

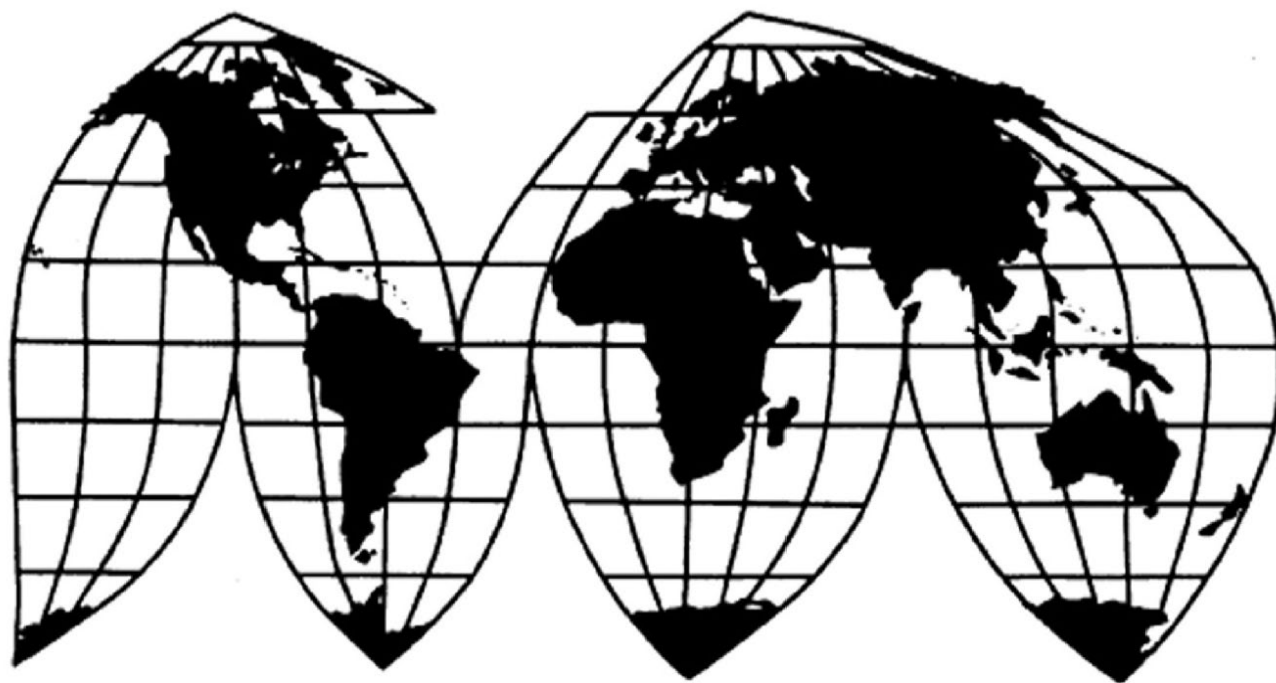
2,4-Dichlorophenoxyacetic Acid ("2,4-D") from China and India

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

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U.S. International Trade Commission



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CONTENTS

	Page
Determinations	1
Views of the Commission.....	3
Part 1: Introduction	1.1
Background.....	1.1
Statutory criteria	1.2
Organization of report.....	1.3
Market summary	1.4
Summary data and data sources.....	1.5
Previous and related investigations	1.6
Nature and extent of subsidies and sales at LTFV	1.7
Subsidies	1.7
Sales at LTFV	1.8
The subject merchandise	1.9
Commerce's scope	1.9
Tariff treatment.....	1.10
The product	1.11
Description and applications.....	1.11
Manufacturing processes	1.14
Domestic like product issues.....	1.16

CONTENTS

	Page
Part 2: Conditions of competition in the U.S. market.....	2.1
U.S. market characteristics.....	2.1
U.S. purchasers.....	2.2
Impact of section 301 tariffs	2.2
Channels of distribution	2.3
Geographic distribution	2.4
Supply and demand considerations.....	2.4
U.S. supply	2.4
U.S. demand	2.11
Substitutability issues.....	2.13
Purchase factor comparisons of domestic products, subject imports, and nonsubject imports	2.18
Comparison of U.S.-produced and imported 2,4-D	2.22
Elasticity estimates.....	2.25
U.S. supply elasticity.....	2.25
U.S. demand elasticity	2.25
Substitution elasticity	2.26

CONTENTS

	Page
Part 3: U.S. producers' production, shipments, and employment	3.1
U.S. producers	3.1
U.S. production, capacity, and capacity utilization	3.4
Alternative products	3.8
U.S. producers' U.S. shipments and exports	3.9
Captive consumption	3.14
Transfers and sales	3.15
First statutory criterion in captive consumption	3.16
Second statutory criterion in captive consumption	3.16
U.S. producer inventories	3.17
U.S. producers' imports from subject sources	3.18
U.S. producers' purchases of imports from subject sources	3.18
U.S. employment, wages, and productivity	3.19
Part 4: U.S. imports, apparent U.S. consumption, and market shares	4.1
U.S. importers	4.1
U.S. imports	4.2
Negligibility	4.7
Cumulation considerations	4.8
Fungibility	4.8
Geographical markets	4.11
Presence in the market	4.13
Apparent U.S. consumption and market shares	4.16
Quantity	4.16
Value	4.21

CONTENTS

	Page
Part 5: Pricing data	5.1
Factors affecting prices	5.1
Raw material costs	5.1
Transportation costs to the U.S. market	5.1
U.S. inland transportation costs	5.1
Pricing practices	5.2
Pricing methods	5.2
Sales terms and discounts	5.3
Price leadership	5.3
Price and purchase cost data	5.4
Price data	5.4
Import purchase cost data	5.11
Price and purchase cost trends	5.14
Price and purchase cost comparisons	5.18
Lost sales and lost revenue	5.22
Part 6: Financial experience of U.S. producers	6.1
Background	6.1
Operations on 2,4-D	6.2
Net sales	6.9
Cost of goods sold and gross profit or loss	6.10
SG&A expenses and operating income or loss	6.12
All other expenses and net income or loss	6.13
Variance analysis	6.14
Capital expenditures, R&D expenses, assets, and ROA	6.15
Capital and investment	6.16

CONTENTS

	Page
Part 7: Threat considerations and information on nonsubject countries	7.1
Subject countries	7.3
Changes in operations	7.5
Installed and practical overall capacity	7.6
Constraints on capacity	7.7
Operations on 2,4-D	7.8
Alternative products.....	7.19
Exports	7.20
U.S. inventories of imported merchandise	7.22
U.S. importers' outstanding orders.....	7.25
Third-country trade actions	7.26
Information on nonsubject countries	7.26
Appendixes	
A. Federal Register notices	A.1
B. List of hearing witnesses	B.1
C. Summary data	C.1
D. Trade data including U.S. converters	D.1
E. Downstream formulated product shipment data.....	E.1
F. Alternative financial results of Corteva.....	F.1
G. Financial experience including U.S. converters.....	G.1

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

UNITED STATES INTERNATIONAL TRADE COMMISSION

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

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 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 have been found by the U.S. Department of Commerce (“Commerce”) to be sold in the United States at less than fair value (“LTFV”) and subsidized by the governments of China and India.²

BACKGROUND

The Commission instituted these investigations effective March 14, 2024, following receipt of petitions filed with the Commission and Commerce by Corteva Agriscience LLC (Indianapolis, Indiana). The final phase of the investigations was scheduled by the Commission following notification of preliminary determinations by Commerce that imports of 2,4-D from China and India were subsidized within the meaning of section 703(b) of the Act (19 U.S.C. 1671b(b)) and sold at LTFV within the meaning of 733(b) of the Act (19 U.S.C. 1673b(b)). Notice of the scheduling of the final phase of the Commission’s investigations and of a public hearing to be held in connection therewith was given by posting copies of the notice in the Office of the Secretary, U.S. International Trade Commission, Washington, DC, and by publishing the notice in the *Federal Register* on November 26, 2024 (89 FR 93339). The Commission conducted its hearing on April 1, 2025. All persons who requested the opportunity were permitted to participate.

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

² 90 FR 14957, 14961, 14964, and 14969 (April 7, 2025).

Views of the Commission

Based on the record in the final phase of these investigations, we determine that an industry in the United States is materially injured by reason of imports of 2,4-dichlorophenoxyacetic acid (“2,4-D”) from China and India found by the U.S. Department of Commerce (“Commerce”) to be sold in the United States at less than fair value (“LTFV”) and subsidized by the governments of China and India.

I. Background

The petitions in these investigations were filed on March 14, 2024, by Corteva Agriscience LLC (“Corteva” or “Petitioner”), a U.S. producer of 2,4-D in acid, salt, and ester forms.¹ Petitioner appeared at the hearing accompanied by counsel and submitted a prehearing brief, posthearing brief, and final comments.²

Several respondent entities participated in the final phase of these investigations. Drexel Chemical Company (“Drexel”), Nufarm Americas Inc. (“Nufarm”), and PBI-Gordon Co. (“PBI-Gordon”), U.S. importers of subject merchandise and U.S. producers of in-scope 2,4-D esters and/or salts (collectively, “Converters”), appeared at the hearing accompanied by counsel and submitted prehearing and posthearing briefs and final comments.³ The American Soybean Association (“ASA”) and National Corn Growers Association (“NCGA”), which represent soybean and corn growers in the United States that purchase out-of-scope herbicide formulations composed in part of in-scope 2,4-D (collectively, “Growers”), appeared at the hearing accompanied by counsel and submitted joint prehearing and posthearing briefs.⁴

¹ Petition, EDIS Doc. 816165-2138134 (Mar. 14, 2024).

² Corteva Prehearing Br., EDIS Doc. 846964 (Mar. 26, 2025); Corteva Posthearing Br., EDIS Doc. 848166 (Apr. 8, 2025); Corteva Final Cmts., EDIS Doc. 849741 (Apr. 25, 2025).

³ Drexel and Nufarm appeared at the hearing accompanied by counsel, filed a joint prehearing brief, followed by separate posthearing briefs and final comments. *See* Drexel & Nufarm Prehearing Br., EDIS Doc. 846976 (Mar. 26, 2025); Drexel Posthearing Br., EDIS Doc. 848161 (Apr. 8, 2025); Drexel Final Cmts., EDIS Doc. 849690 (Apr. 25, 2025); Nufarm Posthearing Br., EDIS Doc. 848172 (Apr. 8, 2025); Nufarm Final Cmts., EDIS Doc. 849734 (Apr. 25, 2025). *See also* PBI-Gordon Prehearing Br., EDIS Doc. 846942 (Mar. 26, 2025); PBI-Gordon Posthearing Br., EDIS Doc. 848146 (Apr. 8, 2025); PBI-Gordon Final Cmts., EDIS Doc. 849713 (Apr. 25, 2025).

