produce 2,4-D during the period of investigation. Additionally, all four firms reported that they do not have the ability to switch production between 2,4-D and other products using the same equipment and/or labor.

Exports

Table VII-10 presents Global Trade Atlas (“GTA”) data for exports of “carboxylic acids with additional oxygen function and their anhydrides, halides, peroxides and peroxyacids,” a category which includes 2,4-D acid and its salts and esters, from subject countries to the United States and to all destination markets. In comparing exports to the United States at the six-digit level presented below to U.S. imports at the ten-digit level (table IV-2), 2023 U.S. imports at the ten-digit level from China are 56.4 percent of 2023 reported exports to the United States from China and 2023 U.S. imports from at the ten-digit level from India are 41.9 percent of reported exports to the United States from India suggesting greater than 40 percent of exports from China and greater than 55 percent of exports from India under this subheading are out-of-scope merchandise.

Exports from China to the United States at the six-digit level decreased irregularly by 36.3 percent from 2021-23, while exports from India to the United States increased irregularly by 41.3 percent across the period. Exports from the subject sources combined decreased irregularly across the period by 12.2 percent.

Exports from China to all destination markets at the six-digit level decreased irregularly from 2021-23 by 12.8 percent, while exports from India to all destination markets increased irregularly across the period by 2.5 percent. Exports from the subject sources combined to all destination markets decreased irregularly across the period by 8.6 percent.

In 2023, exports from China to the United States under subheading 2918.99 were 17.5 percent of China’s total exports under this subheading, while exports from India to the United States under subheading were 39.0 percent of India’s total exports under this subheading.

Table VII-10

Carboxylic Acids with Additional Oxygen Function and Their Anhydrides, Halides, Peroxides and Peroxyacids: Global exports from subject exporters: Exports to the United States, by exporter and period

Quantity in 1,000 pounds acid equivalent

Exporter	Measure	2021	2022	2023
China	Quantity	57,503	93,752	36,630
India	Quantity	25,829	47,202	36,505
Subject exporters	Quantity	83,332	140,953	73,135

Table continued.

Table VII-10 Continued

Carboxylic Acids with Additional Oxygen Function and Their Anhydrides, Halides, Peroxides and Peroxyacids: Global exports from subject exporters: Exports to all destination markets, by exporter and period

Quantity in 1,000 pounds acid equivalent

Exporter	Measure	2021	2022	2023
China	Quantity	239,949	305,716	209,304
India	Quantity	91,259	108,879	93,538
Subject exporters	Quantity	331,208	414,595	302,842

Table continued.

Table VII-10 Continued

Carboxylic Acids with Additional Oxygen Function and Their Anhydrides, Halides, Peroxides and Peroxyacids: Global exports from subject exporters: Share of exports exported to the United States, by exporter and period

Shares in percent

Exporter	Measure	2021	2022	2023
China	Share	24.0	30.7	17.5
India	Share	28.3	43.4	39.0
Subject exporters	Share	25.2	34.0	24.1

Source: Official exports statistics under HS subheading 2918.99 as reported by China Customs and official imports statistics of imports from India (constructed export statistics for India) in the Global Trade Atlas Suite database, accessed April 22, 2024 and April 25, 2024.

U.S. inventories of imported merchandise

Table VII-11 presents data on U.S. importers' reported end-of-period inventories of imported 2,4-D. Inventories of imports from China increased irregularly, increasing in 2022 by *** percent and then decreasing *** percent from 2022-23, and ending *** percent higher at year-end 2023 than year-end 2021. Inventories from China were approximately *** pounds at year-end 2021, *** pounds at year-end 2022, and *** pounds at year-end 2023. Inventories of imports from India increased in each year of the period ending *** percent higher in 2023 than in 2021 (*** pounds as compared to *** pounds).

End-of-year inventories of imports from China were *** percent greater than year-end imports from India in 2021, *** percent greater than year-end imports from India in 2022, and *** percent greater than year-end imports from India in 2023. Inventories of imports from subject sources overall increased irregularly, increasing from 2021-22 by *** percent and then decreasing *** percent from 2022-23, and ending *** percent higher in 2023 than in 2021 (*** pounds compared to *** pounds).

Inventories of imports from China as a ratio to imports, U.S. shipments of import, and total shipments of imports from China all increased irregularly from 2021-23. Inventories of imports from India as a ratio to imports, U.S. shipments of import, and total shipments of imports from India fluctuated but were all higher in 2023 than in 2021.

Inventories of imports from nonsubject sources increased across the period by *** percent (beginning at *** in 2021 and ending at *** in 2023). Inventories of imports from nonsubject sources as a ratio to imports, U.S. shipments of import, and total shipments of imports from nonsubject sources all increased from 2021-23.

Inventories of imports from all sources increased irregularly across the period increasing *** percent from 2021-22, then decreasing *** percent from 2022-23, and ending *** percent higher at end-of-year 2023 than end-of-year 2021. Inventories of imports from all sources were *** pounds at year-end 2021, *** pounds at year-end 2022, and *** pounds at year-end 2023.

Table VII-11**2,4-D: U.S. importers' inventories and their ratio to select items, by source and period**

Quantity in 1,000 pounds acid equivalent; Ratios in percent

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

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

U.S. importers' outstanding orders

The Commission requested importers to indicate whether they imported or arranged for the importation of 2,4-D from China and India after December 31, 2023. Importers' reported data is presented in table VII-12.

When comparing the reported arranged imports for 2024 to official statistics reported by U.S. Department of Commerce Census Bureau using HTS statistical reporting number 2918.99.2010 for 2023, imports arranged from China for 2024 (***) pounds) are equal to *** percent of imports reported from China for 2023 (***) pounds), and imports arranged from India for 2024 *** percent of imports from India for 2023 (***) pounds). Total reported arranged imports for the two subject sources combined (***) pounds) are equal to *** percent of 2023 imports (***) pounds). Total reported arranged imports from nonsubject sources (***) are equal to *** percent of total reported imports from nonsubject sources in 2023 (***) pounds).

Table VII-12
2,4-D: Arranged imports, by source and by period

Quantity in 1,000 pounds acid equivalent

Source	Jan-Mar 2024	Apr-Jun 2024	Jul-Sep 2024	Oct-Dec 2024	Total
China	***	***	***	***	***
India	***	***	***	***	***
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

2,4-D from China is subject to antidumping duties in a country other than the United States. Australia applies antidumping duties to imports of 2,4-D from China. On March 24, 2003, Australia's Minister for Justice and Customs imposed the original anti-dumping measures, and these measures were continued in 2008, 2013, and 2018.¹⁵ In 2022, an investigation was completed, and the orders were continued beginning March 25, 2023, and are set to expire March 24, 2028.^{16 17}

Information on nonsubject countries

The largest global exporters of the broader category that includes 2,4-D by quantity were China, India, Germany, the United States, and South Korea in 2023. The broader category of exports of carboxylic acids with additional oxygen function and their anhydrides, halides, peroxides and peroxyacids are shown in table VII-13. The largest global exporters by quantity in 2023 were the subject countries, China and India—China with a 45.6 percent share of quantity (\$513.9 million), followed by India with a 20.4 percent share (\$408.9 million). For the three largest nonsubject countries, Germany had a 9.7 percent share of quantity (\$133.6 million), followed by South Korea with a 3.3 percent share (\$21.3 million), followed by the United Kingdom with a 2.8 percent share (\$73.3 million).

¹⁵ Australian Government Anti-dumping Commission, Anti-dumping Notice No. 2022/034, April 13, 2022, pp. 1-2, <https://www.industry.gov.au/sites/default/files/adc/public-record/604 - 002 - notice - adn 2022-034 - initiation of a continuation inquiry.pdf>.

¹⁶ Australian Government Anti-dumping Commission, Dumping Commodity Register, Dichlorophenoxy-Acetic Acid (2,4-D), April 24, 2023, <https://www.industry.gov.au/sites/default/files/adc/measures/2024-02/dcr - 24-d 0.pdf>; Australian Government Anti-dumping Commission, 604 - 2,4-Dichlorophenoxyacetic acid (2,4-D) from China (contains electronic public records of the proceedings), <https://www.industry.gov.au/anti-dumping-commission/archive-cases-and-electronic-public-record-epr/604>; Australian Government Anti-dumping Commission, Anti-dumping Notice No. 2022/21, December 20, 2022, <https://www.industry.gov.au/sites/default/files/adc/public-record/604 - adn 2022-121 - findings of continuation enquiry.pdf>.

¹⁷ The orders set to expire in 2028 fall under HS 2918.99.00 and 3808.93.00. They include 2,4-D acid, sodium salt, 2,4-D intermediate products (salts and esters), including iso butyl ester technical, ethyl ester technical, 2-ethyl hexyl ester technical dimethylamine and iso-propylamine, 2,4-D fully formulated products, and all other forms of 2,4-D. The rate of duty on imports from China is 22.3 percent for Shandong Weifang Rainbow Chemical Co. Ltd. supplied directly or through Shandong Rainbow Agrisciences Co., Ltd or 35.3 percent for all other Chinese exporters.

Table VII-13**Carboxylic acids with additional oxygen function and their anhydrides, halides, peroxides and peroxyacids: Global exports, by reporting country and by period**

Quantity in 1,000 pounds acid equivalent; Value in 1,000 dollars

Exporting country	Measure	2021	2022	2023
United States	Quantity	39,124	31,963	32,346
China	Quantity	239,949	305,716	209,304
India	Quantity	91,259	108,879	93,538
Subject exporters	Quantity	331,208	414,595	302,842
Germany	Quantity	47,681	44,591	44,351
South Korea	Quantity	21,307	18,143	15,030
United Kingdom	Quantity	28,198	19,058	12,726
Japan	Quantity	14,627	13,143	10,779
Netherlands	Quantity	10,849	15,432	10,112
Poland	Quantity	42,265	33,969	8,194
Belgium	Quantity	6,704	5,000	4,729
Switzerland	Quantity	4,427	4,334	3,475
Australia	Quantity	4,455	2,914	2,752
All other exporters	Quantity	26,472	21,021	12,154
All reporting exporters	Quantity	577,317	624,163	459,492
United States	Value	81,517	81,099	74,901
China	Value	723,930	900,550	513,866
India	Value	437,400	540,323	408,906
Subject exporters	Value	1,161,330	1,440,873	922,772
Germany	Value	112,025	127,785	133,598
South Korea	Value	29,103	30,070	21,329
United Kingdom	Value	97,023	81,687	73,345
Japan	Value	65,049	52,246	40,151
Netherlands	Value	52,571	71,189	39,079
Poland	Value	56,779	55,142	18,895
Belgium	Value	22,407	17,361	21,252
Switzerland	Value	94,250	93,789	96,806
Australia	Value	5,998	6,196	4,101
All other exporters	Value	175,582	138,596	133,128
All reporting exporters	Value	1,953,636	2,196,032	1,579,356

Table continued.

Table VII-13 Continued**Carboxylic acids with additional oxygen function and their anhydrides, halides, peroxides and peroxyacids: Global exports, by reporting country and by period**

Unit values in dollars per pound acid equivalent; Shares in percent

Exporting country	Measure	2021	2022	2023
United States	Unit value	2.08	2.54	2.32
China	Unit value	3.02	2.95	2.46
India	Unit value	4.79	4.96	4.37
Subject exporters	Unit value	3.51	3.48	3.05
Germany	Unit value	2.35	2.87	3.01
South Korea	Unit value	1.37	1.66	1.42
United Kingdom	Unit value	3.44	4.29	5.76
Japan	Unit value	4.45	3.98	3.72
Netherlands	Unit value	4.85	4.61	3.86
Poland	Unit value	1.34	1.62	2.31
Belgium	Unit value	3.34	3.47	4.49
Switzerland	Unit value	21.29	21.64	27.86
Australia	Unit value	1.35	2.13	1.49
All other exporters	Unit value	6.63	6.59	10.95
All reporting exporters	Unit value	3.38	3.52	3.44
United States	Share of quantity	6.8	5.1	7.0
China	Share of quantity	41.6	49.0	45.6
India	Share of quantity	15.8	17.4	20.4
Subject exporters	Share of quantity	57.4	66.4	65.9
Germany	Share of quantity	8.3	7.1	9.7
South Korea	Share of quantity	3.7	2.9	3.3
United Kingdom	Share of quantity	4.9	3.1	2.8
Japan	Share of quantity	2.5	2.1	2.3
Netherlands	Share of quantity	1.9	2.5	2.2
Poland	Share of quantity	7.3	5.4	1.8
Belgium	Share of quantity	1.2	0.8	1.0
Switzerland	Share of quantity	0.8	0.7	0.8
Australia	Share of quantity	0.8	0.5	0.6
All other exporters	Share of quantity	4.6	3.4	2.6
All reporting exporters	Share of quantity	100.0	100.0	100.0

Source: Official exports statistics under HS subheading 2918.99 as reported by various national statistical authorities and official imports statistics of imports from India (constructed export statistics for India) in the Global Trade Atlas Suite database, accessed April 22, 2024.

Note: The United States is shown at the top followed by the countries under investigation, all remaining top exporting countries are in descending order of 2023 data.