Drexel and Nufarm produce both 2,4-D esters and salts, while PBI-Gordon only produces 2,4-D salts. Confidential Report, INV-XX-046 (Apr. 17, 2025) (“CR”) at 3.1 n.2; *2,4-Dichlorophenoxyacetic Acid (“2,4-D”) from China and India*, Inv. Nos. 701-TA-710-711 and 731-TA-1673-1674 (Final), USITC Pub. 5618 (May 2025) (“PR”) at 3.1 n.2.

⁴ ASA & NCGA Prehearing Br., EDIS Doc. 846935 (Mar. 26, 2025); ASA & NCGA Posthearing Br., EDIS Doc. 848078 (Apr. 8, 2025).

U.S. industry data are based on the questionnaire response from one firm, Corteva, that accounted for all known U.S. production of 2,4-D acid in 2023.⁵ Additionally, four firms that convert 2,4-D acid into 2,4-D esters and/or salts also submitted U.S. producer questionnaire responses.⁶ U.S. import data are based on the questionnaire responses from ten U.S. importers, accounting for *** percent of U.S. imports from subject sources, and *** percent of U.S. imports from nonsubject sources in 2023.⁷ The Commission received responses to its questionnaires from seven foreign producers and/or exporters of subject merchandise: one producer/exporter from China, accounting for approximately *** percent of production of subject merchandise in China in 2023, and two exporters/resellers in China; and three producers/exporters from India, accounting for approximately *** percent of production of subject merchandise in India in 2023, and one exporter/reseller in India.⁸

II. Domestic Like Product

A. In General

In determining whether an industry in the United States is materially injured or threatened with material injury by reason of imports of subject merchandise, the Commission first defines the “domestic like product” and the “industry.”⁹ 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.”¹⁰ In turn, the Tariff Act defines “domestic like product” as “a product which is like, or in the absence of like, most similar in characteristics and uses with, the article subject to an investigation.”¹¹

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.¹²

⁵ CR/PR at 1.4, 3.1.

⁶ CR/PR at 1.4, 3.1.

⁷ CR/PR at 4.1.

⁸ CR/PR at 7.3.

⁹ 19 U.S.C. § 1677(4)(A).

¹⁰ 19 U.S.C. § 1677(4)(A).

¹¹ 19 U.S.C. § 1677(10).

¹² 19 U.S.C. § 1677(10). The Commission must accept Commerce’s determination as to the scope of the imported merchandise that is subsidized and/or sold at less than fair value. *See, e.g., USEC, Inc. v. United States*, 34 Fed. App’x 725, 730 (Fed. Cir. 2002) (“The ITC may not modify the class or kind of imported merchandise examined by Commerce.”); *Algoma Steel Corp. v. United States*, 688 F. Supp. 639, 644 (Ct. Int’l Trade 1988), *aff’d*, 865 F.3d 240 (Fed. Cir.), *cert. denied*, 492 U.S. 919 (1989).

Therefore, Commerce's determination as to the scope of the imported merchandise that is subsidized and/or sold at less than fair value is "necessarily the starting point of the Commission's like product analysis."¹³ The Commission then defines the domestic like product in light of the imported articles Commerce has identified.¹⁴ 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.¹⁵ ¹⁶ No single factor is dispositive, and the Commission may consider other factors it deems relevant based on the facts of a particular investigation.¹⁷ The

¹³ *Cleo Inc. v. United States*, 501 F.3d 1291, 1298 (Fed. Cir. 2007); *see also Hitachi Metals, Ltd. v. United States*, 949 F.3d 710, 717 (Fed. Cir. 2020) (the statute requires the Commission to start with Commerce's subject merchandise in reaching its own like product determination).

¹⁴ *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).

¹⁵ *See, e.g., Cleo Inc. v. United States*, 501 F.3d 1291, 1299 (Fed. Cir. 2007); *NEC Corp. v. Department of Commerce*, 36 F. Supp. 2d 380, 383 (Ct. Int'l Trade 1998); *Nippon Steel Corp. v. United States*, 19 CIT 450, 455 (1995); *Torrington Co. v. United States*, 747 F. Supp. 744, 749 n.3 (Ct. Int'l Trade 1990), *aff'd*, 938 F.2d 1278 (Fed. Cir. 1991) ("every like product determination 'must be made on the particular record at issue' and the 'unique facts of each case'"). The Commission generally considers a number of factors, including the following: (1) physical characteristics and uses; (2) interchangeability; (3) channels of distribution; (4) customer and producer perceptions of the products; (5) common manufacturing facilities, production processes, and production employees; and, where appropriate, (6) price. *See Nippon*, 19 CIT at 455 n.4; *Timken Co. v. United States*, 913 F. Supp. 580, 584 (Ct. Int'l Trade 1996).

¹⁶ In a semi-finished 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., Glycine from India, Japan, and Korea*, Inv. Nos. 731-TA-1111-1113 (Preliminary), USITC Pub. No. 3921 at 7 (May 2007); *Artists' Canvas from China*, Inv. No. 731-TA-1091 (Final), USITC Pub. No. 3853 at 6 (May 2006); *Live Swine from Canada*, Inv. No. 731-TA-1076 (Final), USITC Pub. 3766 at 8 n.40 (Apr. 2005); *Certain Frozen Fish Fillets from Vietnam*, Inv. No. 731-TA-1012 (Preliminary), USITC Pub. No. 3533 at 7 (Aug. 2002).

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

Commission looks for clear dividing lines among possible like products and disregards minor variations.¹⁸

B. Product Description

Commerce defined the scope of 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-D isopropylamine salt (CAS 5742-17-6), 2,4-D tri-isopropanolamine salt (CAS 32341-80-3), 2,4-D choline salt (CAS 1048373-72-3), 2,4-D butoxyethyl ester (CAS 1929-73-3), 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.

¹⁸ *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.”).

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.^{19 20}

2,4-D is an active ingredient in herbicides that are applied to eliminate broadleaf weeds, but not grasses.²¹ In terms of the mechanism of action of the herbicide, 2,4-D is a synthetic auxin and growth regulator.²² 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.²³ 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.²⁴ 2,4-D is registered for use on pastures and rangelands, residential lawns, roadways, aquatic sites, croplands, and forestry applications.²⁵

2,4-D is produced in two steps. 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.²⁶ Second, 2,4-D acid is converted into a derivative form.²⁷ There are currently nine derivative forms of 2,4-D on the U.S. market, with two in-scope 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.²⁸

¹⁹ *2,4-Dichlorophenoxyacetic Acid From the People's Republic of China: Final Affirmative Countervailing Duty Determination*, 90 Fed. Reg. 14,957, 14,959 (Apr. 7, 2025); *2,4-Dichlorophenoxyacetic Acid From India: Final Affirmative Countervailing Duty Determination*, 90 Fed. Reg. 14,961, 14,962-14,963 (Apr. 7, 2025); *2,4-Dichlorophenoxyacetic Acid From the People's Republic of China: Final Affirmative Determination of Sales at Less Than Fair Value*, 90 Fed. Reg. 14,964, 14,966 (Apr. 7, 2025); *2,4-Dichlorophenoxyacetic Acid From India: Final Affirmative Determination of Sales at Less Than Fair Value*, 90 Fed. Reg. 14,969, 14,971 (Apr. 7, 2025). The scope in the countervailing duty investigations is identical to the scope in the antidumping investigations.

²⁰ The scope in these investigations was changed after the filing of the petitions to clarify that 2,4-D esters and 2,4-D salts 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, 34,205 (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, 34,209 (Apr. 30, 2024).

²¹ CR/PR at 1.11.

²² CR/PR at 1.12. A synthetic auxin is a type of herbicide active ingredient that mimics auxin, a plant hormone that regulates many aspects of growth. *Id.*

²³ CR/PR at 1.12.

²⁴ CR/PR at 1.12.

²⁵ CR/PR at 1.11.

²⁶ CR/PR at 1.14.

²⁷ CR/PR at 1.14-1.15. Esters and salts are intermediate products that are further processed into formulations and end-use herbicides. *Id.* at 1.12.

²⁸ CR/PR at 1.15.

The resulting 2,4-D derivatives are then blended with other active ingredients, chemicals, and/or water to create end-use crop protection products/formulations.²⁹ More than 1,500 herbicide products contain 2,4-D as an active ingredient and come in the form of liquids, dusts, or granules.³⁰

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 the esters.³¹ Accordingly, 2,4-D ester derivatives are typically more active on weeds, as plants are more likely to absorb them, whereas 2,4-D salt derivatives are typically used in landscape settings and scenarios when drift is a primary concern.³² A purchaser's selection between 2,4-D esters and salts is thus based on the desired end-use application.³³

C. Arguments of the Parties

Petitioner's Arguments. Petitioner argues that the Commission should define a single domestic like product consisting of 2,4-D, coextensive with the scope of these investigations.³⁴ It employs the Commission's traditional like product analysis to contend that all types of 2,4-D within the scope have the same physical characteristics and end uses; channels of distribution; manufacturing facilities, production processes, and production employees; and pricing mechanisms. It also claims that all types of 2,4-D are viewed by customers and producers as a common class of product, and are interchangeable with 2,4-D produced elsewhere, including subject merchandise from China and India.³⁵

Respondents' Arguments. Converters do not contest the domestic like product definition advocated by Petitioner.³⁶ They employ the Commission's semi-finished like product analysis to contend that, on balance, there is a single market for all 2,4-D within the scope. In their view, most upstream 2,4-D acid is dedicated for use in the production of derivative 2,4-D esters and salts, and all 2,4-D within the scope is sold into the same market and shares the same essential physical characteristics and functions. They contend that, although the conversion process adds significant value to 2,4-D acid and converters' operations are capital-

²⁹ CR/PR at 1.12.

³⁰ CR/PR at 1.12.

³¹ CR/PR at 1.15.

³² CR/PR at 1.15.

³³ CR/PR at 1.14.

³⁴ Petition at 12; Corteva Prehearing Br. at 4.

³⁵ Petition at 12-16; Corteva Prehearing Br. at 4-7.

³⁶ Drexel & Nufarm Prehearing Br. at 4; PBI-Gordon Prehearing Br. at 3.

intensive, the conversion process itself does not change the essential physical characteristics of derivative 2,4-D products, which remain synthetic auxins.³⁷

D. Analysis

We consider below whether upstream 2,4-D acid and the downstream esters and salts included in the scope belong within a single domestic like product. As this question concerns articles at different stages of processing, we analyze the issue using the semifinished product factors. Based on the record of the final phase of these investigations, we find that 2,4-D acid, esters, and salts belong in a single domestic like product.³⁸

Dedication for Use. Petitioner and Converters agree that virtually all 2,4-D acid must be converted into a derivative ester or salt form before being formulated into an end-use herbicide.³⁹ This aligns with information on the record indicating that in-scope 2,4-D esters and salts account for approximately 90 to 95 percent of global 2,4-D acid use.⁴⁰

Separate Markets. Petitioner and Converters agree that all 2,4-D acid, esters, and salts are internally consumed or sold to third-party formulators to produce end-use herbicides, and that consumers and producers perceive 2,4-D in all forms as a common class of products.⁴¹

Differences in Physical Characteristics and Functions of the Upstream and Downstream Articles. Petitioner and Converters agree that 2,4-D in all forms shares the same physical characteristics, as a synthetic auxin that causes uncontrolled growth in vascular tissue cells and ultimately leads to the death of unwanted foliage.⁴² This aligns with information on the record indicating that 2,4-D acid in all forms are active ingredients that require additional processing before being used as end-use herbicides.⁴³

Differences in Value. According to Petitioner, prices for 2,4-D are stated on a dry, 2,4-D acid weight equivalent (“DWAE”) basis, which establishes a common method for pricing 2,4-D

³⁷ Drexel & Nufarm Prehearing Br. at 5-8; PBI-Gordon Prehearing Br. at 4-7.

³⁸ The Commission received comments on the draft questionnaires for the final phase of these investigations from Petitioner, Drexel, and PBI-Gordon. None of these parties advocated defining the domestic like product differently from the scope of investigation, or requested that the Commission collect data separately for alternate domestic like product definitions. CR/PR at 1.16. Accordingly, staff did not collect responses from questionnaire respondents concerning the semifinished factors.

³⁹ Corteva Prehearing Br. at 5; Drexel & Nufarm Prehearing Br. at 6-7; PBI-Gordon Prehearing Br. at 5.

⁴⁰ CR/PR at 1.12, 1.15.

⁴¹ Corteva Prehearing Br. at 5; Drexel & Nufarm Prehearing Br. at 7; PBI-Gordon’s Prehearing Br. at 5-6.

⁴² Corteva Prehearing Br. at 5; Drexel & Nufarm Prehearing Br. at 7; PBI Gordon’s Prehearing Br. at 5. References to pounds in these investigations are measured on a DWAE basis. CR/PR at 3.4 n.4.

⁴³ CR/PR at 1.12.

acid in all forms.⁴⁴ Converters submit that the conversion of 2,4-D acid into esters or salts adds significant value to these products.⁴⁵ Information on the record indicates that the value-added by converting 2,4-D acid into 2,4-D esters or salts ranged from *** to *** percent.⁴⁶ During the POI, prices for 2,4-D acid overlapped with prices for 2,4-D esters, as U.S. producer sales prices of pricing product 1 (2,4-D acid) ranged from \$*** to \$*** per pound DWAE, while U.S. producer sales prices of pricing product 4 (2,4-D ester) ranged from \$*** to \$*** per pound DWAE.⁴⁷

Extent of Processes Used to Transform Upstream Product into Downstream Product. Petitioner contends that conversion requires less capital investment and technical expertise than production operations for its integrated 2-4-D production facilities.⁴⁸ According to Converters, esterification, synthesis, and amination operations require the use of specialized machinery and equipment, highly skilled workers, and significant capital investment.⁴⁹

Information on the record indicates that Petitioner and Converters use specialized machinery and workers to convert 2,4-D acid into esters and salts. These activities generally occur in manufacturing facilities that also house other manufacturing/processing activities, including those used in connection with the formulation and packaging of end-use herbicides.⁵⁰

Conclusion. We define a single domestic like product, comprising all forms of 2,4-D covered by the scope of these investigations. Most 2,4-D acid is dedicated to the production of 2,4-D esters and salts, all three forms of 2,4-D are sold into the same market, and all forms of 2,4-D share the same essential physical characteristics and functions. While additional processing is required to transform 2,4-D acid into 2,4-D esters and salts, as reflected by the relatively higher value of 2,4-D esters and salts, the estimated valued added by converting acid into esters and salts ranges from *** percent. Some value addition is to be expected for any downstream process, and we do not find the difference in value so significant as to warrant a

⁴⁴ Corteva Prehearing Br. at 6.

⁴⁵ Drexel estimates that 2,4-D ester is *** percent more valuable than 2,4-D acid, whereas 2,4-D salt is *** percent more valuable, and Nufarm estimates that 2,4-D ester is *** percent more valuable than 2,4-D acid. Drexel & Nufarm Prehearing Br. at 7-8. PBI-Gordon's discussion of this factor in its prehearing brief cites to staff's value-added calculations in Table D.6 of the prehearing staff report. PBI-Gordon Prehearing Br. However, it estimates elsewhere that formulated end-use products are *** percent more valuable than 2,4-D acid. *Id.* at 6, 12.

⁴⁶ CR/PR at Table D.6.

⁴⁷ CR/PR at Tables 5.3, 5.5. The range specified for pricing product 1 does not include an anomalous \$*** sales transaction reported in the fourth quarter of 2023. *Id.* at Table 5.3 Note.

⁴⁸ Corteva Prehearing Br. at 10-13.

⁴⁹ Drexel & Nufarm Prehearing Br. at 8; PBI-Gordon Prehearing Br. at 4-5, 8-11.

⁵⁰ CR/PR at Tables D.4-D.5.

separate like product. On balance, and in the absence of any contrary argument, we thus find that all forms of 2,4-D covered by the scope belong in a single domestic like product.

III. Domestic Industry

The domestic industry is defined as the domestic “producers as a whole of a domestic like product, or those producers whose collective output of a domestic like product constitutes a major proportion of the total domestic production of the product.”⁵¹ In defining the domestic industry, the Commission’s general practice has been to include in the industry producers of all domestic production of the like product, whether toll-produced, captively consumed, or sold in the domestic merchant market.

These investigations raise two sets of domestic industry issues. The first concerns whether the production-related activities of converters are sufficient to constitute domestic production. The second concerns whether appropriate circumstances exist to exclude any domestic producer 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 activities, although production-related activity at minimum levels could be insufficient to constitute domestic production.⁵²

1. Arguments of the Parties

Petitioner’s Arguments. Petitioner contends that converters do not engage in sufficient production-related activities to qualify as domestic producers. Addressing the Commission’s sufficient production-related activities factors, it argues that the capital investment and technical expertise required to operate its integrated facilities are significantly greater than what is required for stand-alone conversion facilities, and that 2,4-D acid constitutes most of the value of 2,4-D esters and salts. Petitioner also contends that it does not import any 2,4-D acid for use in its production of 2,4-D esters and salts, whereas Converters source virtually all of

⁵¹ 19 U.S.C. § 1677(4)(A).

⁵² 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).

their 2,4-D acid from abroad. Petitioner urges the Commission to put particular weight on Converters' foreign sourcing of 2,4-D acid, as that is the active ingredient in formulated herbicides and the most volatile to handle, and less weight on the other chemical components that Converters may source from the United States.

It also claims that the employment levels at its integrated facilities exceed those at facilities dedicated to the conversion of 2,4-D acid into esters and salts. Petitioner contends that the actual difference in employment levels is greater than the data on the record would indicate, as Corteva states that it underreported employment in 2,4-D acid production as its figures did not include employees at its Freeport, Texas, facility who manufacture dichlorophenol ("DCP"), an intermediate product solely devoted to 2,4-D acid production. It contends that Converters' employment levels appear to be overstated, as they produce out-of-scope formulations and active ingredients using the same workforce.⁵³ Corteva also argues that 2,4-D acid production requires significant additional costs not incurred by Converters, namely U.S. Environmental Protection Agency ("EPA") registration and related research and development ("R&D") expenditures.⁵⁴

In Petitioner's view, the Commission's preliminary determination correctly evaluated the sufficiency of the Converters' production-related activities by comparing them with Corteva's production-related activities. Petitioner argues that the Commission should compare each converter individually with Corteva, rather than considering them collectively. Petitioner also argues that the values reported by converters for their employment levels, capital investment, and value added are overstated, likely reflecting the production of merchandise other than 2,4-D derivative esters and salts.⁵⁵

Respondents' Arguments. Converters argue that conversion operations require significant upfront and ongoing levels of capital investment, highly skilled workers, and specialized machinery and equipment. They contend that converters add significant value and employ more production-related workers ("PRWs") than Petitioner. With respect to sourcing of raw materials, they claim that they obtain large quantities of inputs from U.S. sources, and that

⁵³ Corteva Posthearing Br., Exh. 1 at 10-13. Petitioner also appends, at Exhs. 24-26, printouts of several herbicide products produced by Nufarm that it alleges are produced in Nufarm's 2,4-D production facilities. Staff subsequently collected and incorporated information concerning Petitioner's DCP production facility into the confidential report. See CR/PR at Tables 3.13-3.15. A witness for Corteva testified at the hearing that Corteva's production operations are highly automated, which complicates "side by side" comparisons with converters' employment data. See Hearing Transcript ("Tr.") at 96 (Brown).

⁵⁴ Corteva Prehearing Br. at 10-15.

⁵⁵ Corteva Posthearing Br., Exh. 1, Responses to the Commission's Questions, at 7-13.

they imported 2,4-D acid during the POI because it was not available for purchase from Petitioner. They also argue that converters incur costs relating to EPA registration and data requirements.⁵⁶ In addition, Nufarm reported other costs as part of its broader 2,4-D formulation operations, which include maintaining a distribution center, bulk storage tanks, and fleets of tanker trucks and railcars.⁵⁷

Drexel disputes Petitioner's allegation that converters have overstated the extent of their production-related activities by including activities related to out-of-scope products. It submits that the production-related activities that it reported pertain only to facilities and machinery used in the production of 2,4-D salts and esters.⁵⁸

Converters contend that the Commission erred in its preliminary determination by concluding that processors' conversion operations did not qualify as domestic production as they were on a smaller scale than Corteva's integrated 2,4-D production operations. They argue that the Commission's practice with respect to evaluating whether the activities of processors are sufficient to qualify them as domestic producers is to evaluate whether their activities are sufficient on their own to qualify for inclusion in the domestic industry definition. For support, they cite the U.S. Court of International Trade's ("CIT") ruling in *Chemours Company FC, LLC v. United States*.⁵⁹ They argue that it may be useful for the Commission to conduct such an evaluation by comparing integrated U.S. producers' activities with those of U.S. processors collectively, rather than individually.⁶⁰

2. Analysis

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

⁵⁶ Drexel & Nufarm Prehearing Br. at 9-15; PBI-Gordon Prehearing Br. at 8-15; Drexel Posthearing Br. at 5-6, Exh. 1 at 5-9; Nufarm Posthearing Br., Exh. 1 at 2-3, 9; PBI-Gordon Posthearing Br., Exh. 1 at 22. PBI-Gordon argues that the EPA registration costs incurred by converters are similar to the costs incurred by Corteva. PBI-Gordon Posthearing Br., Exh. 1 at 22-23.