APPENDIX A

FEDERAL REGISTER NOTICES

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

Citation	Title	Link
89 FR 19876, March 20, 2024	<i>2,4-Dichlorophenoxyacetic Acid ("2,4-D") from China and India; Institution of Antidumping and Countervailing Duty Investigations and Scheduling of Preliminary Phase Investigations</i>	https://www.govinfo.gov/content/pkg/FR-2024-03-20/pdf/2024-05917.pdf
89 FR 24431, April 8, 2024	<i>Notice of Extension of the Deadline for Determining the Adequacy of the Antidumping and Countervailing Duty Petitions: 2,4-Dichlorophenoxyacetic Acid from the People's Republic of China and India</i>	https://www.govinfo.gov/content/pkg/FR-2024-04-08/pdf/2024-07408.pdf
89 FR 27453, April 17, 2024	<i>2,4-Dichlorophenoxyacetic Acid ("2,4-D") from China and India; Revised Schedule for the Subject Investigations</i>	https://www.govinfo.gov/content/pkg/FR-2024-04-17/pdf/2024-08175.pdf
89 FR 34200, April 30, 2024	<i>2,4-Dichlorophenoxyacetic Acid from the People's Republic of China and India: Initiation of Less-Than-Fair Value- Investigations</i>	https://www.govinfo.gov/content/pkg/FR-2024-04-30/pdf/2024-09271.pdf
89 FR 34205, April 30, 2024	<i>2,4-Dichlorophenoxyacetic Acid from the People's Republic of China and India: Initiation of Countervailing Duty Investigations</i>	https://www.govinfo.gov/content/pkg/FR-2024-04-30/pdf/2024-09270.pdf

APPENDIX B

LIST OF STAFF CONFERENCE WITNESSES

PUBLIC PRELIMINARY CONFERENCE

Those listed below appeared in the United States International Trade Commission's Preliminary Conference:

Subject: 2,4-Dichlorophenoxyacetic Acid ("2,4-D") from China and India

Inv. Nos.: 701-TA-710-711 and 731-TA-1673-1674 (Preliminary)

Date and Time: April 4, 2024 - 9:30 a.m.

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

OPENING REMARKS:

In Support of Imposition (**Daniel Cannistra**, Crowell & Moring LLP)
In Opposition to Imposition (**Deanna Tanner Okun**, Polsinelli P.C.)

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

Crowell & Moring LLP
Washington, DC
on behalf of

Corteva Agriscience

Ricardo Garcia de Alba, Global Portfolio Leader - Row Crop Herbicides
and Nitrogen Management, Corteva Agriscience

Jason Moulin, U.S. Crop Protection and Channel Marketing Leader,
Corteva Agriscience

Jamie Lord, Lead Counsel, Corteva Agriscience

Daniel Cannistra) – OF COUNSEL

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

Hogan Lovells US LLP
Washington, DC
on behalf of

National Corn Growers Association

Harold Wolle, President, National Corn Growers Association

Michael G. Jacobson) – OF COUNSEL

Curtis, Mallet-Prevost, Colt & Mosle LLP
Washington, DC
on behalf of

Nufarm Americas Inc. (“Nufarm”)

Brendan Deck, Regional General Manager North America, Nufarm Americas
Inc.

Daniel L. Porter)
) – OF COUNSEL
James C. Beaty)

Polsinelli P.C.
Washington, DC
on behalf of

Drexel Chemical Company (“Drexel”)

Stanley Bernard, Vice President, Growth and Development, Drexel

Deanna Tanner Okun)
) – OF COUNSEL
Lydia C. Pardini)

Steptoe LLP
Washington, DC
on behalf of

PBI-Gordon Corporation

Gary Wolf, Vice President of Operations, PBI-Gordon Corporation

Robert Horner, Director of Procurement, PBI-Gordon Corporation

**In Opposition to the Imposition of the
Antidumping and Countervailing Duty Orders (continued):**

Gilbert Bourk, Head of Legal and Risk Management, PBI-Gordon Corporation

Eric Emerson)
) – OF COUNSEL
Mert Arkan)

TPM Solicitors & Consultants
New Delhi
on behalf of

Atul Ltd
Atul USA Inc.

Satish Patil (remote witness), President, Crop Protection, Atul Ltd, India

Vaidehi Jhaveri (remote witness), Senior Vice President – Sales & Marketing,
Crop Protection, Atul Ltd, India

Vishal Adesara (remote witness), General Manager – Finance, Crop Protection,
Atul Ltd, India

Sanjay Banerji (remote witness), Senior Vice President – Sales & Marketing,
Atul USA, Inc.

Lalit Patni (remote witness), Executive Vice President – Finance, Atul Ltd,
India

Vivek Gadre (remote witness), President – Corporate Office, Atul Ltd, India

Abhijit Shah (remote witness), General Manager – Sales & Marketing,
Crop Protection, Atul Ltd, India

Saumya Lalbhai (remote witness), Manager – Corporate, Crop Protection,
Atul Ltd, India

AK Gupta (remote witness))
Namrita Raghuwanshi (remote witness))
) – OF
COUNSEL
Sahil Yadav (remote witness))
Inan Gupta (remote witness))

REBUTTAL/CLOSING REMARKS:

In Support of Imposition (**Daniel Cannistra**, Crowell & Moring LLP)

In Opposition to Imposition (**Eric Emerson**, Steptoe LLP)

APPENDIX C

SUMMARY DATA

Table C-1:	
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2,4-D: Summary data concerning U.S. market limited to U.S. commercial and swap sales, including U.S. converters	C-13

Total market

Table C-1

2,4-D: Summary data concerning the U.S. total market, by item and period

Quantity=1,000 pounds acid equivalent; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per pound acid equivalent; Period changes=percent--exceptions noted

Item	Reported data			Period changes		
	Calendar year			Comparison years		
	2021	2022	2023	2021-23	2021-22	2022-23
U.S. total market consumption quantity:						
Amount.....	***	***	***	▲ ***	▲ ***	▼ ***
Producers' share (fn1).....	***	***	***	▼ ***	▼ ***	▲ ***
Importers' share (fn1):						
China.....	***	***	***	▲ ***	▲ ***	▼ ***
India.....	***	***	***	▲ ***	▲ ***	▲ ***
Subject sources.....	***	***	***	▲ ***	▲ ***	▼ ***
Nonsubject sources.....	***	***	***	▲ ***	▲ ***	▲ ***
All import sources.....	***	***	***	▲ ***	▲ ***	▼ ***
U.S. total market consumption value:						
Amount.....	***	***	***	▲ ***	▲ ***	▼ ***
Producers' share (fn1).....	***	***	***	▼ ***	▼ ***	▲ ***
Importers' share (fn1):						
China.....	***	***	***	▼ ***	▲ ***	▼ ***
India.....	***	***	***	▲ ***	▲ ***	▼ ***
Subject sources.....	***	***	***	▲ ***	▲ ***	▼ ***
Nonsubject sources.....	***	***	***	▲ ***	▲ ***	▲ ***
All import sources.....	***	***	***	▲ ***	▲ ***	▼ ***
U.S. imports from:						
China:						
Quantity.....	20,230	50,783	20,650	▲ 2.1	▲ 151.0	▼ (59.3)
Value.....	26,394	107,746	26,301	▼ (0.4)	▲ 308.2	▼ (75.6)
Unit value.....	\$1.30	\$2.12	\$1.27	▼ (2.4)	▲ 62.6	▼ (40.0)
Ending inventory quantity.....	***	***	***	▲ ***	▲ ***	▼ ***
India						
Quantity.....	8,793	18,361	15,306	▲ 74.1	▲ 108.8	▼ (16.6)
Value.....	11,415	42,259	24,602	▲ 115.5	▲ 270.2	▼ (41.8)
Unit value.....	\$1.30	\$2.30	\$1.61	▲ 23.8	▲ 77.3	▼ (30.2)
Ending inventory quantity.....	***	***	***	▲ ***	▲ ***	▲ ***
Subject sources:						
Quantity.....	29,023	69,145	35,956	▲ 23.9	▲ 138.2	▼ (48.0)
Value.....	37,809	150,005	50,903	▲ 34.6	▲ 296.7	▼ (66.1)
Unit value.....	\$1.30	\$2.17	\$1.42	▲ 8.7	▲ 66.5	▼ (34.7)
Ending inventory quantity.....	***	***	***	▲ ***	▲ ***	▼ ***
Nonsubject sources:						
Quantity.....	548	1,179	8,494	▲ 1,451.1	▲ 115.3	▲ 620.4
Value.....	2,169	4,989	29,618	▲ 1,265.5	▲ 130.0	▲ 493.7
Unit value.....	\$3.96	\$4.23	\$3.49	▼ (12.0)	▲ 6.8	▼ (17.6)
Ending inventory quantity.....	***	***	***	▲ ***	▲ ***	▲ ***
All import sources:						
Quantity.....	29,571	70,324	44,450	▲ 50.3	▲ 137.8	▼ (36.8)
Value.....	39,978	154,994	80,521	▲ 101.4	▲ 287.7	▼ (48.0)
Unit value.....	\$1.35	\$2.20	\$1.81	▲ 34.0	▲ 63.0	▼ (17.8)
Ending inventory quantity.....	***	***	***	▲ ***	▲ ***	▼ ***

Table continued.

Table C-1 Continued

2,4-D: Summary data concerning the U.S. total market, by item and period

Quantity=1,000 pounds acid equivalent; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per pound acid equivalent; Period changes=percent--exceptions noted

Item	Reported data Calendar year			Period changes Comparison years		
	2021	2022	2023	2021-23	2021-22	2022-23
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 (pounds per hour).....	***	***	***	▼ ***	▼ ***	▼ ***
Unit labor costs.....	***	***	***	▲ ***	▲ ***	▲ ***
Net sales:						
Quantity.....	***	***	***	▼ ***	▲ ***	▼ ***
Value.....	***	***	***	▼ ***	▲ ***	▼ ***
Unit value.....	***	***	***	▼ ***	▲ ***	▼ ***
Cost of goods sold (COGS).....	***	***	***	▼ ***	▲ ***	▼ ***
Gross profit or (loss) (fn2).....	***	***	***	▼ ***	▼ ***	▼ ***
SG&A expenses.....	***	***	***	▲ ***	▲ ***	▼ ***
Operating income or (loss) (fn2).....	***	***	***	▼ ***	▼ ***	▼ ***
Net income or (loss) (fn2).....	***	***	***	▼ ***	▼ ***	▼ ***
Unit COGS.....	***	***	***	▲ ***	▲ ***	▼ ***
Unit SG&A expenses.....	***	***	***	▲ ***	▲ ***	▼ ***
Unit operating income or (loss) (fn2).....	***	***	***	▼ ***	▼ ***	▼ ***
Unit net income or (loss) (fn2).....	***	***	***	▼ ***	▼ ***	▼ ***
COGS/sales (fn1).....	***	***	***	▲ ***	▲ ***	▲ ***
Operating income or (loss)/sales (fn1).....	***	***	***	▼ ***	▼ ***	▼ ***
Net income or (loss)/sales (fn1).....	***	***	***	▼ ***	▼ ***	▼ ***
Capital expenditures.....	***	***	***	▲ ***	▲ ***	▼ ***
Research and development expenses.....	***	***	***	***	***	***
Total assets.....	***	***	***	▼ ***	▼ ***	▼ ***

Source: Compiled from data submitted in response to Commission questionnaires and official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting number 2918.99.2010, accessed on April 11, 2024. Imports are based on the imports for consumption data series. Value data reflect landed duty-paid values. 508-compliant tables containing these data are contained in appendix parts parts III, IV, VI, and VII of this report.

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

fn1.--Reported data are in percent and period changes are in percentage points.

fn2.--Percent changes only calculated when both comparison values represent profits; The directional change in profitability provided when one or both comparison values represent a loss.

Commercial sales

Table C-2

2,4-D: Summary data concerning U.S. market, limited to commercial sales, by item and period

Quantity=1,000 pounds acid equivalent; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per pound acid equivalent; Period changes=percent--exceptions noted

Item	Reported data			Period changes		
	Calendar year			Comparison years		
	2021	2022	2023	2021-23	2021-22	2022-23
U.S. commercial sales consumption quantity:						
Amount.....	***	***	***	▲ ***	▲ ***	▼ ***
Producers' share (fn1).....	***	***	***	▼ ***	▼ ***	▲ ***
Importers' share (fn1):						
China.....	***	***	***	▼ ***	▲ ***	▼ ***
India.....	***	***	***	▲ ***	▲ ***	▲ ***
Subject sources.....	***	***	***	▲ ***	▲ ***	▼ ***
Nonsubject sources.....	***	***	***	▲ ***	▲ ***	▲ ***
All import sources.....	***	***	***	▲ ***	▲ ***	▼ ***
U.S. commercial sales consumption value:						
Amount.....	***	***	***	▲ ***	▲ ***	▼ ***
Producers' share (fn1).....	***	***	***	▼ ***	▼ ***	▲ ***
Importers' share (fn1):						
China.....	***	***	***	▼ ***	▲ ***	▼ ***
India.....	***	***	***	▲ ***	▲ ***	▲ ***
Subject sources.....	***	***	***	▼ ***	▲ ***	▼ ***
Nonsubject sources.....	***	***	***	▲ ***	▼ ***	▲ ***
All import sources.....	***	***	***	▲ ***	▲ ***	▼ ***
U.S. imports from:						
China:						
Quantity.....	20,230	50,783	20,650	▲ 2.1	▲ 151.0	▼ (59.3)
Value.....	26,394	107,746	26,301	▼ (0.4)	▲ 308.2	▼ (75.6)
Unit value.....	\$1.30	\$2.12	\$1.27	▼ (2.4)	▲ 62.6	▼ (40.0)
Ending inventory quantity.....	***	***	***	▲ ***	▲ ***	▼ ***
India						
Quantity.....	8,793	18,361	15,306	▲ 74.1	▲ 108.8	▼ (16.6)
Value.....	11,415	42,259	24,602	▲ 115.5	▲ 270.2	▼ (41.8)
Unit value.....	\$1.30	\$2.30	\$1.61	▲ 23.8	▲ 77.3	▼ (30.2)
Ending inventory quantity.....	***	***	***	▲ ***	▲ ***	▲ ***
Subject sources:						
Quantity.....	29,023	69,145	35,956	▲ 23.9	▲ 138.2	▼ (48.0)
Value.....	37,809	150,005	50,903	▲ 34.6	▲ 296.7	▼ (66.1)
Unit value.....	\$1.30	\$2.17	\$1.42	▲ 8.7	▲ 66.5	▼ (34.7)
Ending inventory quantity.....	***	***	***	▲ ***	▲ ***	▼ ***
Nonsubject sources:						
Quantity.....	548	1,179	8,494	▲ 1,451.1	▲ 115.3	▲ 620.4
Value.....	2,169	4,989	29,618	▲ 1,265.5	▲ 130.0	▲ 493.7
Unit value.....	\$3.96	\$4.23	\$3.49	▼ (12.0)	▲ 6.8	▼ (17.6)
Ending inventory quantity.....	***	***	***	▲ ***	▲ ***	▲ ***
All import sources:						
Quantity.....	29,571	70,324	44,450	▲ 50.3	▲ 137.8	▼ (36.8)
Value.....	39,978	154,994	80,521	▲ 101.4	▲ 287.7	▼ (48.0)
Unit value.....	\$1.35	\$2.20	\$1.81	▲ 34.0	▲ 63.0	▼ (17.8)
Ending inventory quantity.....	***	***	***	▲ ***	▲ ***	▼ ***

Table continued.