⁵⁷ Drexel & Nufarm Prehearing Br. at 15-16; Nufarm Posthearing Br., Exh. 1 at 4.

⁵⁸ Drexel Posthearing Br., Exh. 1 at 10.

⁵⁹ See Drexel Posthearing Br. at 4-5, Exh. 1, Responses to the Commission's Questions, at 1, citing *Chemours Company FC, LLC v. United States*, 443 F. Supp. 3d 1315 (Ct. Int'l Trade 2020) ("*Chemours*"). See also Nufarm Posthearing Br., Exh. 1 at 1-4.

⁶⁰ See Nufarm Posthearing Br., Exh. 1 at 1-2 (citing *Quartz Surface Products from India and Turkey*, Inv. No. 701-TA-624 – 625 and 731-TA-1450 – 1451 (Final), USITC Pub. 5061 at 10-11 (Jun. 2020); *Thermal Paper from Germany, Japan, Korea, and Spain*, Inv. No. 731-TA-1546 – 1549 (Final), USITC Pub. 5237 at 23-24 (Nov. 2021)). See also Drexel Posthearing Br., Exh. 1 at 1.

Source and Extent of Firms' Capital Investment. Albaugh reported between \$*** and \$*** in assets, with \$*** in capital expenditures, and estimated greenfield investment costs for replicating its current facility of \$***.⁶¹ Drexel reported \$*** in assets, *** capital expenditures, and estimated greenfield replacement costs for replicating its current facility of \$***.⁶² Nufarm reported between \$*** and \$*** in capital expenditures, between \$*** and \$*** in assets, and estimated greenfield replacement costs for replicating its current facility between \$*** and \$***.⁶³ PBI-Gordon reported between \$*** and \$*** in capital expenditures, with \$*** and \$*** in assets, and estimated greenfield replacement costs for replicating its current facility of \$***.⁶⁴ By comparison, Corteva, an integrated producer, reported between \$*** and \$*** in assets, with between \$*** and \$*** in capital expenditures, and estimated greenfield replacement costs for replicating its current facility of \$***.⁶⁵

Technical Expertise. Albaugh reported expenditures between \$*** and \$*** on R&D during the POI, while Drexel, Nufarm, and PBI-Gordon reported *** R&D expenditures during this period.⁶⁶ Albaugh, Drexel, and Nufarm rated the complexity, intensity, and importance of their esterification and/or amination operations as a *** on a scale of 1 to 5, with 5 being most complex, intense, and important, while PBI-Gordon rated the complexity, intensity, and importance of its synthesis operations as a ***.⁶⁷ Corteva reported *** R&D expenditures during the POI and rated the complexity, intensity, and importance of its manufacturing activities as a ***.⁶⁸

Value Added. As calculated by the aggregate annual total conversion costs (including direct labor and other factory costs) divided by total cost of goods sold ("COGS"), the value added annually during the POI was *** percent for Albaugh, *** percent for Drexel, ***

⁶¹ CR/PR at Table D.6.

⁶² CR/PR at Table D.6. Drexel *** report *** annual capital expenditures. *Id.*

⁶³ CR/PR at Table D.6. Nufarm also reports spending \$***. *Id.* at Table D.5.

⁶⁴ CR/PR at Table D.6. PBI-Gordon also reports obtaining 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. BPI-Gordon Prehearing Br. at 8-9.

⁶⁵ CR/PR at Table D.6.

⁶⁶ CR/PR at Table D.6.

⁶⁷ CR/PR at Table D.7.

⁶⁸ CR/PR at Table D.6-D.7. The Commission's questions concerning R&D expenditures solicited information only with respect to processing/converting operations, and explicitly excluded R&D expenditures relating to 2,4-D acid production. See Blank U.S. producers' questionnaire, EDIS Doc. No. 839707 (Dec. 19, 2024) at Questions VI-11a, VI-11c. However, Corteva reported *** R&D expenditures for its 2,4-D acid operations during the POI. See CR/PR at Table 6.7.

percent for Nufarm, and *** percent for PBI-Gordon.⁶⁹ By comparison, the value added annually during the POI was *** percent for Corteva.⁷⁰

Employment Levels. During the POI, the average number of PRWs involved in the production of 2,4-D esters and/or salts ranged annually from *** for Albaugh, *** for Drexel, *** for Nufarm, and *** for PBI-Gordon.⁷¹ By comparison, Corteva reported an average of *** PRWs involved in the production of 2,4-D acid and esters.⁷²

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 from *** sources and *** percent from *** sources.⁷³ That same year, 2,4-D acid accounted for *** percent of Drexel's total raw material costs, *** of Nufarm's total raw material costs, and *** percent of PBI-Gordon's total raw material costs, which all firms sourced exclusively from ***.⁷⁴ By comparison, Corteva purchased *** percent of the raw materials required to produce 2,4-D acid from domestic suppliers during this period, although the upstream source of these raw materials is unknown.⁷⁵

Other Costs and Activities. Drexel reports that ***.⁷⁶ It also reports that ***.⁷⁷ Nufarm reports that ***.⁷⁸ PBI-Gordon reports that ***.⁷⁹ By comparison, Corteva reports that the production of 2,4-D acid entails ***.⁸⁰

⁶⁹ CR/PR at Table D.6.

⁷⁰ CR/PR at Table D.6.

⁷¹ CR/PR at Table D.6. These figures do not control for the size of the production operation and could also vary based on the production technology used. In their narrative responses, Albaugh reports ***; Drexel reports ***; Nufarm reports ***; and PBI-Gordon reports ***. *Id.* at Table D.5.

⁷² CR/PR at Table D.6. In its narrative response, Corteva estimates that ***. *Id.* at Table D.5. It subsequently reported that between *** to *** PRWs worked on DCP production in its Freeport facility during the POI. *Id.* at Table 3.14.

⁷³ CR/PR at Table D.6.

⁷⁴ CR/PR at Table D.6. Table D.6 indicates that ***. Albaugh reports that, in addition to 2,4-D acid, its material inputs include ***. *Id.* at Tables D.5-D.6. Drexel reports that, in addition to 2,4-D acid, its material inputs include ***. *Id.* BPI-Gordon reports that, in addition to 2,4-D acid, its material inputs include ***. *Id.*

⁷⁵ CR/PR at Table D.6. Corteva reports that its material inputs include ***. *Id.* We observe that although ***. *Id.* These data do not include material inputs, including DCP, that Corteva sources from its Freeport facility.

⁷⁶ CR/PR at Table D.5.

⁷⁷ CR/PR at Table D.5.

⁷⁸ CR/PR at Table D.5.

⁷⁹ CR/PR at Table D.5.

⁸⁰ CR/PR at Table D.5.

3. Conclusion

We disagree with Converters' contentions that our preliminary determination failed to properly reflect an evaluation of converters' activities on their own, or impermissibly relied on a comparison of each responding converter's production operations against Corteva's production operations. We presented data on greenfield replacement costs, value added, and technical expertise of converters on both an individualized and an aggregated basis.⁸¹ However, we found that the values reported by converters, which at times exceeded those reported by Corteva, appeared to be overstated through inclusion of assets, expenditures, and employment involved in the production of out-of-scope formulations.⁸² We thus gave less weight to these factors in our preliminary views. Respondents' contention that we failed to evaluate whether converters' production-related activities are sufficient on their own to qualify them as domestic producers glosses over these data issues, which were resolved in the final phase of these investigations.⁸³

We also disagree with the view that our practice requires an aggregate analysis to the exclusion of an individualized assessment. In past proceedings, the Commission has compared the production-related activities of individual firms operating downstream, such as processors, with those of individual upstream producers in considering whether the downstream firms engage in sufficient production operations.⁸⁴ The Commission also has compared the production-related activities of processors/downstream, in-scope producers in the aggregate to those of integrated or upstream, in-scope producers in the aggregate.⁸⁵ Both approaches can provide useful insights into the question of whether the processors/downstream producers

⁸¹ See *Confidential Preliminary Views*, EDIS Doc. 822462 (May 29, 2024) at 20-27.

⁸² See *Confidential Preliminary Views* at 25-27.

⁸³ Staff followed up with responding converters to confirm that their numbers were confined to ester/salt conversion activities and not downstream activities. See EDIS Docs. 848431 (April 10, 2025) and 848674 (April 14, 2025) (PBI-Gordon), 847990 (April 7, 2025) (Drexel), and 847989 (Nufarm) (April 7, 2025). Nufarm and PBI-Gordon revised their reported net assets to allocate net assets to 2,4-D only. See EDIS Docs. 846175 and 846176 (March 19, 2025).

⁸⁴ The Commission has also compared the production-related activities of individual processors/downstream producers with those of individual integrated/upstream producers in considering whether the firms operating downstream engaged in sufficient production-related activities to qualify as domestic producers. See, e.g., *Corrosion Inhibitors from China*, Inv. Nos. 701-TA-638 and 731-TA-1473 (Final), USITC Pub. 5169 at 9, 12-16 (March 2021); *Gas Powered Pressure Washers from Vietnam*, Inv. No. 731-TA-1598 (Final), USITC Pub. 5465 at 14 (Oct. 2023); *Low Speed Personal Transportation Vehicles from China*, Inv. Nos. 701-TA-731 and 731-TA-1700 (Preliminary), USITC Pub. 5533 at 16 (Aug. 2024).

⁸⁵ See, e.g., *Chlorinated Isocyanurates from China and Japan*, Inv. Nos. 701-TA-501 and 731-TA-1226 (Final), USITC Pub. 4494 at 8-10 (Nov. 2014); *Quartz Surface Products from China*, Inv. Nos. 701-TA-606 and 731-TA-1416 (Final), USITC Pub. 4913 at 11-13 (June 2019).

engage in sufficient production-related activities to be included in the domestic industry. An aggregated examination can provide an overall view of the level of investment or effort to produce the domestic like product in the United States, for example, by processors/downstream producers on the one hand and integrated/upstream producers on the other. However, an aggregate analysis can also obscure differences between processors/downstream producers and integrated/upstream producers that meaningfully distinguish between the respective level or degree of investment and effort required of each firm to produce the domestic like product. An aggregate approach may also obscure situations where the firms operating downstream report different production processes that could lead to different conclusions on the sufficiency of their production-related activities.⁸⁶ Thus, it can be important to consider how processors/downstream producers and integrated/upstream producers compare on an individual level. In this investigation, we consider the issue of whether downstream converters engage in sufficient production-related activities using both approaches.

In respect of Converters' interpretation of the CIT's decision in *Chemours* that the Commission is required to consider whether Converters' on their own basis engage in sufficient production related activities, without reference to integrated producers, we disagree.⁸⁷ In any event, as elaborated below, we examine the issue from both perspectives.

The record in the final phase of these investigations contains mixed evidence with respect to whether Albaugh, Drexel, Nufarm, or PBI-Gordon engages in production-related activities sufficient for each to be considered a producer of the domestic like product. As Corteva produces each of the forms of 2,4-D included in the domestic like product, we find it instructive to compare the converters' productive activities with Corteva's. On the one hand, the record indicates that the Converters' 2,4-D production-related activities are generally on a smaller scale than those of Corteva. The greenfield replacement cost for replicating Corteva's

⁸⁶ We note that the record indicates that *** and ***, which accounted for *** percent and *** percent of production using imported/purchased 2,4-D, respectively, reported smaller values for greenfield replacement costs, asset values, and employment than *** and ***, which accounted for *** and *** percent of production. CR/PR at Tables D.1, D.6.

⁸⁷ In *Chemours*, the CIT held that the Commission determination to include processors of polytetrafluoroethylene resin in the definition of the domestic industry was supported by substantial evidence, where the Commission in its determination considered processors data both on an absolute basis and relative to integrated manufacturers. See *Chemours*, 443 F.Supp.3d at 1321-1324 (Ct. Int'l Trade 2020). The Court found that the Commission considered and reasonably responded to claims advanced by plaintiff petitioner in that case that processors with respect to various factors, including capital investments, value added technical expertise, and value added, engaged in lower levels of production related activities than integrated producers. *Id.* at 1324.

current facility is substantially greater than the greenfield replacement costs reported by converters in the aggregate.⁸⁸ Consistent with the much greater scope of its production facilities, the value added by Corteva in the production of 2,4-D acid and conversion of that acid into 2,4-D esters and salts, ranging from *** percent, is much greater than the value-added by converters in converting 2,4-D acid into 2,4-D esters and salts, which ranged from *** percent, collectively.⁸⁹ Furthermore, converters achieved this relatively modest added value *** through the conversion of subject imports of 2,4-D acid. Thus, *** of the value of their finished 2,4-D salts and esters is foreign, rather than domestic. By contrast, the vast majority of raw material inputs used by Corteva in the production of 2,4-D is sourced from *** manufacturers.⁹⁰

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. All of the responding converters other than PBI-Gordon rating the complexity, intensity, and importance of their manufacturing activities a ***, the same numerical rating reported by Corteva.⁹¹ The record also indicates that the employment levels of three converters approached those of Corteva, while *** employed a greater number of PRWs than Corteva.⁹² Moreover, the asset values, capital expenditures and R&D expenditures during the POI reported by individual converters exceeded those reported by Corteva in many cases.⁹³ Converters and Corteva alike reported substantial additional production-related costs and activities, such as registration and distribution costs.

⁸⁸ CR/PR at Table D.6.

⁸⁹ CR/PR at Table D.6.

⁹⁰ CR/PR at Table D.6. As previously stated, Corteva sourced *** percent of the raw materials required to produce 2,4-D acid from domestic suppliers during this period. *Id.* Converters, by contrast, collectively sourced *** percent of their 2,4-D acid from subject sources; purchased acid comprised *** percent of their total raw material costs. *Id.* This distinguishes the record of these investigations from that of the *Polytetrafluoroethylene Resin from China and India* final phase determinations that were appealed in *Chemours*, where the Commission had found that processors used an “‘appreciable portion’ of U.S.-sourced material.” See *Chemours*, 443 F.Supp.3d at 1324 (Ct. Int’l Trade 2020).

⁹¹ CR/PR at Table D.7.

⁹² CR/PR at Table D.6.

⁹³ Corteva valued its 2,4-D assets as between \$*** during the POI, which was *** than the valuation Nufarm reported for its assets, of between \$***, *** to the valuation Albaugh reported for its assets, of between \$***, and *** than the valuations reported by Drexel, at \$***, and BPI-Gordon, of between \$***. CR/PR at Table D.6.

Corteva reported annual capital expenditures during the POI of between \$***, which was *** than the \$*** in expenditures reported by Nufarm, and greater than the \$*** reported by PBI-Gordon and \$*** reported by Albaugh. *Id.*

(Continued...)

On balance, we find the evidence indicates that converters do not engage in sufficient production-related activities to qualify as domestic producers. We find particularly compelling the substantial disparities between the per-unit value added and Corteva's greenfield replacement costs that were more than *** times greater than those for the converters combined. We also note that some of Corteva's expenses for R&D and capital expenditures are likely to have predated the POI but remain relevant. We placed less weight on employment levels, in view of differences in the nature of the U.S. production operations of Corteva and responding converters.⁹⁴ And, while the production of 2,4-D salts and esters from 2,4 acid appears to require substantial expertise, Corteva must have that expertise for its production of 2,4-D esters as well as the expertise necessary to produce 2,4-D acid itself. In contrast, Converters import the bulk of their 2,4-D acid requirements for the production 2,4-D salt and ester from subject producers in China and India. Therefore, we find that none of the Converters engage in sufficient production-related activities for treatment as a producer of the domestic like product.

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

Corteva *** report *** R&D expenditures in its responses to the Commission's questions concerning the sufficiency of production. Citing a study by a consultancy firm appended to its postconference brief, however, it argues that the discovery, development, and registration of a new conventional chemical crop protection active ingredient, such as 2,4-D, would cost an estimated \$301 million, including \$126.6 million in research expenditures. See Corteva Prehearing Br. at 15; Corteva Postconf. Br., EDIS Doc. 819030 (Apr. 18, 2024), Exh. 8. Although Corteva implies that the Commission should consider the theoretical cost of developing 2,4-D as an R&D expense, such expenses would have predated the POI. Corteva reported *** R&D expenditures during the POI, asserting that it ***. CR/PR at Table 6.8. By contrast, Albaugh reported annual R&D expenditures of between \$***. *Id.* at Tables 6.7, D.6.

⁹⁴ As previously stated, a witness for Corteva testified at the hearing that Corteva's production operations are highly automated, relative to conversion operations. Tr. at 96 (Brown). Given differences in the nature of the production operations reported by Corteva and responding converters, we give less weight to data on the record concerning employment levels.

or which are themselves importers.⁹⁵ Exclusion of such a producer is within the Commission's discretion based upon the facts presented in each investigation.⁹⁶

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.⁹⁷

Respondents argue that appropriate circumstances do not exist for the exclusion of any converter from the domestic industry.⁹⁸

2. Analysis

The record indicates that Petitioner is subject to possible exclusion under the related parties provision because it imported subject merchandise during the POI.^{99 100} We consider below whether appropriate circumstances exist to exclude Corteva from the domestic industry.

⁹⁵ 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).

⁹⁶ The primary factors the Commission has examined in deciding whether appropriate circumstances exist to exclude a related party include the following:

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

⁹⁷ Corteva Prehearing Br. at 16-23.

⁹⁸ Drexel & Nufarm Prehearing Br. at 18-20; Drexel Posthearing Br., Exh. 1 at 3-4; PBI-Gordon Prehearing Br. at 16-21.

⁹⁹ CR/PR at Table 3.12.

¹⁰⁰ In light of 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. However, were we to find that converters engaged in sufficient production-related activities to qualify as domestic producers, we would find that appropriate circumstances existed to exclude each converter under the related parties provision. In particular, converters import in-scope 2,4-D acid from subject countries that they used to produce downstream in-scope 2,4-D salts and esters. Thus, converters' domestic production operations benefited substantially from their subject imports such that their inclusion in the domestic industry (Continued...)

Corteva. Corteva, the Petitioner, accounted for 100 percent of domestic industry production of 2,4-D acid throughout the POI.¹⁰¹ Corteva's ratio of subject imports to domestic production was *** percent throughout the POI.¹⁰² It stated that it imported subject merchandise ***.¹⁰³

Given that Corteva is the Petitioner and the sole domestic producer of 2,4-D acid, and imported *** quantities of subject merchandise for ***, its primary interest is in domestic production. Moreover, there is no indication that Corteva's imports benefited its domestic production operations. Accordingly, there is no information on the record indicating that Corteva's inclusion in the domestic industry would mask injury. Given this, and in the absence of any contrary argument, we find that appropriate circumstances do not exist to exclude Corteva from the domestic industry.

IV. Cumulation¹⁰⁴

For purposes of evaluating the volume and effects for a determination 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

would skew the domestic industry data and mask injury. Indeed, converters enjoyed stronger financial performance during the POI than Corteva. CR/PR at Tables D.19, D.21, D.23, D.25, G.5.

¹⁰¹ CR/PR at Table 3.1.

¹⁰² CR/PR at Table 3.12.

¹⁰³ CR/PR at 3.18.

¹⁰⁴ Pursuant to section 771(24) of the Tariff Act, imports from a subject country of merchandise corresponding to a domestic like product that account for less than 3 percent of all such merchandise imported into the United States during the most recent 12 months for which data are available preceding the filing of the petition shall be deemed negligible. 19 U.S.C. §§ 1671b(a), 1673b(a), 1677(24)(A)(i), 1677(24)(B); *see also* 15 C.F.R. § 2013.1 (developing countries for purposes of 19 U.S.C. § 1677(36)). The statute further provides that subject imports from a single country which comprise less than 3 percent of total such imports of the product may not be considered negligible if there are several countries subject to investigation with negligible imports and the sum of such imports from all those countries collectively accounts for more than 7 percent of the volume of all such merchandise imported into the United States. 19 U.S.C. § 1677(24)(A)(ii).

During March 2023 to 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 *** percent of total U.S. imports of 2,4-D, and subject imports from India accounted for *** percent of total U.S. imports of 2,4-D. CR/PR at Table 4.4.

As imports from each subject country exceed the three percent negligibility threshold, we find that imports from China and India subject to the antidumping and countervailing duty investigations are not negligible.