Table C-2 Continued

2.4-D: Summary data concerning U.S. market, limited to commercial sales, by item and period

Quantity=1,000 pounds acid equivalent; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per pound acid equivalent; Period changes=percent--exceptions noted

Item	Reported data			Period changes		
	Calendar year			Comparison years		
	2021	2022	2023	2021-23	2021-22	2022-23
U.S. producers':						
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 and official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting number 2918.99.2010, accessed on April 11, 2024. Imports are based on the imports for consumption data series. Value data reflect landed duty-paid values. 508-compliant tables containing these data are contained in appendix parts III, IV, VI, and VII of this report.

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

fn1.--Reported data are in percent and period changes are in percentage points.

fn2.--Percent changes only calculated when both comparison values represent profits; The directional change in profitability provided when one or both comparison values represent a loss.

Commercial and swap sales

Table C-3

2,4-D: Summary data concerning U.S. market, limited to commercial and swap sales, by item and period

Quantity=1,000 pounds acid equivalent; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per pound acid equivalent; Period changes=percent--exceptions noted

Item	Reported data			Period changes		
	Calendar year			Comparison years		
	2021	2022	2023	2021-23	2021-22	2022-23
U.S. commercial sales and swap transactions consumption quantity:						
Amount.....	***	***	***	▲ ***	▲ ***	▼ ***
Producers' share (fn1).....	***	***	***	▼ ***	▼ ***	▼ ***
Importers' share (fn1):						
China.....	***	***	***	▲ ***	▲ ***	▼ ***
India.....	***	***	***	▲ ***	▲ ***	▲ ***
Subject sources.....	***	***	***	▲ ***	▲ ***	▲ ***
Nonsubject sources.....	***	***	***	▲ ***	▲ ***	▲ ***
All import sources.....	***	***	***	▲ ***	▲ ***	▲ ***
U.S. commercial sales and swap transactions consumption value:						
Amount.....	***	***	***	▲ ***	▲ ***	▼ ***
Producers' share (fn1).....	***	***	***	▼ ***	▼ ***	▲ ***
Importers' share (fn1):						
China.....	***	***	***	▼ ***	▲ ***	▼ ***
India.....	***	***	***	▲ ***	▲ ***	▲ ***
Subject sources.....	***	***	***	▲ ***	▲ ***	▼ ***
Nonsubject sources.....	***	***	***	▲ ***	▲ ***	▲ ***
All import sources.....	***	***	***	▲ ***	▲ ***	▼ ***
U.S. imports from:						
China:						
Quantity.....	20,230	50,783	20,650	▲ 2.1	▲ 151.0	▼ (59.3)
Value.....	26,394	107,746	26,301	▼ (0.4)	▲ 308.2	▼ (75.6)
Unit value.....	\$1.30	\$2.12	\$1.27	▼ (2.4)	▲ 62.6	▼ (40.0)
Ending inventory quantity.....	***	***	***	▲ ***	▲ ***	▼ ***
India						
Quantity.....	8,793	18,361	15,306	▲ 74.1	▲ 108.8	▼ (16.6)
Value.....	11,415	42,259	24,602	▲ 115.5	▲ 270.2	▼ (41.8)
Unit value.....	\$1.30	\$2.30	\$1.61	▲ 23.8	▲ 77.3	▼ (30.2)
Ending inventory quantity.....	***	***	***	▲ ***	▲ ***	▲ ***
Subject sources:						
Quantity.....	29,023	69,145	35,956	▲ 23.9	▲ 138.2	▼ (48.0)
Value.....	37,809	150,005	50,903	▲ 34.6	▲ 296.7	▼ (66.1)
Unit value.....	\$1.30	\$2.17	\$1.42	▲ 8.7	▲ 66.5	▼ (34.7)
Ending inventory quantity.....	***	***	***	▲ ***	▲ ***	▼ ***
Nonsubject sources:						
Quantity.....	548	1,179	8,494	▲ 1,451.1	▲ 115.3	▲ 620.4
Value.....	2,169	4,989	29,618	▲ 1,265.5	▲ 130.0	▲ 493.7
Unit value.....	\$3.96	\$4.23	\$3.49	▼ (12.0)	▲ 6.8	▼ (17.6)
Ending inventory quantity.....	***	***	***	▲ ***	▲ ***	▲ ***
All import sources:						
Quantity.....	29,571	70,324	44,450	▲ 50.3	▲ 137.8	▼ (36.8)
Value.....	39,978	154,994	80,521	▲ 101.4	▲ 287.7	▼ (48.0)
Unit value.....	\$1.35	\$2.20	\$1.81	▲ 34.0	▲ 63.0	▼ (17.8)
Ending inventory quantity.....	***	***	***	▲ ***	▲ ***	▼ ***

Table continued.

Table C-3 Continued

2,4-D: Summary data concerning U.S. market, limited to commercial and swap sales, by item and period

Quantity=1,000 pounds acid equivalent; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per pound acid equivalent; Period changes=percent--exceptions noted

Item	Reported data			Period changes		
	Calendar year			Comparison years		
	2021	2022	2023	2021-23	2021-22	2022-23
U.S. producers':						
Commercial U.S. shipments & swap transactions:						
Quantity.....	***	***	***	▼***	▼***	▼***
Value.....	***	***	***	▼***	▼***	▼***
Unit value.....	***	***	***	▲***	▲***	▼***
Commercial sales & swap transactions:						
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 and official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting number 2918.99.2010, accessed on April 11, 2024. Imports are based on the imports for consumption data series. Value data reflect landed duty-paid values. 508-compliant tables containing these data are contained in appendix parts parts III, IV, VI, and VII of this report.

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

fn1.--Reported data are in percent and period changes are in percentage points.

fn2.--Percent changes only calculated when both comparison values represent profits; The directional change in profitability provided when one or both comparison values represent a loss.

Total market, including U.S converters

Table C-4

2,4-D: Summary data concerning the U.S. total market, including U.S. converters, by item and period

Quantity=1,000 pounds acid equivalent; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per pound acid equivalent; Period changes=percent--exceptions noted

Item	Reported data Calendar year			Period changes Comparison years		
	2021	2022	2023	2021-23	2021-22	2022-23
U.S. total market consumption quantity:						
Amount.....	***	***	***	▲ ***	▲ ***	▼ ***
Producers' share (fn1).....	***	***	***	▼ ***	▼ ***	▲ ***
Importers' share (fn1):						
China.....	***	***	***	▲ ***	▲ ***	▼ ***
India.....	***	***	***	▲ ***	▲ ***	▲ ***
Subject sources.....	***	***	***	▲ ***	▲ ***	▼ ***
Nonsubject sources.....	***	***	***	▲ ***	▲ ***	▲ ***
All import sources.....	***	***	***	▲ ***	▲ ***	▼ ***
U.S. total market consumption value:						
Amount.....	***	***	***	▲ ***	▲ ***	▼ ***
Producers' share (fn1):						
Fully domestic value.....	***	***	***	▼ ***	▼ ***	▲ ***
Value added to imports.....	***	***	***	▲ ***	▼ ***	▲ ***
Overall value for U.S. producers.....	***	***	***	▼ ***	▼ ***	▲ ***
Importers' share (fn1):						
China.....	***	***	***	▼ ***	▲ ***	▼ ***
India.....	***	***	***	▲ ***	▲ ***	▼ ***
Subject sources.....	***	***	***	▲ ***	▲ ***	▼ ***
Nonsubject sources.....	***	***	***	▲ ***	▲ ***	▲ ***
All import sources.....	***	***	***	▲ ***	▲ ***	▼ ***
U.S. imports from:						
China:						
Quantity.....	20,230	50,783	20,650	▲ 2.1	▲ 151.0	▼ (59.3)
Value.....	26,394	107,746	26,301	▼ (0.4)	▲ 308.2	▼ (75.6)
Unit value.....	\$1.30	\$2.12	\$1.27	▼ (2.4)	▲ 62.6	▼ (40.0)
Ending inventory quantity.....	***	***	***	▲ ***	▲ ***	▼ ***
India						
Quantity.....	8,793	18,361	15,306	▲ 74.1	▲ 108.8	▼ (16.6)
Value.....	11,415	42,259	24,602	▲ 115.5	▲ 270.2	▼ (41.8)
Unit value.....	\$1.30	\$2.30	\$1.61	▲ 23.8	▲ 77.3	▼ (30.2)
Ending inventory quantity.....	***	***	***	▲ ***	▲ ***	▲ ***
Subject sources:						
Quantity.....	29,023	69,145	35,956	▲ 23.9	▲ 138.2	▼ (48.0)
Value.....	37,809	150,005	50,903	▲ 34.6	▲ 296.7	▼ (66.1)
Unit value.....	\$1.30	\$2.17	\$1.42	▲ 8.7	▲ 66.5	▼ (34.7)
Ending inventory quantity.....	***	***	***	▲ ***	▲ ***	▼ ***
Nonsubject sources:						
Quantity.....	548	1,179	8,494	▲ 1,451.1	▲ 115.3	▲ 620.4
Value.....	2,169	4,989	29,618	▲ 1,265.5	▲ 130.0	▲ 493.7
Unit value.....	\$3.96	\$4.23	\$3.49	▼ (12.0)	▲ 6.8	▼ (17.6)
Ending inventory quantity.....	***	***	***	▲ ***	▲ ***	▲ ***
All import sources:						
Quantity.....	29,571	70,324	44,450	▲ 50.3	▲ 137.8	▼ (36.8)
Value.....	39,978	154,994	80,521	▲ 101.4	▲ 287.7	▼ (48.0)
Unit value.....	\$1.35	\$2.20	\$1.81	▲ 34.0	▲ 63.0	▼ (17.8)
Ending inventory quantity.....	***	***	***	▲ ***	▲ ***	▼ ***
U.S. producers':						
Practical capacity quantity.....	***	***	***	▲ ***	▼ ***	▲ ***
Production quantity.....	***	***	***	▼ ***	▲ ***	▼ ***
Capacity utilization (fn1).....	***	***	***	▼ ***	▲ ***	▼ ***

Table continued.

Table C-4 Continued

2,4-D: Summary data concerning the U.S. total market, including U.S. converters, by item and period

Quantity=1,000 pounds acid equivalent; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per pound acid equivalent; Period changes=percent--exceptions noted

Item	Reported data Calendar year			Period changes Comparison years		
	2021	2022	2023	2021-23	2021-22	2022-23
U.S. producers': Continued						
U.S. shipments (fn2):						
Quantity.....	***	***	***	▼***	▲***	▼***
Value:						
Fully domestic value.....	***	***	***	▼***	▲***	▼***
Value added to imports.....	***	***	***	▲***	▼***	▲***
Overall value for U.S. producers.....	***	***	***	▼***	▲***	▼***
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 (pounds per hour).....	***	***	***	▼***	▼***	▼***
Unit labor costs.....	***	***	***	▲***	▲***	▲***
Net sales:						
Quantity.....	***	***	***	▼***	▲***	▼***
Value.....	***	***	***	▲***	▲***	▼***
Unit value.....	***	***	***	▲***	▲***	▼***
Cost of goods sold (COGS).....	***	***	***	▲***	▲***	▼***
Gross profit or (loss) (fn3).....	***	***	***	▼***	▲***	▼***
SG&A expenses.....	***	***	***	▲***	▲***	▼***
Operating income or (loss) (fn3).....	***	***	***	▼***	▼***	▼***
Net income or (loss) (fn3).....	***	***	***	▼***	▼***	▼***
Unit COGS.....	***	***	***	▲***	▲***	▼***
Unit SG&A expenses.....	***	***	***	▲***	▲***	▲***
Unit operating income or (loss) (fn3).....	***	***	***	▼***	▼***	▼***
Unit net income or (loss) (fn3).....	***	***	***	▼***	▼***	▼***
COGS/sales (fn1).....	***	***	***	▲***	▲***	▲***
Operating income or (loss)/sales (fn1).....	***	***	***	▼***	▼***	▼***
Net income or (loss)/sales (fn1).....	***	***	***	▼***	▼***	▼***
Capital expenditures.....	***	***	***	▲***	▲***	▲***
Research and development expenses.....	***	***	***	▼***	▼***	▲***
Total assets.....	***	***	***	▼***	▲***	▼***

Source: Compiled from data submitted in response to Commission questionnaires and official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting number 2918.99.2010, accessed on April 11, 2024. Imports are based on the imports for consumption data series. Value data reflect landed duty-paid values. 508-compliant tables containing these data are contained in parts D and F 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.--Quantity for U.S. producers' U.S. shipments reflects integrated producer's quantity. Value for U.S. producers' U.S. shipments reflects 2,4-D sold in the United States from domestically manufactured 2,4-D acid (including the value added by U.S. converters to domestic 2,4-D) as well as the incremental value added by U.S. converters to imported 2,4-D. In measuring consumption and market share this methodology avoids reclassifying and/or double counting merchandise already reported as an import. Unit value is based on the fully domestic value.

fn3.--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.