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
- (4) whether the subject imports are simultaneously present in the market.¹⁰⁵

While no single factor is necessarily determinative, and the list of factors is not exhaustive, these factors are intended to provide the Commission with a framework for determining whether the subject imports compete with each other and with the domestic like product.¹⁰⁶ Only a “reasonable overlap” of competition is required.¹⁰⁷

A. Arguments of the Parties

Petitioner argues that cumulation is mandatory in these investigations.¹⁰⁸ It notes that the petitions for both China and India were filed on the same day.¹⁰⁹ It asserts 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.¹¹⁰

¹⁰⁵ See *Certain Cast-Iron Pipe Fittings from Brazil, the Republic of Korea, and Taiwan*, Inv. Nos. 731-TA-278-280 (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).

¹⁰⁶ See, e.g., *Wieland Werke, AG v. United States*, 718 F. Supp. 50 (Ct. Int’l Trade 1989).

¹⁰⁷ 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, S.A. v. United States*, 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.”)).

¹⁰⁸ Petition at 18.

¹⁰⁹ Petition at 17.

¹¹⁰ Petition at 17-19.

Converters do not contest the cumulation of imports from China and India for purposes of present material injury.¹¹¹

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 subject countries on the same day, March 14, 2024.¹¹² The record in the final phase of these investigations also indicates that there is a 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. U.S. producer Corteva, all responding U.S. importers, and most responding purchasers reported that subject imports from each subject country were *** interchangeable with each other as well as with domestically produced 2,4-D.¹¹³

Most responding purchasers rated domestically produced 2,4-D as comparable or superior to subject imports from each subject country with respect to most of the 18 factors that influence purchasing decisions.¹¹⁴ Furthermore, the record shows that subject imports from each subject country overlapped with domestically produced 2,4-D in terms of chemical form.¹¹⁵

¹¹¹ Drexel & Nufarm Prehearing Br. at 22-23; BPI-Gordon Prehearing Br. at 20-21.

¹¹² None of the statutory exceptions to cumulation apply. We observe that these investigations involve dumping and subsidy findings regarding 2,4-D from China and India. Consequently, any decision to cumulate imports from both 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 at 9-11 (April 2016). *Circular Welded Carbon-Quality Steel Pipe from India, Oman, the United Arab Emirates, and Vietnam*, Inv. Nos. 701-TA-482 to 484 (Final), USITC Pub. 4362 at 12 n.59 (Dec. 2012); *Softwood Lumber from Canada*, Inv. Nos. 701-TA-414 and 731-TA-928 (Final), USITC Pub. 3509 at 29-31 (May 2009); *Bingham & Taylor v. United States*, 815 F.2d 982 (Fed. Cir. 1987).

¹¹³ CR/PR at 2.13-2.15. *** reported that the domestic like product requires little to no preparatory crushing and flows well through its manufacturing equipment. *Id.* at 2.22.

¹¹⁴ CR/PR at Table 2.12.

¹¹⁵ CR/PR at Table 4.5. Corteva shipped or internally consumed *** pounds DWAE of 2,4-D salt, *** pounds DWAE of 2,4-D esters, and *** pounds DWAE of 2,4-D acid in 2023. *Id.* During this period, U.S. importers imported *** pounds DWAE of 2,4-D acid and *** pounds DWAE of 2,4-D esters from China; and *** pounds DWAE of 2,4-D acid and *** pounds DWAE of 2,4-D esters from India. *Id.*

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 “never” significant between the domestic like product and subject imports from China and India, and between imports from both subject countries.¹¹⁶ The responses of U.S. importers and purchasers were mixed, with a majority of U.S. importers and a plurality of U.S. purchasers reporting that non-price differences are “always” or “frequently” significant between the domestic like product and subject imports from China and India.¹¹⁷

Channels of Distribution. During the POI, the domestic like product and most subject imports were sold to ***.¹¹⁸

Geographic Overlap. U.S. producer Corteva reported shipping the domestic like product to ***.¹¹⁹ Responding U.S. importers also reported shipping imports from each subject country to all regions in the contiguous United States.¹²⁰

The majority of subject imports from China entered through ports located in the North, while substantial quantities also entered through ports located in the South and appreciable quantities entered through ports located in the East.¹²¹ 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 South.¹²²

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.¹²³

Conclusion. The record in the final phase of these investigations indicates that subject imports from China and India are fungible with domestically produced 2,4-D and each other.

¹¹⁶ CR/PR at Table 2.16.

¹¹⁷ CR/PR at Tables 2.17-2.18.

¹¹⁸ CR/PR at Table 2.2. For subject imports from China, the percentage of 2,4-D shipped to converters/formulators ranged from *** percent to *** percent from 2021 to 2023, while the percentage shipped to end-users ranged from *** percent to *** percent, and the percentage shipped to distributors was *** percent in 2023. *Id.* For subject imports from India, the percentage of converters/formulators ranged from *** percent to *** percent during this period, while the percentage shipped to end-users ranged from *** percent to *** percent. *Id.*

¹¹⁹ CR/PR at Table 2.3.

¹²⁰ CR/PR at Table 2.3.

¹²¹ CR/PR at Table 4.6.

¹²² CR/PR at Table 4.6.

¹²³ CR/PR at Tables 4.7, 5.3, 5.5. Subject imports from China were not present in the U.S. market for three months of the POI, July and August of 2023, and July of 2024, and subject imports from India were not present in the U.S. market for four months of the POI, August, September, and October of 2023, and October of 2024. *Id.* at Table 4.7. Several U.S. importers, including ***, report that Corteva is either unwilling or unable to sufficiently supply them. *Id.* at 2.23-2.24. We note in this regard that Corteva’s domestic shipments in interim 2024 were ***. *Id.* at Table 3.8.

Imports from each of the subject countries and domestically produced 2,4-D were sold in overlapping channels of distribution and geographic markets and were simultaneously present in the U.S. market from 2021 through 2023. Because there is a reasonable overlap of competition between and among subject imports from China and India and domestically produced 2,4-D during the investigation period, we cumulate subject imports from these sources for our analysis of whether there is material injury by reason of subject imports.

V. Material Injury by Reason of Subject Imports

Based on the record in the final phase of this investigation, we find that an industry in the United States is materially injured by reason of imports of 2,4-D from China and India that Commerce has found to be sold in the United States at LTFV and subsidized by the governments of China and India.

A. Legal Standards

In the final phase of antidumping and countervailing duty investigations, the Commission determines whether an industry in the United States is materially injured or threatened with material injury by reason of the imports under investigation.¹²⁴ 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.¹²⁵ The statute defines “material injury” as “harm which is not inconsequential, immaterial, or unimportant.”¹²⁶ In assessing whether the domestic industry is materially injured by reason of subject imports, we consider all relevant economic factors that bear on the state of the industry in the United States.¹²⁷ 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.”¹²⁸

Although the statute requires the Commission to determine whether the domestic industry is “materially injured or threatened with material injury by reason of” unfairly traded imports,¹²⁹ it does not define the phrase “by reason of,” indicating that this aspect of the injury

¹²⁴ 19 U.S.C. §§ 1671d(b), 1673d(b).

¹²⁵ 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).

¹²⁶ 19 U.S.C. § 1677(7)(A).

¹²⁷ 19 U.S.C. § 1677(7)(C)(iii).

¹²⁸ 19 U.S.C. § 1677(7)(C)(iii).

¹²⁹ 19 U.S.C. §§ 1671d(b), 1673d(b).

analysis is left to the Commission's reasonable exercise of its discretion.¹³⁰ In identifying a causal link, if any, between subject imports and material injury to the domestic industry, the Commission examines the facts of record that relate to the significance of the volume and price effects of the subject imports and any impact of those imports on the condition of the domestic industry. This evaluation under the "by reason of" standard must ensure that subject imports are more than a minimal or tangential cause of injury and that there is a sufficient causal, not merely a temporal, nexus between subject imports and material injury.¹³¹

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.¹³² In performing its examination, however, the Commission need not isolate

¹³⁰ *Angus Chemical Co. v. United States*, 140 F.3d 1478, 1484-85 (Fed. Cir. 1998) ("The statute does not 'compel the commissioners' to employ {a particular methodology}.", *aff'g*, 944 F. Supp. 943, 951 (Ct. Int'l Trade 1996).

¹³¹ 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).

¹³² SAA at 851-52 ("The Commission must examine other factors to ensure that it is not attributing injury from other sources to the subject imports."); S. Rep. 96-249 at 75 (1979) (the Commission "will consider information which indicates that harm is caused by factors other than less-than-fair-value imports."); H.R. Rep. 96-317 at 47 (1979) ("in examining the overall injury being experienced by a domestic industry, the ITC will take into account evidence presented to it which demonstrates that the harm attributed by the petitioner to the subsidized or dumped imports is attributable to such other factors;" those factors include "the volume and prices of nonsubsidized imports or imports sold at fair value, contraction in demand or changes in patterns of consumption, trade restrictive practices of and competition between the foreign and domestic producers, developments in technology and the export performance and productivity of the domestic industry"); accord *Mittal Steel*, 542 F.3d at 877.

the injury caused by other factors from injury caused by unfairly traded imports.¹³³ Nor does the “by reason of” standard require that unfairly traded imports be the “principal” cause of injury or contemplate that injury from unfairly traded imports be weighed against other factors, such as nonsubject imports, which may be contributing to overall injury to an industry.¹³⁴ It is clear that the existence of injury caused by other factors does not compel a negative determination.¹³⁵

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.”¹³⁶ 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

¹³³ SAA at 851-52 (“{T}he Commission need not isolate the injury caused by other factors from injury caused by unfair imports.”); *Taiwan Semiconductor Industry Ass’n*, 266 F.3d at 1345 (“{T}he Commission need not isolate the injury caused by other factors from injury caused by unfair imports Rather, the Commission must examine other factors to ensure that it is not attributing injury from other sources to the subject imports.” (emphasis in original)); *Asociacion de Productores de Salmon y Trucha de Chile AG v. United States*, 180 F. Supp. 2d 1360, 1375 (Ct. Int’l Trade 2002) (“{t}he Commission is not required to isolate the effects of subject imports from other factors contributing to injury” or make “bright-line distinctions” between the effects of subject imports and other causes.); see also *Softwood Lumber from Canada*, Inv. Nos. 701-TA-414 and 731-TA-928 (Remand), USITC Pub. 3658 at 100-01 (Dec. 2003) (Commission recognized that “{i}f an alleged other factor is found not to have or threaten to have injurious effects to the domestic industry, i.e., it is not an ‘other causal factor,’ then there is nothing to further examine regarding attribution to injury”), citing *Gerald Metals*, 132 F.3d at 722 (the statute “does not suggest that an importer of LTFV goods can escape countervailing duties by finding some tangential or minor cause unrelated to the LTFV goods that contributed to the harmful effects on domestic market prices.”).

¹³⁴ S. Rep. 96-249 at 74-75; H.R. Rep. 96-317 at 47.

¹³⁵ 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.”).

¹³⁶ *Mittal Steel*, 542 F.3d at 876 & 78; see also *id.* at 873 (“While the Commission may not enter an affirmative determination unless it finds that a domestic industry is materially injured ‘by reason of’ subject imports, the Commission is not required to follow a single methodology for making that determination ... {and has} broad discretion with respect to its choice of methodology.”) citing *United States Steel Group v. United States*, 96 F.3d 1352, 1362 (Fed. Cir. 1996) and S. Rep. 96-249 at 75. In its decision in *Swiff-Train v. United States*, 793 F.3d 1355 (Fed. Cir. 2015), the Federal Circuit affirmed the Commission’s causation analysis as comporting with the Court’s guidance in *Mittal*.

sources to the subject imports.”¹³⁷ The Federal Circuit has examined and affirmed various Commission methodologies and has disavowed “rigid adherence to a specific formula.”¹³⁸

The question of whether the material injury threshold for subject imports is satisfied notwithstanding any injury from other factors is factual, subject to review under the substantial evidence standard.¹³⁹ Congress has delegated this factual finding to the Commission because of the agency’s institutional expertise in resolving injury issues.¹⁴⁰

B. Conditions of Competition and the Business Cycle

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

1. 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.¹⁴¹

¹³⁷ *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.

¹³⁸ *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.”).

¹³⁹ We provide in our discussion below a full analysis of other factors alleged to have caused any material injury experienced by the domestic industry.

¹⁴⁰ *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.”).

¹⁴¹ The captive production provision, 19 U.S.C. § 1677(7)(C)(iv), as amended by the Trade Preferences Extension Act of 2015, provides:

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

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

(Continued...)

a. Parties' Arguments

Petitioner's Arguments. Petitioner argues that the captive production provision applies in these investigations.¹⁴² 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 predominant material input in the production of the downstream products.¹⁴³

Petitioner disagrees with Converters' contention that the lack of merchant market sales in interim 2024 indicates that it did not sell a significant proportion of its production of the domestic like product to the merchant market for purposes of meeting the threshold criterion of the captive consumption provision. It contends that it was ready and willing to supply purchasers throughout the POI but was informed by purchasers that its pricing was unreasonable. In its view, the Commission should examine merchant market trends across the POI.¹⁴⁴

In response to Converters' argument that Petitioner's internal consumption unit values result in a distorted analysis of its financial condition, particularly towards the end of the POI, Corteva argues that it valued its internal consumption at fair market value levels by applying ***. Where no ***, Corteva submits that it based its fair market valuation on ***.¹⁴⁵

Respondents' Arguments. Converters contend that Petitioner did not sell a significant proportion of its production to the merchant market.¹⁴⁶ In their view, Petitioner's sales to the merchant market in interim 2024 were minimal. They add that these sales are even less significant if adjusted to exclude Corteva's reported swap shipments, which in their view are

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.

¹⁴² Corteva Prehearing Br. at 28-30.

¹⁴³ Corteva Prehearing Br. at 30-31.

¹⁴⁴ Corteva Posthearing Br. at 1-6, 12-13, Exh. 1 at 21-22; Corteva Final Cmts. at 7-10. A witness for Corteva testified that she monitors export pricing and industry intelligence reports to estimate what U.S. importers are paying to import 2,4-D. Tr. at 59 (Ericson). Based on these sources, she determined in 2023 that Corteva's pricing was "well above" prevailing market prices in that period. *Id.*

¹⁴⁵ Corteva Posthearing Br. at 10-12; Corteva Posthearing Br., Exh. 1 at 16-18. Corteva subsequently provided an alternate methodology for valuating internal consumption in interim 2024 based on U.S. shipments of subject imports from official imports statistics. CR/PR at Table F.1. We discuss respondents' challenge to this methodology below in our analysis of impact.

¹⁴⁶ Drexel Prehearing Br. at 21-22; Nufarm Posthearing Br., Exh. 1 at 11-12.

not sales at fair market value.¹⁴⁷ PBI-Gordon notes that the domestic like product is coterminous with the scope of these investigations, which includes the 2,4-D components of formulated herbicide products.¹⁴⁸ It argues that the 2,4-D component of Corteva's formulated herbicides is accordingly within the domestic like product, and should be treated as reentering the merchant market for purposes of the first statutory criterion of the captive consumption provision.¹⁴⁹ PBI-Gordon also questions whether Petitioner's internal consumption values accurately reflect fair market value.¹⁵⁰

Drexel and Nufarm contend that if the captive consumption provision applies in the final phase of these investigations, the Commission should find that the domestic industry's internal consumption to produce downstream herbicides is an important condition of competition.¹⁵¹

b. 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.¹⁵² In these investigations, internal consumption accounted for between *** to *** percent of Corteva's total U.S. shipments of 2,4-D during the POI by quantity.¹⁵³ Corteva's merchant market sales, including swaps,¹⁵⁴ accounted for between ***

¹⁴⁷ BPI-Gordon Prehearing Br. at 25-27; Nufarm Posthearing Br., Exh. 1 at 11-12.

¹⁴⁸ PBI-Gordon's Prehearing Br. at 22-25.

¹⁴⁹ PBI-Gordon's Prehearing Br. at 22-25, *citing Full Member Subgroup of American Institute of Steel Construction LLC v. United States*, 81 F.4th 1242 (Fed. Cir. 2023) ("AIS").

¹⁵⁰ Tr. at 129-30 (Emerson).

¹⁵¹ Drexel & Nufarm's Prehearing Br. at 24-27. *See also* PBI-Gordon Prehearing Br. at 28-30 (arguing that Corteva strategically directed most of its 2,4-D acid to its internal consumption of its patented 2,4-D crop protection system, Enlist™).

We observe that internal consumption accounted for most U.S. shipments of responding importers of subject merchandise. Responding importers reported that internal consumption accounted for a *** percent majority of U.S. shipments of subject imports in 2023. CR/PR at 4.9 n.18. Moreover, responding U.S. converters reported that internal consumption accounted for *** percent of their U.S. shipments in 2021, *** percent in 2022, and *** in 2023. CR/PR at Table D.12. Internal consumption accounted for *** percent of their U.S. shipments in interim 2024, down from *** percent in interim 2023. *Id.*

¹⁵² Neither the statute nor the legislative history describes what quantum of production is significant. Instead, the SAA states that the Commission should determine "significance" on a case-by-case basis. SAA at 852.

¹⁵³ CR/PR at Table 3.8.

¹⁵⁴ Corteva has ***. CR/PR at 6.2 n.6. ***. Corteva Posthearing Br., Exh. 1 at 20-21; *see also* Corteva's Cross Supply Agreement with Albaugh, EDIS Doc. 848748 (Apr. 23, 2024). Therefore, the record indicates that the swaps meet the criteria for "sales." *Bethlehem Steel Corp. v. United States*, 294 (Continued...)

and *** percent of its total U.S. shipments during the POI by quantity.¹⁵⁵ Because both internal consumption and merchant market sales constitute significant portions of the domestic industry's production, during the POI¹⁵⁶ the threshold criterion for applying the captive consumption 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.¹⁵⁷ Corteva reported internal consumption of 2,4-D for the production of downstream formulated herbicide products,¹⁵⁸ and did not report diverting

F.Supp.2d 1359, 1365 (Ct. Int'l Trade 2003) (to be considered a "sale" in the merchant market, there must be transfer of title, payment of consideration, and transfer of title to an unrelated party).

¹⁵⁵ *Derived from* CR at Table 3.8. Commercial U.S. shipments accounted for between *** and *** percent of Corteva's U.S. shipments during the POI by quantity. *Id.* Swap shipments accounted for between *** and *** percent of Corteva's U.S. shipments during the POI by quantity. *Id.*

¹⁵⁶ If the conditions of the statutory captive production provision are met, the statute directs that "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." 19 U.S.C. § 1677(7)(C)(iv). Clause (iii) of 19 U.S.C. § 1677(7)(C), in turn, defines the financial performance factors as including "actual and potential decline in output, sales, market share." By instructing the Commission to consider any "decline", the statute here explicitly calls for the Commission to look beyond the most recent period, and compare the most recent period with data related to prior periods. In this context, it is appropriate for the Commission to examine the significance of internal transfers and merchant market sales over an extended period for purposes of the captive consumption provision.

Moreover, in the absence of further guidance on what constitutes "significant" production that is internally transferred or sold in the merchant market for purposes of meeting the threshold criterion, the Commission may exercise its discretion to find merchant sales significant where "they are of such magnitude that a more focused analysis of market share and financial performance is needed for the Commission to obtain a complete picture of the competitive impact of imports on the domestic industry." SAA at 852. We find the quantum of domestic production sold on the merchant market significant in these investigations in light of our examination of Petitioner's claim that it was priced out of the market at the end of the POI by low-priced subject imports, which we discuss below.

¹⁵⁷ *See, e.g., Hot-Rolled Steel Products from Argentina and South Africa*, Inv. Nos. 701-TA-404, 731-TA-898, 905 (Final), USITC Pub. 3446 at 15-16 (Aug. 2001); *Certain Cold-Rolled Steel Products from Argentina, Brazil, China, Indonesia, Japan, Russia, Slovakia, South Africa, Taiwan, Turkey and Venezuela*, Inv. Nos. 701-TA-393 and 731-TA-829-40 (Final) (Remand), USITC Pub. 3691 at 2 & n.19 (May 2004).

¹⁵⁸ PBI-Gordon contends that the language of the scope defines the domestically produced 2,4-D in downstream herbicides as part of the domestic like product. PBI-Gordon Prehearing Br. at 23. However, as the Commission explained in its preliminary phase views, while the 2,4-D included in the herbicides is considered in-scope merchandise (and, thus, part of the domestic like product), the herbicide formulations themselves are out of scope. Therefore, U.S. shipments of these herbicides in the merchant market do not constitute re-entry of merchandise intended for internal consumption into the merchant market for purposes of the captive production provision. *See 2,4-Dichlorophenoxyacetic Acid ("2,4-D") from China and India*, Inv. Nos. 701-TA-710-711 and 731-TA-1673-1674 (Preliminary), USITC Pub. 5511 (May 2024) at 31 n.171.

(Continued...)

any 2,4-D intended for internal consumption to the merchant market.¹⁵⁹ Therefore, the first statutory criterion is satisfied.