Commercial sales, including U.S. converters

Table C-5

2,4-D: Summary data concerning U.S. market, limited to commercial sales, including U.S. converters, by item and period

Quantity=1,000 pounds acid equivalent; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per pound acid equivalent; Period changes=percent--exceptions noted

Item	Reported data Calendar year			Period changes Comparison years		
	2021	2022	2023	2021-23	2021-22	2022-23
U.S. commercial sales consumption quantity:						
Amount.....	***	***	***	▲ ***	▲ ***	▼ ***
Producers' share (fn1).....	***	***	***	▼ ***	▼ ***	▼ ***
Importers' share (fn1):						
China.....	***	***	***	▼ ***	▲ ***	▼ ***
India.....	***	***	***	▲ ***	▲ ***	▲ ***
Subject sources.....	***	***	***	▲ ***	▲ ***	▼ ***
Nonsubject sources.....	***	***	***	▲ ***	▲ ***	▲ ***
All import sources.....	***	***	***	▲ ***	▲ ***	▲ ***
U.S. commercial sales consumption value:						
Amount.....	***	***	***	▲ ***	▲ ***	▼ ***
Producers' share (fn1):						
Fully domestic value.....	***	***	***	▼ ***	▼ ***	▼ ***
Value added to imports.....	***	***	***	▼ ***	▼ ***	▲ ***
Overall value for U.S. producers.....	***	***	***	▼ ***	▼ ***	▼ ***
Importers' share (fn1):						
China.....	***	***	***	▼ ***	▲ ***	▼ ***
India.....	***	***	***	▲ ***	▲ ***	▲ ***
Subject sources.....	***	***	***	▼ ***	▲ ***	▼ ***
Nonsubject sources.....	***	***	***	▲ ***	▼ ***	▲ ***
All import sources.....	***	***	***	▲ ***	▲ ***	▲ ***
U.S. imports from:						
China:						
Quantity.....	20,230	50,783	20,650	▲ 2.1	▲ 151.0	▼ (59.3)
Value.....	26,394	107,746	26,301	▼ (0.4)	▲ 308.2	▼ (75.6)
Unit value.....	\$1.30	\$2.12	\$1.27	▼ (2.4)	▲ 62.6	▼ (40.0)
Ending inventory quantity.....	***	***	***	▲ ***	▲ ***	▼ ***
India						
Quantity.....	8,793	18,361	15,306	▲ 74.1	▲ 108.8	▼ (16.6)
Value.....	11,415	42,259	24,602	▲ 115.5	▲ 270.2	▼ (41.8)
Unit value.....	\$1.30	\$2.30	\$1.61	▲ 23.8	▲ 77.3	▼ (30.2)
Ending inventory quantity.....	***	***	***	▲ ***	▲ ***	▲ ***
Subject sources:						
Quantity.....	29,023	69,145	35,956	▲ 23.9	▲ 138.2	▼ (48.0)
Value.....	37,809	150,005	50,903	▲ 34.6	▲ 296.7	▼ (66.1)
Unit value.....	\$1.30	\$2.17	\$1.42	▲ 8.7	▲ 66.5	▼ (34.7)
Ending inventory quantity.....	***	***	***	▲ ***	▲ ***	▼ ***
Nonsubject sources:						
Quantity.....	548	1,179	8,494	▲ 1,451.1	▲ 115.3	▲ 620.4
Value.....	2,169	4,989	29,618	▲ 1,265.5	▲ 130.0	▲ 493.7
Unit value.....	\$3.96	\$4.23	\$3.49	▼ (12.0)	▲ 6.8	▼ (17.6)
Ending inventory quantity.....	***	***	***	▲ ***	▲ ***	▲ ***
All import sources:						
Quantity.....	29,571	70,324	44,450	▲ 50.3	▲ 137.8	▼ (36.8)
Value.....	39,978	154,994	80,521	▲ 101.4	▲ 287.7	▼ (48.0)
Unit value.....	\$1.35	\$2.20	\$1.81	▲ 34.0	▲ 63.0	▼ (17.8)
Ending inventory quantity.....	***	***	***	▲ ***	▲ ***	▼ ***

Table continued.

Table C-5 Continued

2,4-D: Summary data concerning U.S. market, limited to commercial sales, including U.S. converters, by item and period

Quantity=1,000 pounds acid equivalent; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per pound acid equivalent; Period changes=percent--exceptions noted

Item	Reported data			Period changes		
	2021	2022	2023	2021-23	2021-22	2022-23
U.S. producers':						
Commerical U.S. shipments (fn2):						
Quantity.....	***	***	***	▼***	▲***	▼***
Value:						
Fully domestic value.....	***	***	***	▼***	▲***	▼***
Value added to imports.....	***	***	***	▲***	▲***	▲***
Overall value for U.S. producers.....	***	***	***	▼***	▲***	▼***
Unit value.....	***	***	***	▲***	▲***	▼***
Commercial sales:						
Quantity.....	***	***	***	▼***	▼***	▼***
Value.....	***	***	***	▼***	▲***	▼***
Unit value.....	***	***	***	▲***	▲***	▼***
Cost of goods sold (COGS).....	***	***	***	▼***	▲***	▼***
Gross profit or (loss) (fn3).....	***	***	***	▼***	▼***	▼***
SG&A expenses.....	***	***	***	▲***	▲***	▼***
Operating income or (loss) (fn3).....	***	***	***	▼***	▼***	▼***
Net income or (loss) (fn3).....	***	***	***	▼***	▼***	▼***
Unit COGS.....	***	***	***	▲***	▲***	▼***
Unit SG&A expenses.....	***	***	***	▲***	▲***	▲***
Unit operating income or (loss) (fn3).....	***	***	***	▼***	▼***	▼***
Unit net income or (loss) (fn3).....	***	***	***	▼***	▼***	▼***
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 and official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting number 2918.99.2010, accessed on April 11, 2024. Imports are based on the imports for consumption data series. Value data reflect landed duty-paid values. 508-compliant tables containing these data are contained in parts D and F 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.--Quantity for U.S. producers' U.S. shipments reflects integrated producer's quantity. Value for U.S. producers' U.S. shipments reflects 2,4-D sold in the United States from domestically manufactured 2,4-D acid (including the value added by U.S. converters to domestic 2,4-D) as well as the incremental value added by U.S. converters to imported 2,4-D. In measuring consumption and market share this methodology avoids reclassifying and/or double counting merchandise already reported as an import. Unit value is based on the fully domestic value.

fn3.--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.

Commercial and swap sales, including U.S. converters

Table C-6

2,4-D: Summary data concerning U.S. market, limited to commercial and swap sales, including U.S. converters, by item and period

Quantity=1,000 pounds acid equivalent; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per pound acid equivalent; Period changes=percent--exceptions noted

Item	Reported data Calendar year			Period changes Comparison years		
	2021	2022	2023	2021-23	2021-22	2022-23
U.S. commercial sales and swap transactions consumption quantity:						
Amount.....	***	***	***	▲ ***	▲ ***	▼ ***
Producers' share (fn1).....	***	***	***	▼ ***	▼ ***	▼ ***
Importers' share (fn1):						
China.....	***	***	***	▲ ***	▲ ***	▼ ***
India.....	***	***	***	▲ ***	▲ ***	▲ ***
Subject sources.....	***	***	***	▲ ***	▲ ***	▼ ***
Nonsubject sources.....	***	***	***	▲ ***	▲ ***	▲ ***
All import sources.....	***	***	***	▲ ***	▲ ***	▲ ***
U.S. commercial sales and swap transactions consumption value:						
Amount.....	***	***	***	▲ ***	▲ ***	▼ ***
Producers' share (fn1):						
Fully domestic value.....	***	***	***	▼ ***	▼ ***	▼ ***
Value added to imports.....	***	***	***	▲ ***	▼ ***	▲ ***
Overall value for U.S. producers.....	***	***	***	▼ ***	▼ ***	▼ ***
Importers' share (fn1):						
China.....	***	***	***	▼ ***	▲ ***	▼ ***
India.....	***	***	***	▲ ***	▲ ***	▲ ***
Subject sources.....	***	***	***	▲ ***	▲ ***	▼ ***
Nonsubject sources.....	***	***	***	▲ ***	▼ ***	▲ ***
All import sources.....	***	***	***	▲ ***	▲ ***	▲ ***
U.S. imports from:						
China:						
Quantity.....	20,230	50,783	20,650	▲2.1	▲151.0	▼(59.3)
Value.....	26,394	107,746	26,301	▼(0.4)	▲308.2	▼(75.6)
Unit value.....	\$1.30	\$2.12	\$1.27	▼(2.4)	▲62.6	▼(40.0)
Ending inventory quantity.....	***	***	***	▲ ***	▲ ***	▼ ***
India						
Quantity.....	8,793	18,361	15,306	▲74.1	▲108.8	▼(16.6)
Value.....	11,415	42,259	24,602	▲115.5	▲270.2	▼(41.8)
Unit value.....	\$1.30	\$2.30	\$1.61	▲23.8	▲77.3	▼(30.2)
Ending inventory quantity.....	***	***	***	▲ ***	▲ ***	▲ ***
Subject sources:						
Quantity.....	29,023	69,145	35,956	▲23.9	▲138.2	▼(48.0)
Value.....	37,809	150,005	50,903	▲34.6	▲296.7	▼(66.1)
Unit value.....	\$1.30	\$2.17	\$1.42	▲8.7	▲66.5	▼(34.7)
Ending inventory quantity.....	***	***	***	▲ ***	▲ ***	▼ ***
Nonsubject sources:						
Quantity.....	548	1,179	8,494	▲1,451.1	▲115.3	▲620.4
Value.....	2,169	4,989	29,618	▲1,265.5	▲130.0	▲493.7
Unit value.....	\$3.96	\$4.23	\$3.49	▼(12.0)	▲6.8	▼(17.6)
Ending inventory quantity.....	***	***	***	▲ ***	▲ ***	▲ ***
All import sources:						
Quantity.....	29,571	70,324	44,450	▲50.3	▲137.8	▼(36.8)
Value.....	39,978	154,994	80,521	▲101.4	▲287.7	▼(48.0)
Unit value.....	\$1.35	\$2.20	\$1.81	▲34.0	▲63.0	▼(17.8)
Ending inventory quantity.....	***	***	***	▲ ***	▲ ***	▼ ***

Table continued.

Table C-6 Continued

2,4-D: Summary data concerning U.S. market, limited to commercial and swap sales, including U.S. converters, by item and period

Quantity=1,000 pounds acid equivalent; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per pound acid equivalent; Period changes=percent--exceptions noted

Item	Reported data			Period changes		
	Calendar year			Comparison years		
	2021	2022	2023	2021-23	2021-22	2022-23
U.S. producers':						
Commerical U.S. shipments & swap transactions (fn2):						
Quantity.....	***	***	***	▼***	▼***	▼***
Value:						
Fully domestic value.....	***	***	***	▼***	▲***	▼***
Value added to imports.....	***	***	***	▲***	▲***	▲***
Overall value for U.S. producers.....	***	***	***	▼***	▲***	▼***
Unit value.....	***	***	***	▲***	▲***	▼***
Commercial sales & swap transactions:						
Quantity.....	***	***	***	▼***	▼***	▼***
Value.....	***	***	***	▼***	▲***	▼***
Unit value.....	***	***	***	▲***	▲***	▼***
Cost of goods sold (COGS).....	***	***	***	▼***	▲***	▼***
Gross profit or (loss) (fn3).....	***	***	***	▼***	▼***	▼***
SG&A expenses.....	***	***	***	▲***	▲***	▼***
Operating income or (loss) (fn3).....	***	***	***	▼***	▼***	▼***
Net income or (loss) (fn3).....	***	***	***	▼***	▼***	▼***
Unit COGS.....	***	***	***	▲***	▲***	▼***
Unit SG&A expenses.....	***	***	***	▲***	▲***	▲***
Unit operating income or (loss) (fn3).....	***	***	***	▼***	▼***	▼***
Unit net income or (loss) (fn3).....	***	***	***	▼***	▼***	▼***
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 and official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting number 2918.99.2010, accessed on April 11, 2024. Imports are based on the imports for consumption data series. Value data reflect landed duty-paid values. 508-compliant tables containing these data are contained in parts D and F 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.--Quantity for U.S. producers' U.S. shipments reflects integrated producer's quantity. Value for U.S. producers' U.S. shipments reflects 2,4-D sold in the United States from domestically manufactured 2,4-D acid (including the value added by U.S. converters to domestic 2,4-D) as well as the incremental value added by U.S. converters to imported 2,4-D. In measuring consumption and market share this methodology avoids reclassifying and/or double counting merchandise already reported as an import. Unit value is based on the fully domestic value.

fn3.--Percent changes only calculated when both comparison values represent profits; The directional change in profitability provided when one or both comparison values represent a loss.