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.¹⁶⁰ In these investigations, Corteva reports that 2,4-D accounts for *** percent and *** percent of the finished cost and quantity, respectively, of the finished downstream herbicide product.¹⁶¹ The record therefore indicates that 2,4-D is the predominant material input in formulated herbicide products, which satisfies this criterion.

c. Conclusion

We find that the criteria for application of the captive production provision are satisfied in the final phase of these investigations. Accordingly, we focus primarily on the merchant

In our view, PBI-Gordon's interpretation of the first statutory criterion may nullify application of the captive production provision in investigations where the underlying scope includes components of downstream products. PBI-Gordon contends that *AIS* precludes the Commission from treating herbicides as the relevant downstream article for purposes of the captive production provision. However, the SAA defines a downstream article as an article distinct from the domestic like product but that is produced from the domestic like product. See SAA at 852–853. In this case, the scope definition uses the term “component” to describe the 2,4-D derivative that is incorporated in the formulated herbicide, indicating both a distinction between the two and that the formulation is a product produced from the domestic like product. PBI-Gordon's reliance on the Federal Circuit's ruling in *AIS* is inapposite. The Court in *AIS* affirmed the Commission's finding that the additional processing to assemble the fabricated structural steel components from out-of-scope kits was not performed by domestic steel producers, but unrelated third-party builders. See *AIS*, 81 F.4th at 1256 (Fed. Cir. 2023) (“{a}ggregation of components, without any assembly by the domestic producer, is not tantamount to a downstream product ‘produced’ from in-scope articles.”). This situation does not arise in these investigations.

Therefore, we find that record evidence does not indicate that domestically manufactured 2,4-D transferred internally for further processing by Corteva into out-of-scope herbicide formulations was in fact diverted for sale into the merchant market during the POI.

¹⁵⁹ CR/PR at 3.16 and Table 3.9. See also Corteva Prehearing Br. at 30.

¹⁶⁰ See generally *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 at 17 n.103 (October 2008); *Polyethylene Terephthalate Film, Sheet, and Strip from India and Taiwan*, Inv. Nos. 701-TA-415 and 731-TA-933-934 (Final), USITC Pub. 3518 at 11 & n.51 (June 2002). 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 at 15 n.69 (June 2003).

¹⁶¹ CR/PR at Table 3.10.

market in analyzing the market share and financial performance of the domestic industry, while also considering trends in the total market.¹⁶²

2. Demand Considerations

U.S. demand for 2,4-D is driven by demand for downstream formulated herbicide products. There are a number of “platforms” that use particular herbicides in combination with crops genetically modified to resist that herbicide. One such platform is Corteva’s Enlist™, using 2,4-D. Another is Xtend, a platform using the herbicide dicamba.¹⁶³ Demand for 2,4-D is inelastic, owing to a lack of substitute products, and the moderate cost share of 2,4-D in most of its end-use products.¹⁶⁴

Demand for formulated herbicide products is seasonal. According to respondents, there are three application seasons for herbicides: (1) pre-emergence, which typically lasts a month and broadly overlaps with the spring season; (2) post-emergence/over-the-top, which lasts four to five months and overlaps with late spring through early fall; and (3) post-harvest burn-down, which lasts one to two months and overlaps with fall.¹⁶⁵ Most responding market participants report that the 2,4-D market is subject to business cycles, with purchases of 2,4-D occurring in

¹⁶² We note that the Commission, while primarily considering the merchant market segment in applying the captive production provision, has also considered the total and internal consumption segments in its analysis. *Cold-Rolled Steel Flat Products from China and Japan*, Inv. Nos. 701-TA-541 and 731-TA-1284-1286 (Final), USITC Pub. 4619 at 24 (July 2016); *Certain Hot-Rolled Steel Flat Products from Australia, Brazil, Japan, Korea, the Netherlands, Turkey, and the United Kingdom*, Inv. Nos. 701-TA-545-547, 731-TA-1291-1297 (Final), USITC Pub. 4638 at 27 (September 2016). U.S. law does not preclude consideration of internal consumption when the captive consumption provision applies.

¹⁶³ CR/PR at 2.11. A February 2024 decision by the U.S. District Court for the District of Arizona led the EPA to vacate the registrations for dicamba products registered for over-the-top applications on dicamba-tolerant cotton and soybeans. *Id.* at 2.10. According to respondents, this ruling has resulted in increased demand for Corteva’s Enlist™ product platform. *See, e.g.*, ASA & NCGA Prehearing Br. at 5. Respondents argue that there are currently no viable substitutes for the Enlist™ platform, and that imposition of antidumping and countervailing duties issue on 2,4-D could allow Corteva to corner the end-use herbicides market and extract monopolistic rents. *See, e.g., id.* at 19-22; *see also* Drexel Posthearing Br., Exh. 1 at 16-17. Corteva rejects the contention that it seeks to monopolize the downstream herbicide market. Tr. at 51-52 (Cannistra). It emphasizes that its Enlist™ platform is not the only patented or trademarked formulation on the market that uses 2,4-D as an active ingredient. *Id.* at 21-22 (Moulin).

¹⁶⁴ CR/PR at 2.11.

¹⁶⁵ Drexel’s & Nufarm Prehearing Br. at 27; PBI-Gordon Prehearing Br. at 38-39; ASA & NCGA Prehearing Br. at 11.

the first and last quarters of the year ahead of applications of formulated herbicide products, which occur largely in the spring, with some occurring in the summer.¹⁶⁶

Most firms reported that U.S. demand for 2,4-D either steadily increased or fluctuated upward during the POI, with several firms also reporting that demand trends did not change.¹⁶⁷ They indicated that increased demand was driven by seasonal factors, the COVID-19 pandemic, which caused an increase in the number of customers entering the lawn and care segment of the herbicide market, and the introduction of Corteva's Enlist™ herbicide platform onto the market, which the EPA re-registered for a seven-year period in January 2022.¹⁶⁸

Apparent U.S. consumption of 2,4-D in the merchant market increased irregularly by *** percent during the three calendar years of the POI, from *** pounds DWAE in 2021 to *** pounds DWAE in 2022, and *** pounds DWAE in 2023.¹⁶⁹ It was *** percent higher in interim 2024, at *** pounds DWAE, compared to *** pounds DWAE in interim 2023.¹⁷⁰

3. Supply Considerations

During the POI, subject imports were the largest source of supply to the merchant market, followed by Corteva, then nonsubject imports.¹⁷¹

Corteva produces DCP at its Freeport, Texas facility, which it ships to its Midland, Michigan facility, for production of 2,4-D.¹⁷² Corteva reported that its ability to respond to changes in demand is enhanced by its *** but mitigated by its ***. Purchasers reported that Corteva's *** also limited its response to changes in demand.¹⁷³

¹⁶⁶ CR/PR at 2.11. Corteva, seven of eight importers, and 10 of 15 purchasers indicated that the 2,4-D market was subject to business cycles. CR/PR at 2.11. Several firms reported that purchasers, with most applications of formulated herbicide products occurring in the spring, and some occurring in the summer. *Id.*

¹⁶⁷ CR/PR at Table 2.6. Corteva reported that U.S. demand did not change, most importers reported that U.S. demand steadily increased, and a plurality of purchasers reported that U.S. demand did not change, whereas five reported that U.S. demand steadily increased, and two reported that U.S. demand fluctuated upwards. *Id.*

¹⁶⁸ CR/PR at 2.11-2.12; *see also* Drexel & Nufarm Prehearing Br., Exh. 15.

¹⁶⁹ CR/PR at Tables 4.9, C.2.

¹⁷⁰ CR/PR at Tables 4.9, C.2. In the total market, apparent U.S. consumption of 2,4-D increased irregularly by *** percent during the three calendar years of the POI, increasing from *** pounds DWAE in 2021 to *** pounds DWAE in 2022, then decreasing to *** pounds DWAE in 2023. CR/PR at Tables 4.8, C.1. It was *** percent higher in interim 2024, at *** pounds DWAE, than in interim 2023, at *** pounds DWAE. *Id.*

¹⁷¹ CR/PR at Tables 4.9, C.2. In the total market, Corteva was the largest source of supply, followed by subject imports, then nonsubject imports. *Id.* at Tables 4.8, C.1.

¹⁷² Corteva Prehearing Br. at 7-9.

¹⁷³ CR/PR at 2.5.

Corteva's share of apparent U.S. consumption declined from *** percent in 2021 to *** percent in 2022, and *** percent in 2023.¹⁷⁴ Its share of the merchant market was *** percent in interim 2024, down from *** percent in interim 2023.¹⁷⁵

Corteva's practical capacity increased irregularly during the full years of the POI, decreasing from *** pounds DWAE in 2021 to *** pounds DWAE in 2022, then increasing to *** pounds DWAE in 2023,¹⁷⁶ and *** pounds DWAE both interim periods.¹⁷⁷ Corteva's practical capacity utilization for 2,4-D declined irregularly during the POI, increasing from *** percent in 2021 to *** percent in 2022, then decreasing to *** percent in 2023.¹⁷⁸ It was lower in interim 2024, at *** percent, than in interim 2023, at *** percent.¹⁷⁹

Subject imports' share of apparent U.S. consumption increased from *** percent in 2021 to *** percent in 2022 and 2023.¹⁸⁰ Their share of the merchant market was higher in interim 2024, at *** percent, than in interim 2023, at *** percent.¹⁸¹

Nonsubject imports supplied *** percent of apparent U.S. consumption in the merchant market in 2021 and 2022, followed by *** percent in 2023.¹⁸² Their share of the merchant market was lower in interim 2024, at *** percent, than in interim 2023, at *** percent.¹⁸³

Based on official import statistics, the largest sources of nonsubject imports of 2,4-D in 2023 were Germany, the United Kingdom, and Colombia, which combined for *** percent of nonsubject import volume in 2023.¹⁸⁴

Several firms reported experiencing supply constraints during the POI. Corteva reported experiencing supply constraints in 2021, 2022, and 2023.¹⁸⁵ It cited the impacts of the COVID-

¹⁷⁴ CR/PR at Tables 4.9, C.2.

¹⁷⁵ CR/PR at Tables 4.9, C.2. Corteva's market share declined throughout the POI in the total market, from *** percent in 2021 to *** percent in 2022, and *** percent in 2023. CR/PR at Tables 4.8, C.1. It was *** percent in interim 2024, down from *** percent in interim 2023. *Id.*

¹⁷⁶ CR/PR at Tables 3.4, C.1.

¹⁷⁷ CR/PR at Tables 3.4, C.1.

¹⁷⁸ CR/PR at Tables 3.4, C.1.

¹⁷⁹ CR/PR at Tables 3.4, C.1.

¹⁸⁰ CR/PR at