APPENDIX D

TRADE DATA INCLUDING U.S. CONVERTERS

Table D-1

2,4-D: U.S. producers, including U.S. converters, their position on the petition, location of production, and share of reported production, 2023

Shares in percent

Firm	Position on petition	Production location(s)	Share of production of 2,4-D acid	Share of production using imported/ purchased 2,4-D acid
Albaugh	***	St. Joseph, MO	***	***
Corteva	Petitioner	Midland, MI	***	***
Drexel	***	Memphis, TN	***	***
Nufarm	***	Chicago Heights, IL	***	***
PBI-Gordon	***	Kansas City, KS	***	***
All firms	Various	Various	100.0	100.0

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

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

Table D-2

2,4-D: U.S. producers', including U.S. converters, 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.

Table D-3**2,4-D: U.S. producers', including U.S. converters, reported changes in operations, since January 1, 2021**

Item	Firm name and narrative response on changes in operations
Prolonged shutdowns	***
Prolonged shutdowns	***
Production curtailments	***
Expansions	***
Weather-related or force majeure events	***
Weather-related or force majeure events	***
Weather-related or force majeure events	***
Other	***
COVID-19	***
COVID-19	***
COVID-19	***
COVID-19	***

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

Table D-4

2,4-D: U.S. producers', including U.S. converters, reported domestic production operations

Firm	Narrative response on domestic production operations
Albaugh	***
Corteva	***
Drexel Chemical	***
Nufarm	***
PBI-Gordon	***

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

Table D-5

2,4-D: U.S. producers', including U.S. converters, reported domestic production operations, by factor

Item	Firm name and narrative response on domestic production operations
Capital investments	***
Capital investments	***

Item	Firm name and narrative response on domestic production operations
Capital investments	***
Capital investments	***
Capital investments	***
Technical expertise	***

Item	Firm name and narrative response on domestic production operations
Technical expertise	***
Technical expertise	***

Item	Firm name and narrative response on domestic production operations
Technical expertise	***
Technical expertise	***
Value added	***
Value added	***
Value added	***
Value added	***
Value added	***
Employment	***

Item	Firm name and narrative response on domestic production operations
Employment	***
Employment	***

Item	Firm name and narrative response on domestic production operations
Employment	***
Employment	***
Quantity, type, and source of parts	***
Quantity, type, and source of parts	***
Quantity, type, and source of parts	***
Quantity, type, and source of parts	***
Quantity, type, and source of parts	***
Costs and activities	***
Costs and activities	***

Item	Firm name and narrative response on domestic production operations
Costs and activities	***
Costs and activities	***
Costs and activities	***

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

Table D-6**2,4-D: U.S. producers', including U.S. converters, reported domestic production operations, by factor**

Value in 1,000 dollars; Value added in percent; Employment in average number of PRWs

Item	Albaugh	Corteva	Drexel	Nufarm	PBI-Gordon
Capital investments: Greenfield	***	***	***	***	***
Capital investments: Assets	***	***	***	***	***
Capital investments: Capital expenditures	***	***	***	***	***
Technical expertise: R&D expenses	***	***	***	***	***
Value added	*** percent	*** percent	*** percent	*** percent	*** percent
Employment	*** PRWs	*** PRWs	*** PRWs	*** PRWs	*** PRWs
Quantity, type, and source of parts	***	***	***	***	***

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

Note: Value added is calculated as the share conversion costs (direct labor and other factory costs) out of cost of goods sold (COGS).

Table D-7**2,4-D: U.S. producers', including U.S. converters, reported complexity and importance of operations**

Ratings of 1 are minimally complex, intense, or important; Ratings of 5 are extremely complex, intense, or important

Firm	Rating	Narrative response on complexity and importance rating
Albaugh	***	***
Corteva	***	***
Drexel Chemical	***	***
Nufarm	***	***
PBI-Gordon	***	***

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

Table D-8**2,4-D: U.S. producers', including U.S. converters, capacity, production, and utilization, by period**

Capacity and production in 1,000 pounds acid equivalent; utilization in percent

Item	Measure	2021	2022	2023
Capacity	Quantity	***	***	***
Production	Quantity	***	***	***
Utilization	Ratio	***	***	***

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

Note: Production may include double counting as production from U.S. producer *** may be used as an input for production from U.S. converters.

Table D-9**2,4-D: U.S. producers', including U.S. converters, reported constraints to practical overall capacity, since January 1, 2021**

Item	Firm name and narrative response on constraints to practical overall capacity
Production bottlenecks	***
Production bottlenecks	***
Production bottlenecks	***
Existing labor force	***
Existing labor force	***
Supply of material inputs	***
Supply of material inputs	***
Logistics/transportation	***
Other constraints	***
Other constraints	***

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

Table D-10**2,4-D: U.S. producers', including U.S. converters, output: Practical capacity, by firm and period**

Capacity in 1,000 pounds acid equivalent

Firm	2021	2022	2023
Albaugh	***	***	***
Corteva	***	***	***
Drexel	***	***	***
Nufarm	***	***	***
PBI-Gordon	***	***	***
All firms	***	***	***

Table continued.

Table D-10 Continued**2,4-D: U.S. producers', including U.S. converters, output: Production, by firm and period**

Production in 1,000 pounds acid equivalent

Firm	2021	2022	2023
Albaugh	***	***	***
Corteva	***	***	***
Drexel	***	***	***
Nufarm	***	***	***
PBI-Gordon	***	***	***
All firms	***	***	***

Table continued.

Table D-10 Continued**2,4-D: U.S. producers', including U.S. converters, output: Capacity utilization, by firm and period**

Capacity utilization ratios in percent

Firm	2021	2022	2023
Albaugh	***	***	***
Corteva	***	***	***
Drexel	***	***	***
Nufarm	***	***	***
PBI-Gordon	***	***	***
All firms	***	***	***

Table continued.

Table D-10 Continued**2,4-D: U.S. producers', including U.S. converters, output: Share of production, by firm and period**

Share of production in percent

Firm	2021	2022	2023
Albaugh	***	***	***
Corteva	***	***	***
Drexel	***	***	***
Nufarm	***	***	***
PBI-Gordon	***	***	***
All firms	100.0	100.0	100.0

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

Note: Production may include double counting as production from U.S. producer *** may be used as an input for production from U.S. converters.

Table D-11**2,4-D: U.S. producers', including U.S. converters, total shipments, by destination and period**

Quantity in 1,000 pounds acid equivalent; Value in 1,000 dollars; Unit values in dollars per pound acid equivalent; Shares in percent

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

Note: Shipments may include double counting as production from U.S. producer *** may be used as an input for production from U.S. converters.

Table D-12**2,4-D: U.S. producers', including U.S. converters, U.S. shipments, by type and period**

Quantity in 1,000 pounds acid equivalent; Value in 1,000 dollars; Unit values in dollars per pound acid equivalent

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

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

Note: Shipments may include double counting as production from U.S. producer *** may be used as an input for production from U.S. converters.

Table D-13**2,4-D: U.S. producers', including U.S. converters, U.S. shipments for use in apparent consumption, by period**

Quantity in 1,000 pounds acid equivalent; Value in 1,000 dollars

Item	Measure	2021	2022	2023
U.S. shipments	Quantity	***	***	***
U.S. shipments integrated	Value	***	***	***
U.S. shipments value added to domestic	Value	***	***	***
U.S. shipments fully domestic	Value	***	***	***
U.S. shipments value added to imports	Value	***	***	***
U.S. shipments total	Value	***	***	***

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

Note: Quantity for U.S. producers' U.S. shipments reflects integrated producer's U.S. shipment quantities. Value for U.S. producers' U.S. shipments reflects 2,4-D sold in the United States from domestically manufactured 2,4-D acid (including the value added by U.S. converters to domestic 2,4-D) as well as the incremental value added by U.S. converters to imported 2,4-D. In measuring consumption and market share this methodology avoids reclassifying and/or double counting merchandise already reported as an import.

Table D-14**2,4-D: U.S. producers', including U.S. converters, inventories and their ratio to select items, by period**

Quantity in 1,000 pounds acid equivalent; inventory ratios in percent

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

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

Note: Shipments may include double counting as production from U.S. producer *** may be used as an input for production from U.S. converters.

Table D-15

2,4-D: **'s business model for U.S. production formulated 2,4-D products, by sources of 2,4-D input into production and period**

Quantity in 1,000 pounds acid equivalent; Shares and ratios in percent

Source of 2,4-D in domestic formulation	Measure	2021	2022	2023
Domestic	Quantity	***	***	***
Subject	Quantity	***	***	***
Nonsubject	Quantity	***	***	***
All sources into domestic formulation	Quantity	***	***	***
Domestic	Value	***	***	***
Subject	Value	***	***	***
Nonsubject	Value	***	***	***
All sources into domestic formulation	Value	***	***	***
Domestic	Unit value	***	***	***
Subject	Unit value	***	***	***
Nonsubject	Unit value	***	***	***
All sources into domestic formulation	Unit value	***	***	***
Domestic	Share	***	***	***
Subject	Share	***	***	***
Nonsubject	Share	***	***	***
All sources into domestic formulation	Share	***	***	***
*** commercial U.S. shipments of 2,4-D	Unit value	***	***	***
*** U.S. imports of 2,4-D	Unit value	***	***	***

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

Note: Zeroes, null values, and undefined calculations are suppressed and shown as "---". Share is the share of quantity. *** indicated that it ***.

Table D-16

2,4-D: **'s U.S. production, U.S. imports from subject sources, and ratio of subject imports to production, by period**

Quantity in 1,000 pounds acid equivalent; Shares and ratios in percent

Item	Measure	2021	2022	2023
U.S. production	Quantity	***	***	***
Imports from China	Quantity	***	***	***
Imports from India	Quantity	***	***	***
Imports from subject sources	Quantity	***	***	***
Imports from China to U.S. production	Ratio	***	***	***
Imports from India to U.S. production	Ratio	***	***	***
Imports from subject sources to U.S. production	Ratio	***	***	***

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

Note: Zeroes, null values, and undefined calculations are suppressed and shown as "---". Share is the share of quantity.

Table D-17**2,4-D: ***'s U.S. production, purchases of U.S. imports from subject sources, related details and select ratios, by period**

Quantity in 1,000 pounds acid equivalent; Shares and ratios in percent

Item	Measure	2021	2022	2023
***'s U.S. production	Quantity	***	***	***
***'s purchases of imports from India imported by ***	Quantity	***	***	***
***'s imports from India	Quantity	***	***	***
Overall U.S. imports from India	Quantity	***	***	***
***'s purchases of imports from India imported by *** relative to ***'s imports from India	Ratio	***	***	***
***'s imports from India relative to overall U.S. imports from India	Ratio	***	***	***
***'s imports from India relative to ***'s U.S. production	Ratio	***	***	***

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

Table D-18**2,4-D: ***'s related party ratios combined, by period**

Ratios in percent.

Item	Measure	2021	2022	2023
Import ratio	Ratio	***	***	***
Purchase ratio	Ratio	***	***	***
Combined import and purchase ratio	Ratio	***	***	***

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

Table D-19

2,4-D: *'s business model for U.S. production formulated 2,4-D products, by sources of 2,4-D input into production and period**

Quantity in 1,000 pounds acid equivalent; Shares and ratios in percent

Source of 2,4-D in domestic formulation	Measure	2021	2022	2023
Domestic	Quantity	***	***	***
Subject	Quantity	***	***	***
Nonsubject	Quantity	***	***	***
All sources into domestic formulation	Quantity	***	***	***
Domestic	Value	***	***	***
Subject	Value	***	***	***
Nonsubject	Value	***	***	***
All sources into domestic formulation	Value	***	***	***
Domestic	Unit value	***	***	***
Subject	Unit value	***	***	***
Nonsubject	Unit value	***	***	***
All sources into domestic formulation	Unit value	***	***	***
Domestic	Share	***	***	***
Subject	Share	***	***	***
Nonsubject	Share	***	***	***
All sources into domestic formulation	Share	***	***	***
*** commercial U.S. shipments of 2,4-D	Unit value	***	***	***
*** U.S. imports of 2,4-D	Unit value	***	***	***

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

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

Table D-20

2,4-D: *'s U.S. production, U.S. imports from subject sources, and ratio of subject imports to production, by period**

Quantity in 1,000 pounds acid equivalent; Shares and ratios in percent

Item	Measure	2021	2022	2023
U.S. production	Quantity	***	***	***
Imports from China	Quantity	***	***	***
Imports from India	Quantity	***	***	***
Imports from subject sources	Quantity	***	***	***
Imports from China to U.S. production	Ratio	***	***	***
Imports from India to U.S. production	Ratio	***	***	***
Imports from subject sources to U.S. production	Ratio	***	***	***

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

Table D-21

2,4-D: **'s business model for U.S. production formulated 2,4-D products, by sources of 2,4-D input into production and period**

Quantity in 1,000 pounds acid equivalent; Shares and ratios in percent

Source of 2,4-D in domestic formulation	Measure	2021	2022	2023
Domestic	Quantity	***	***	***
Subject	Quantity	***	***	***
Nonsubject	Quantity	***	***	***
All sources into domestic formulation	Quantity	***	***	***
Domestic	Value	***	***	***
Subject	Value	***	***	***
Nonsubject	Value	***	***	***
All sources into domestic formulation	Value	***	***	***
Domestic	Unit value	***	***	***
Subject	Unit value	***	***	***
Nonsubject	Unit value	***	***	***
All sources into domestic formulation	Unit value	***	***	***
Domestic	Share	***	***	***
Subject	Share	***	***	***
Nonsubject	Share	***	***	***
All sources into domestic formulation	Share	***	***	***
*** commercial U.S. shipments of 2,4-D	Unit value	***	***	***
*** U.S. imports of 2,4-D	Unit value	***	***	***

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 "---". Share is the share of quantity.

Table D-22

2,4-D: **'s U.S. production, U.S. imports from subject sources, and ratio of subject imports to production, by period**

Quantity in 1,000 pounds acid equivalent; Shares and ratios in percent

Item	Measure	2021	2022	2023
U.S. production	Quantity	***	***	***
Imports from China	Quantity	***	***	***
Imports from India	Quantity	***	***	***
Imports from subject sources	Quantity	***	***	***
Imports from China to U.S. production	Ratio	***	***	***
Imports from India to U.S. production	Ratio	***	***	***
Imports from subject sources to U.S. production	Ratio	***	***	***

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

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

Table D-23

2,4-D: **'s business model for U.S. production formulated 2,4-D products, by sources of 2,4-D input into production and period**

Quantity in 1,000 pounds acid equivalent; Shares and ratios in percent

Source of 2,4-D in domestic formulation	Measure	2021	2022	2023
Domestic	Quantity	***	***	***
Subject	Quantity	***	***	***
Nonsubject	Quantity	***	***	***
All sources into domestic formulation	Quantity	***	***	***
Domestic	Value	***	***	***
Subject	Value	***	***	***
Nonsubject	Value	***	***	***
All sources into domestic formulation	Value	***	***	***
Domestic	Unit value	***	***	***
Subject	Unit value	***	***	***
Nonsubject	Unit value	***	***	***
All sources into domestic formulation	Unit value	***	***	***
Domestic	Share	***	***	***
Subject	Share	***	***	***
Nonsubject	Share	***	***	***
All sources into domestic formulation	Share	***	***	***
*** commercial U.S. shipments of 2,4-D	Unit value	***	***	***
*** U.S. imports of 2,4-D	Unit value	***	***	***

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 "---". Share is the share of quantity.

Table D-24

2,4-D: **'s U.S. production, U.S. imports from subject sources, and ratio of subject imports to production, by period**

Quantity in 1,000 pounds acid equivalent; Shares and ratios in percent

Item	Measure	2021	2022	2023
U.S. production	Quantity	***	***	***
Imports from China	Quantity	***	***	***
Imports from India	Quantity	***	***	***
Imports from subject sources	Quantity	***	***	***
Imports from China to U.S. production	Ratio	***	***	***
Imports from India to U.S. production	Ratio	***	***	***
Imports from subject sources to U.S. production	Ratio	***	***	***

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

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

Table D-25**2,4-D: ***'s U.S. production, purchases of U.S. imports from subject sources, related details and select ratios, by period**

Quantity in 1,000 pounds acid equivalent; Shares and ratios in percent

Item	Measure	2021	2022	2023
***'s U.S. production	Quantity	***	***	***
***'s purchases of imports from India imported by ***	Quantity	***	***	***
***'s purchases of imports from India imported by ***	Quantity	***	***	***
***'s purchases of imports from India imported by ***	Quantity	***	***	***
***'s imports from India	Quantity	***	***	***
***'s imports from India	Quantity	***	***	***
***'s imports from India	Quantity	***	***	***
Overall U.S. imports from India	Quantity	***	***	***
***'s purchases of imports from India imported by *** relative to ***'s imports from India	Ratio	***	***	***
***'s purchases of imports from India imported by *** relative to ***'s imports from India	Ratio	***	***	***
***'s purchases of imports from India imported by *** relative to ***'s imports from India	Ratio	***	***	***
***'s imports from India relative to overall U.S. imports from India	Ratio	***	***	***
***'s imports from India relative to overall U.S. imports from India	Ratio	***	***	***
***'s imports from India relative to overall U.S. imports from India	Ratio	***	***	***
***'s imports from India relative to ***'s U.S. production	Ratio	***	***	***
***'s imports from India relative to ***'s U.S. production	Ratio	***	***	***
***'s imports from India relative to ***'s U.S. production	Ratio	***	***	***

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

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

Table D-26**2,4-D: ***'s related party ratios combined, by period**

Ratios in percent.

Item	Measure	2021	2022	2023
Import ratio	Ratio	***	***	***
Purchase ratio	Ratio	***	***	***
Combined import and purchase ratio	Ratio	***	***	***

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

Table D-27**2,4-D: U.S. converters' reasons for imports, by firm**

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

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

Table D-28**2,4-D: U.S. producers', including U.S. converters, employment related information, by item and period**

Item	2021	2022	2023
Production and related workers (PRWs) (number)	***	***	***
Total hours worked (1,000 hours)	***	***	***
Hours worked per PRW (hours)	***	***	***
Wages paid (\$1,000)	***	***	***
Hourly wages (dollars per hour)	***	***	***
Productivity (pounds acid equivalent per hour)	***	***	***
Unit labor costs (dollars per pound acid equivalent)	***	***	***

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

Table D-29**2,4-D: Apparent U.S. consumption and market shares, including U.S. converters, for the total market based on quantity data, by source and period**

Quantity in 1,000 pounds acid equivalent; Shares in percent

Source	Measure	2021	2022	2023
All U.S. producers	Quantity	***	***	***
China	Quantity	20,230	50,783	20,650
India	Quantity	8,793	18,361	15,306
Subject sources	Quantity	29,023	69,145	35,956
Nonsubject sources	Quantity	548	1,179	8,494
All import sources	Quantity	***	***	***
All sources	Quantity	***	***	***
All U.S. producers	Share	***	***	***
China	Share	***	***	***
India	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 and official U.S. import statistics of the U.S. Department of Commerce Census Bureau using statistical reporting number 2918.99.2010, accessed April 11, 2024. Imports are based on the imports for consumption data series.

Note: Quantity for U.S. producers' U.S. shipments reflects integrated producer's U.S. shipment quantities. Value for U.S. producers' U.S. shipments reflects 2,4-D sold in the United States from domestically manufactured 2,4-D acid (including the value added by U.S. converters to domestic 2,4-D) as well as the incremental value added by U.S. converters to imported 2,4-D. In measuring consumption and market share this methodology avoids reclassifying and/or double counting merchandise already reported as an import.

Table D-30**2,4-D: Apparent U.S. consumption and market shares, including U.S. converters, limited to commercial sales quantity data, by source and period**

Quantity in 1,000 pounds acid equivalent; Shares in percent

Source	Measure	2021	2022	2023
All U.S. producers	Quantity	***	***	***
China	Quantity	20,230	50,783	20,650
India	Quantity	8,793	18,361	15,306
Subject sources	Quantity	29,023	69,145	35,956
Nonsubject sources	Quantity	548	1,179	8,494
All import sources	Quantity	***	***	***
All sources	Quantity	***	***	***
All U.S. producers	Share	***	***	***
China	Share	***	***	***
India	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 and official U.S. import statistics of the U.S. Department of Commerce Census Bureau using statistical reporting number 2918.99.2010, accessed April 11, 2024. Imports are based on the imports for consumption data series.

Note: Shipments may include double counting as production from U.S. producer *** may be used as an input for production from U.S. converters.

Table D-31**2,4-D: Apparent U.S. consumption and market shares, including non-2,4-D acid producing U.S. converters, combining commercial sales and swaps quantity data, by source and period**

Quantity in 1,000 pounds acid equivalent; Shares in percent

Source	Measure	2021	2022	2023
All U.S. producers	Quantity	***	***	***
China	Quantity	20,230	50,783	20,650
India	Quantity	8,793	18,361	15,306
Subject sources	Quantity	29,023	69,145	35,956
Nonsubject sources	Quantity	548	1,179	8,494
All import sources	Quantity	***	***	***
All sources	Quantity	***	***	***
All U.S. producers	Share	***	***	***
China	Share	***	***	***
India	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 and official U.S. import statistics of the U.S. Department of Commerce Census Bureau using statistical reporting number 2918.99.2010, accessed April 11, 2024. Imports are based on the imports for consumption data series.

Note: Shipments may include double counting as production from U.S. producer *** may be used as an input for production from U.S. converters.

Table D-32**2,4-D: Apparent U.S. consumption and market shares, including U.S. converters, for the total market based on value data, by source and period**

Value in 1,000 dollars; Shares in percent

Source	Measure	2021	2022	2023
U.S. producer and converters: Fully domestic value	Value	***	***	***
U.S. producer and converters: Value added to imports	Value	***	***	***
U.S. producer and converters: Overall value	Value	***	***	***
China	Value	26,394	107,746	26,301
India	Value	11,415	42,259	24,602
Subject sources	Value	37,809	150,005	50,903
Nonsubject sources	Value	2,169	4,989	29,618
All import sources	Value	***	***	***
All sources	Value	***	***	***
U.S. producer and converters: Fully domestic value	Share	***	***	***
U.S. producer and converters: Value added to imports	Share	***	***	***
U.S. producer and converters: Overall value	Share	***	***	***
China	Share	***	***	***
India	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 and official U.S. import statistics of the U.S. Department of Commerce Census Bureau using statistical reporting number 2918.99.2010, accessed April 11, 2024. Imports are based on the imports for consumption data series. Value data reflect landed duty-paid values.

Note: Quantity for U.S. producers' U.S. shipments reflects integrated producer's U.S. shipment quantities. Value for U.S. producers' U.S. shipments reflects 2,4-D sold in the United States from domestically manufactured 2,4-D acid (including the value added by U.S. converters to domestic 2,4-D) as well as the incremental value added by U.S. converters to imported 2,4-D. In measuring consumption and market share this methodology avoids reclassifying and/or double counting merchandise already reported as an import.

Table D-33**2,4-D: Apparent U.S. consumption and market shares, including U.S. converters, limited to commercial sales value data, by source and period**

Value in 1,000 dollars; Shares in percent

Source	Measure	2021	2022	2023
U.S. producer and converters: Fully domestic value	Value	***	***	***
U.S. producer and converters: Value added to imports	Value	***	***	***
U.S. producer and converters: Overall value	Value	***	***	***
China	Value	26,394	107,746	26,301
India	Value	11,415	42,259	24,602
Subject sources	Value	37,809	150,005	50,903
Nonsubject sources	Value	2,169	4,989	29,618
All import sources	Value	***	***	***
All sources	Value	***	***	***
U.S. producer and converters: Fully domestic value	Share	***	***	***
U.S. producer and converters: Value added to imports	Share	***	***	***
U.S. producer and converters: Overall value	Share	***	***	***
China	Share	***	***	***
India	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 and official U.S. import statistics of the U.S. Department of Commerce Census Bureau using statistical reporting number 2918.99.2010, accessed April 11, 2024. Imports are based on the imports for consumption data series. Value data reflect landed duty-paid values.

Note: Quantity for U.S. producers' U.S. shipments reflects integrated producer's U.S. shipment quantities. Value for U.S. producers' U.S. shipments reflects 2,4-D sold in the United States from domestically manufactured 2,4-D acid (including the value added by U.S. converters to domestic 2,4-D) as well as the incremental value added by U.S. converters to imported 2,4-D. In measuring consumption and market share this methodology avoids reclassifying and/or double counting merchandise already reported as an import.

Table D-34**2,4-D: Apparent U.S. consumption and market shares, including U.S. converters, combining commercial sales and swaps value data, by source and period**

Value in 1,000 dollars; Shares in percent

Source	Measure	2021	2022	2023
U.S. producer and converters: Fully domestic value	Value	***	***	***
U.S. producer and converters: Value added to imports	Value	***	***	***
U.S. producer and converters: Overall value	Value	***	***	***
China	Value	26,394	107,746	26,301
India	Value	11,415	42,259	24,602
Subject sources	Value	37,809	150,005	50,903
Nonsubject sources	Value	2,169	4,989	29,618
All import sources	Value	***	***	***
All sources	Value	***	***	***
U.S. producer and converters: Fully domestic value	Share	***	***	***
U.S. producer and converters: Value added to imports	Share	***	***	***
U.S. producer and converters: Overall value	Share	***	***	***
China	Share	***	***	***
India	Share	***	***	***
Subject sources	Share	***	***	***
Nonsubject sources	Share	***	***	***
All import sources	Share	***	***	***
All sources	Share	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires and official U.S. import statistics of the U.S. Department of Commerce Census Bureau using statistical reporting number 2918.99.2010, accessed April 11, 2024. Imports are based on the imports for consumption data series. Value data reflect landed duty-paid values.

Note: Quantity for U.S. producers' U.S. shipments reflects integrated producer's U.S. shipment quantities. Value for U.S. producers' U.S. shipments reflects 2,4-D sold in the United States from domestically manufactured 2,4-D acid (including the value added by U.S. converters to domestic 2,4-D) as well as the incremental value added by U.S. converters to imported 2,4-D. In measuring consumption and market share this methodology avoids reclassifying and/or double counting merchandise already reported as an import.

APPENDIX E

PRICING PRODUCT DATA INCLUDING U.S. CONVERTERS

Table E-1

2,4-D: Weighted-average f.o.b. prices and quantities of domestic produced and synthesized and imported product 1, and margins of underselling/(overselling), by source and quarter

Quantity in 1,000 pounds acid equivalent; Prices in dollars per pound acid equivalent; Margins in percent

Period	U.S. price	U.S. quantity	China price	China quantity	China margin	India price	India quantity	India margin
2021 Q1	***	***	***	***	***	***	***	***
2021 Q2	***	***	***	***	***	***	***	***
2021 Q3	***	***	***	***	***	***	***	***
2021 Q4	***	***	***	***	***	***	***	***
2022 Q1	***	***	***	***	***	***	***	***
2022 Q2	***	***	***	***	***	***	***	***
2022 Q3	***	***	***	***	***	***	***	***
2022 Q4	***	***	***	***	***	***	***	***
2023 Q1	***	***	***	***	***	***	***	***
2023 Q2	***	***	***	***	***	***	***	***
2023 Q3	***	***	***	***	***	***	***	***
2023 Q4	***	***	***	***	***	***	***	***

Table continued.

Table E-1 Continued

2,4-D: Weighted-average f.o.b. prices and quantities of domestic produced and synthesized and imported product 1, and margins of underselling/(overselling), by source and quarter

Quantity in 1,000 pounds acid equivalent; Prices in dollars per pound acid equivalent; Margins in percent

Period	U.S. price	U.S. quantity	Subject price	Subject quantity	Subject margin
2021 Q1	***	***	***	***	***
2021 Q2	***	***	***	***	***
2021 Q3	***	***	***	***	***
2021 Q4	***	***	***	***	***
2022 Q1	***	***	***	***	***
2022 Q2	***	***	***	***	***
2022 Q3	***	***	***	***	***
2022 Q4	***	***	***	***	***
2023 Q1	***	***	***	***	***
2023 Q2	***	***	***	***	***
2023 Q3	***	***	***	***	***
2023 Q4	***	***	***	***	***

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

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

Note: Product 1: 2,4-D acid, Form: white to brown crystalline solid.

Figure E-1

2,4-D: Weighted-average f.o.b. prices and quantities of domestic produced and synthesized 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: 2,4-D acid, Form: white to brown crystalline solid.

Table E-2**2,4-D: Weighted-average f.o.b. prices and quantities of domestic produced, and synthesized and imported product 4, and margins of underselling/(overselling), by source and quarter**

Quantity in 1,000 pounds acid equivalent; Prices in dollars per pound acid equivalent; Margins in percent

Period	U.S. price	U.S. quantity	China price	China quantity	China margin	India price	India quantity	India margin
2021 Q1	***	***	***	***	***	***	***	***
2021 Q2	***	***	***	***	***	***	***	***
2021 Q3	***	***	***	***	***	***	***	***
2021 Q4	***	***	***	***	***	***	***	***
2022 Q1	***	***	***	***	***	***	***	***
2022 Q2	***	***	***	***	***	***	***	***
2022 Q3	***	***	***	***	***	***	***	***
2022 Q4	***	***	***	***	***	***	***	***
2023 Q1	***	***	***	***	***	***	***	***
2023 Q2	***	***	***	***	***	***	***	***
2023 Q3	***	***	***	***	***	***	***	***
2023 Q4	***	***	***	***	***	***	***	***

Table continued.

Table E-2**2,4-D: Weighted-average f.o.b. prices and quantities of domestic produced, and synthesized and imported product 4, and margins of underselling/(overselling), by source and quarter**

Quantity in 1,000 pounds acid equivalent; Prices in dollars per pound acid equivalent; Margins in percent

Period	U.S. price	U.S. quantity	Subject price	Subject quantity	Subject margin
2021 Q1	***	***	***	***	***
2021 Q2	***	***	***	***	***
2021 Q3	***	***	***	***	***
2021 Q4	***	***	***	***	***
2022 Q1	***	***	***	***	***
2022 Q2	***	***	***	***	***
2022 Q3	***	***	***	***	***
2022 Q4	***	***	***	***	***
2023 Q1	***	***	***	***	***
2023 Q2	***	***	***	***	***
2023 Q3	***	***	***	***	***
2023 Q4	***	***	***	***	***

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

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

Note: Product 4: 2,4-D 2-ethylhexylester (“EHE”), Form: dark amber liquid.

Figure E-2

2,4-D: Weighted-average f.o.b. prices and quantities of domestic produced and synthesized 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: 2,4-D 2-ethylhexylester ("EHE"), Form: dark amber liquid

Table E-3**2,4-D: Weighted-average f.o.b. prices, unit LDP values and quantities of domestic produced and synthesized and imported product 4, and differentials, by source and quarter**

Quantity in 1,000 pounds acid equivalent; Prices and unit LDP values in dollars per pound acid equivalent; Differentials in percent

Period	U.S. price	U.S. quantity	China unit LDP value	China quantity	China differential	India unit LDP value	India quantity	India differential
2021 Q1	***	***	***	***	***	***	***	***
2021 Q2	***	***	***	***	***	***	***	***
2021 Q3	***	***	***	***	***	***	***	***
2021 Q4	***	***	***	***	***	***	***	***
2022 Q1	***	***	***	***	***	***	***	***
2022 Q2	***	***	***	***	***	***	***	***
2022 Q3	***	***	***	***	***	***	***	***
2022 Q4	***	***	***	***	***	***	***	***
2023 Q1	***	***	***	***	***	***	***	***
2023 Q2	***	***	***	***	***	***	***	***
2023 Q3	***	***	***	***	***	***	***	***
2023 Q4	***	***	***	***	***	***	***	***

Table continued.

Table E-3**2,4-D: Weighted-average f.o.b. prices, unit LDP values and quantities of domestic produced and synthesized and imported product 4, and differentials, by source and quarter**

Quantity in 1,000 pounds acid equivalent; Prices and unit LDP values in dollars per pound acid equivalent; Differentials in percent

Period	U.S. price	U.S. quantity	Subject unit LDP value	Subject quantity	Subject differential
2021 Q1	***	***	***	***	***
2021 Q2	***	***	***	***	***
2021 Q3	***	***	***	***	***
2021 Q4	***	***	***	***	***
2022 Q1	***	***	***	***	***
2022 Q2	***	***	***	***	***
2022 Q3	***	***	***	***	***
2022 Q4	***	***	***	***	***
2023 Q1	***	***	***	***	***
2023 Q2	***	***	***	***	***
2023 Q3	***	***	***	***	***
2023 Q4	***	***	***	***	***

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

Note: U.S. producer price data is the same as that presented in table E-2.

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

Note: Product 4: 2,4-D 2-ethylhexylester (“EHE”), Form: dark amber liquid.

Figure E-3

2,4-D: Weighted-average f.o.b. prices, unit LDP values and quantities of domestic produced and synthesized and imported product 4, and differentials, 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: 2,4-D 2-ethylhexylester ("EHE"), Form: dark amber liquid

Table E-4**2,4-D: Summary of price data, by product and source, January 2021 through December 2023**

Prices in dollars per pound acid equivalent; Quantity in 1,000 pounds acid equivalent; Change in percent

Product	Source	Number of quarters	Quantity	Low price	High price	First quarter price	Last quarter price	Change over period
Product 1	United States	***	***	***	***	***	***	***
Product 1	China	***	***	***	***	***	***	***
Product 1	India	***	***	***	***	***	***	***
Product 4	United States	***	***	***	***	***	***	***
Product 4	China	***	***	***	***	***	***	***
Product 4	India	***	***	***	***	***	***	***

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

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

Note: Percentage change from the first quarter in which data were available in 2021 to the last quarter in which data were available in 2023.

Table E-5**2,4-D: Summary of purchase cost data, by product and source, January 2021 through December 2023**

Prices and unit LDP values in dollars per pound acid equivalent; Quantity in 1,000 pounds acid equivalent; Change in percent

Product	Source	Number of quarters	Quantity	Low price/Unit LDP value	High price/Unit LDP value	First quarter price/Unit LDP value	Last quarter price/Unit LDP value	Change over period
Product 4	United States	***	***	***	***	***	***	***
Product 4	China	***	***	***	***	***	***	***
Product 4	India	***	***	***	***	***	***	***

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

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

Note: Percentage change from the first quarter in which data were available in 2021 to the last quarter in which data were available in 2023.

Table E-6**2,4-D: Instances and quantities of underselling/overselling and the range and average of margins, by product**

Quantity in 1,000 pounds acid equivalent; Margins in percent

Products	Type	Number of quarters	Quantity	Average margin	Min margin	Max margin
Product 1	Underselling	14	***	***	***	***
Product 4	Underselling	4	***	***	***	***
All products	Underselling	18	***	***	***	***
Product 1	Overselling	8	***	***	***	***
Product 4	Overselling	6	***	***	***	***
All products	Overselling	14	***	***	***	***

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

Table E-7**2,4-D: Instances and quantities of underselling/overselling and the range and average of margins, by source**

Quantity in 1,000 pounds acid equivalent; Margins in percent

Sources	Type	Number of quarters	Quantity	Average margin	Min margin	Max margin
China	Underselling	6	***	***	***	***
India	Underselling	12	***	***	***	***
All subject sources	Underselling	18	***	***	***	***
China	Overselling	9	***	***	***	***
India	Overselling	5	***	***	***	***
All subject sources	Overselling	14	***	***	***	***

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

Table E-8**2,4-D: Instances and quantities of lower/(higher) average unit purchase costs compared to U.S. prices and the range and average of price/cost differentials, by product**

Quantity in 1,000 pounds acid equivalent; Differentials in percent

Products	Type	Number of quarters	Quantity	Average differential	Min differential	Max differential
Product 4	Lower than US	---	***	***	***	***
Product 4	Higher than US	1	***	***	***	***

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

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

Table E-9

2,4-D: Instances and quantities of lower/(higher) average unit purchase costs compared to U.S. prices and the range and average of price/cost differentials, by source

Quantity in 1,000 pounds acid equivalent; Differentials in percent

Sources	Type	Number of quarters	Quantity	Average differential	Min differential	Max differential
China	Lower than US	---	***	***	***	***
India	Lower than US	---	***	***	***	***
All subject sources	Lower than US	---	***	***	***	***
China	Higher than US	1	***	***	***	***
India	Higher than US	---	***	***	***	***
All subject sources	Higher than US	1	***	***	***	***

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

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

APPENDIX F

FINANCIAL DATA ON U.S. PRODUCER CORTEVA AND U.S. CONVERTERS

Figure F-1
2,4-D: U.S. producers', including U.S. converters, share of total market net sales quantity in 2023,
by firm

* * * * *

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

Table F-1**2,4-D: U.S. producers', including U.S. converters, results of operations in the total market, by item and period**

Quantity in 1,000 pounds acid equivalent; value in 1,000 dollars; ratios in percent

Item	Measure	2021	2022	2023
Commercial sales	Quantity	***	***	***
Swap transactions	Quantity	***	***	***
Internal consumption	Quantity	***	***	***
Total net sales	Quantity	***	***	***
Commercial sales	Value	***	***	***
Swap transactions	Value	***	***	***
Internal consumption	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	***	***	***
Interest expense	Value	***	***	***
All other expenses	Value	***	***	***
All other income	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 F-1 Continued**2,4-D: U.S. producers', including U.S. converters, results of operations in the total market, by item and period**

Shares in percent; unit values in dollars per pound acid equivalent; count in number of firms reporting

Item	Measure	2021	2022	2023
COGS: Raw materials	Share	***	***	***
COGS: Direct labor	Share	***	***	***
COGS: Other factory	Share	***	***	***
COGS: Total	Share	***	***	***
Commercial sales	Unit value	***	***	***
Swap transactions	Unit value	***	***	***
Internal consumption	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	***	***	***

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

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

Table F-2**2,4-D: Changes in AUVs between comparison periods in the total market of U.S. producers, including U.S. converters**

Changes in percent

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

Table continued.

Table F-2 Continued**2,4-D: Changes in AUVs between comparison periods in the total market of U.S. producers, including U.S. converters**

Changes in dollars per pound acid equivalent

Item	2021-23	2021-22	2022-23
Commercial sales	▲ ***	▲ ***	▼ ***
Swap transactions	▲ ***	▲ ***	▼ ***
Internal consumption	▲ ***	▲ ***	▼ ***
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 F-3**2,4-D: U.S. producers', including U.S. converters, results of operations limited to commercial sales, by item and period**

Quantity in 1,000 pounds acid equivalent; value in 1,000 dollars; ratios in percent

Item	Measure	2021	2022	2023
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	***	***	***
Interest expense	Value	***	***	***
All other expenses	Value	***	***	***
All other income	Value	***	***	***
Net income or (loss)	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 F-3 Continued**2,4-D: U.S. producers', including U.S. converters, results of operations limited to commercial sales, by item and period**

Shares in percent; unit values in dollars per pound acid equivalent; count in number of firms reporting

Item	Measure	2021	2022	2023
COGS: Raw materials	Share	***	***	***
COGS: Direct labor	Share	***	***	***
COGS: Other factory	Share	***	***	***
COGS: Conversion costs (direct labor + other factory)	Share	***	***	***
COGS: Total	Share	***	***	***
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	***	***	***

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

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

Table F-4**2,4-D: Changes in AUVs between comparison periods limited to commerical sales of U.S. producers, including U.S. converters**

Changes in percent

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

Table continued.

Table F-4 Continued**2,4-D: Changes in AUVs between comparison periods limited to commerical sales of U.S. producers, including U.S. converters**

Changes in dollars per pound acid equivalent

Item	2021-23	2021-22	2022-23
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: Period changes preceded by a “▲” represent an increase, while period changes preceded by a “▼” represent a decrease.

Table F-5**2,4-D: U.S. producers', including U.S. converters, results of operations combining commercial sales and swap transactions, by item and period**

Quantity in 1,000 pounds acid equivalent; Value in 1,000 dollars; Ratios in percent

Item	Measure	2021	2022	2023
Commercial sales & swap transactions	Quantity	***	***	***
Commercial sales & swap transactions	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	***	***	***
Interest expense	Value	***	***	***
All other expenses	Value	***	***	***
All other income	Value	***	***	***
Net income or (loss)	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 F-5 Continued**2,4-D: U.S. producers', including U.S. converters, results of operations combining commercial sales and swap transactions, by item and period**

Shares in percent; Unit values in dollars per pound acid equivalent; Count in number of firms reporting

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

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

Table F-6**2,4-D: Changes in AUVs between comparison periods combined commercial sales and swap transactions**

Changes in percent

Item	2021-23	2021-22	2022-23
Commercial sales & swap transactions	▲ ***	▲ ***	▼ ***
COGS: Raw materials	▲ ***	▲ ***	▼ ***
COGS: Direct labor	▲ ***	▲ ***	▲ ***
COGS: Other factory	▲ ***	▲ ***	▼ ***
COGS: Total	▲ ***	▲ ***	▼ ***

Table continued.

Table F-6 Continued**2,4-D: Changes in AUVs between comparison periods combined commercial sales and swap transactions**

Changes in dollars per pound acid equivalent

Item	2021-23	2021-22	2022-23
Commercial sales & swap transactions	▲ ***	▲ ***	▼ ***
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 F-7

2,4-D: U.S. producers', including U.S. converters, sales, costs/expenses, and profitability in the total market, by firm and period

Net sales quantity

Quantity in 1,000 pounds acid equivalent

Firm	2021	2022	2023
Albaugh	***	***	***
Corteva	***	***	***
Drexel	***	***	***
Nufarm	***	***	***
PBI-Gordon	***	***	***
All firms	***	***	***

Table continued.

Table F-7 Continued

2,4-D: U.S. producers', including U.S. converters, sales, costs/expenses, and profitability in the total market, by firm and period

Net sales value

Value in 1,000 dollars

Firm	2021	2022	2023
Albaugh	***	***	***
Corteva	***	***	***
Drexel	***	***	***
Nufarm	***	***	***
PBI-Gordon	***	***	***
All firms	***	***	***

Table continued.

Table F-7 Continued

2,4-D: U.S. producers', including U.S. converters, sales, costs/expenses, and profitability in the total market, by firm and period

COGS

Value in 1,000 dollars

Firm	2021	2022	2023
Albaugh	***	***	***
Corteva	***	***	***
Drexel	***	***	***
Nufarm	***	***	***
PBI-Gordon	***	***	***
All firms	***	***	***

Table continued.

Table F-7 Continued

2,4-D: U.S. producers', including U.S. converters, sales, costs/expenses, and profitability in the total market, by firm and period

Gross profit or (loss)

Value in 1,000 dollars

Firm	2021	2022	2023
Albaugh	***	***	***
Corteva	***	***	***
Drexel	***	***	***
Nufarm	***	***	***
PBI-Gordon	***	***	***
All firms	***	***	***

Table continued.

Table F-7 Continued

2,4-D: U.S. producers', including U.S. converters, sales, costs/expenses, and profitability in the total market, by firm and period

SG&A expenses

Value in 1,000 dollars

Firm	2021	2022	2023
Albaugh	***	***	***
Corteva	***	***	***
Drexel	***	***	***
Nufarm	***	***	***
PBI-Gordon	***	***	***
All firms	***	***	***

Table continued.

Table F-7 Continued

2,4-D: U.S. producers', including U.S. converters, sales, costs/expenses, and profitability in the total market, by firm and period

Operating income or (loss)

Value in 1,000 dollars

Firm	2021	2022	2023
Albaugh	***	***	***
Corteva	***	***	***
Drexel	***	***	***
Nufarm	***	***	***
PBI-Gordon	***	***	***
All firms	***	***	***

Table continued.

Table F-7 Continued

2,4-D: U.S. producers', including U.S. converters, sales, costs/expenses, and profitability in the total market, by firm and period

Net income or (loss)

Value in 1,000 dollars

Firm	2021	2022	2023
Albaugh	***	***	***
Corteva	***	***	***
Drexel	***	***	***
Nufarm	***	***	***
PBI-Gordon	***	***	***
All firms	***	***	***

Table continued.

Table F-7 Continued

2,4-D: U.S. producers', including U.S. converters, sales, costs/expenses, and profitability in the total market, by firm and period

COGS to net sales ratio

Ratios in percent

Firm	2021	2022	2023
Albaugh	***	***	***
Corteva	***	***	***
Drexel	***	***	***
Nufarm	***	***	***
PBI-Gordon	***	***	***
All firms	***	***	***

Table continued.

Table F-7 Continued

2,4-D: U.S. producers', including U.S. converters, sales, costs/expenses, and profitability in the total market, by firm and period

Gross profit or (loss) to net sales ratio

Ratios in percent

Firm	2021	2022	2023
Albaugh	***	***	***
Corteva	***	***	***
Drexel	***	***	***
Nufarm	***	***	***
PBI-Gordon	***	***	***
All firms	***	***	***

Table continued.

Table F-7 Continued

2,4-D: U.S. producers', including U.S. converters, sales, costs/expenses, and profitability in the total market, by firm and period

SG&A expenses to net sales ratio

Ratios in percent

Firm	2021	2022	2023
Albaugh	***	***	***
Corteva	***	***	***
Drexel	***	***	***
Nufarm	***	***	***
PBI-Gordon	***	***	***
All firms	***	***	***

Table continued.

Table F-7 Continued

2,4-D: U.S. producers', including U.S. converters, sales, costs/expenses, and profitability in the total market, by firm and period

Operating income or (loss) to net sales ratio

Ratios in percent

Firm	2021	2022	2023
Albaugh	***	***	***
Corteva	***	***	***
Drexel	***	***	***
Nufarm	***	***	***
PBI-Gordon	***	***	***
All firms	***	***	***

Table continued.

Table F-7 Continued

2,4-D: U.S. producers', including U.S. converters, sales, costs/expenses, and profitability in the total market, by firm and period

Net income or (loss) to net sales ratio

Ratios in percent

Firm	2021	2022	2023
Albaugh	***	***	***
Corteva	***	***	***
Drexel	***	***	***
Nufarm	***	***	***
PBI-Gordon	***	***	***
All firms	***	***	***

Table continued.

Table F-7 Continued

2,4-D: U.S. producers', including U.S. converters, sales, costs/expenses, and profitability in the total market, by firm and period

Unit net sales value

Unit values in dollars per pound acid equivalent

Firm	2021	2022	2023
Albaugh	***	***	***
Corteva	***	***	***
Drexel	***	***	***
Nufarm	***	***	***
PBI-Gordon	***	***	***
All firms	***	***	***

Table continued.

Table F-7 Continued

2,4-D: U.S. producers', including U.S. converters, sales, costs/expenses, and profitability in the total market, by firm and period

Unit raw material costs

Unit values in dollars per pound acid equivalent

Firm	2021	2022	2023
Albaugh	***	***	***
Corteva	***	***	***
Drexel	***	***	***
Nufarm	***	***	***
PBI-Gordon	***	***	***
All firms	***	***	***

Table continued.

Table F-7 Continued

2,4-D: U.S. producers', including U.S. converters, sales, costs/expenses, and profitability in the total market, by firm and period

Unit direct labor costs

Unit values in dollars per pound acid equivalent

Firm	2021	2022	2023
Albaugh	***	***	***
Corteva	***	***	***
Drexel	***	***	***
Nufarm	***	***	***
PBI-Gordon	***	***	***
All firms	***	***	***

Table continued.

Table F-7 Continued

2,4-D: U.S. producers', including U.S. converters, sales, costs/expenses, and profitability in the total market, by firm and period

Unit other factory costs

Unit values in dollars per pound acid equivalent

Firm	2021	2022	2023
Albaugh	***	***	***
Corteva	***	***	***
Drexel	***	***	***
Nufarm	***	***	***
PBI-Gordon	***	***	***
All firms	***	***	***

Table continued.

Table F-7 Continued

2,4-D: U.S. producers', including U.S. converters, sales, costs/expenses, and profitability in the total market, by firm and period

Unit COGS

Unit values in dollars per pound acid equivalent

Firm	2021	2022	2023
Albaugh	***	***	***
Corteva	***	***	***
Drexel	***	***	***
Nufarm	***	***	***
PBI-Gordon	***	***	***
All firms	***	***	***

Table continued.

Table F-7 Continued

2,4-D: U.S. producers', including U.S. converters, sales, costs/expenses, and profitability in the total market, by firm and period

Unit gross profit or (loss)

Unit values in dollars per pound acid equivalent

Firm	2021	2022	2023
Albaugh	***	***	***
Corteva	***	***	***
Drexel	***	***	***
Nufarm	***	***	***
PBI-Gordon	***	***	***
All firms	***	***	***

Table continued.

Table F-7 Continued

2,4-D: U.S. producers', including U.S. converters, sales, costs/expenses, and profitability in the total market, by firm and period

Unit SG&A expenses

Unit values in dollars per pound acid equivalent

Firm	2021	2022	2023
Albaugh	***	***	***
Corteva	***	***	***
Drexel	***	***	***
Nufarm	***	***	***
PBI-Gordon	***	***	***
All firms	***	***	***

Table continued.

Table F-7 Continued

2,4-D: U.S. producers', including U.S. converters, sales, costs/expenses, and profitability in the total market, by firm and period

Unit operating income or (loss)

Unit values in dollars per pound acid equivalent

Firm	2021	2022	2023
Albaugh	***	***	***
Corteva	***	***	***
Drexel	***	***	***
Nufarm	***	***	***
PBI-Gordon	***	***	***
All firms	***	***	***

Table continued.

Table F-7 Continued

2,4-D: U.S. producers', including U.S. converters, sales, costs/expenses, and profitability in the total market, by firm and period

Unit net income or (loss)

Unit values in dollars per pound acid equivalent

Firm	2021	2022	2023
Albaugh	***	***	***
Corteva	***	***	***
Drexel	***	***	***
Nufarm	***	***	***
PBI-Gordon	***	***	***
All firms	***	***	***

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

Note: Shares represent the share of COGS. Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent.

Table F-8
2,4-D: U.S. converters' raw material costs in 2023

Value in 1,000 dollars; unit values in dollars per pound acid equivalent; share of value in percent

Item	Value	Unit value	Share of value
2,4 D acid – domestically produced	***	***	***
2,4 D acid – purchased/ imported from subject	***	***	***
2,4 D acid – purchased/ imported from nonsubject	***	***	***
Other material inputs	***	***	***
All raw material inputs	***	***	***

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

Table F-9
2,4-D: U.S. producers', including U.S. converters, capital expenditures, by firm and period

Value in 1,000 dollars

Firm	2021	2022	2023
Albaugh	***	***	***
Corteva	***	***	***
Drexel	***	***	***
Nufarm	***	***	***
PBI-Gordon	***	***	***
All firms	***	***	***

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

Table F-10
2,4-D: U.S. producers', including U.S. converters, narrative descriptions of their capital expenditures, by firm

Firm	Narrative on capital expenditures
Albaugh	***
Corteva	***
Drexel	***
Nufarm	***
PBI-Gordon	***

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

Table F-11
2,4-D: U.S. producers', including U.S. converters, R&D expenses, by firm and period

Value in 1,000 dollars

Firm	2021	2022	2023
Albaugh	***	***	***
Corteva	***	***	***
Drexel	***	***	***
Nufarm	***	***	***
PBI-Gordon	***	***	***
All firms	***	***	***

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

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

Table F-12
2,4-D: U.S. producers', including U.S. converters, narrative descriptions of their R&D expenses, by firm

Firm	Narrative on R&D expenses
Albaugh	***
Corteva	***
Drexel	***
Nufarm	***
PBI-Gordon	***

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

Table F-13**2,4-D: U.S. producers', including U.S. converters, total net assets, by firm and period**

Value in 1,000 dollars

Firm	2021	2022	2023
Albaugh	***	***	***
Corteva	***	***	***
Drexel	***	***	***
Nufarm	***	***	***
PBI-Gordon	***	***	***
All firms	***	***	***

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

Table F-14**2,4-D: U.S. producers', including U.S. converters, ROA, by firm and period**

Ratio in percent

Firm	2021	2022	2023
Albaugh	***	***	***
Corteva	***	***	***
Drexel	***	***	***
Nufarm	***	***	***
PBI-Gordon	***	***	***
All firms	***	***	***

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

Table F-15**2,4-D: U.S. producers', including U.S. converters, narrative descriptions of their net assets, by firm**

Firm	Narrative on assets
Albaugh	***
Corteva	***
Drexel	***
Nufarm	***
PBI-Gordon	***

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

Table F-16

2,4-D: Count of firms indicating actual and anticipated negative effects of imports from subject sources on investment, growth, and development since January 1, 2021, by effect

Number of firms reporting

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

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

Table F-17

2,4-D: U.S. producers', including U.S. converters, narratives relating to actual and anticipated negative effects of imports on investment, growth, and development, since January 1, 2021, by firm and effect

Item	Firm name and narrative on impact of imports
Cancellation, postponement, or rejection of expansion projects	***
Reduction in the size of capital investments	***
Other effects on growth and development	***
Anticipated effects of imports	***
Anticipated effects of imports	***

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

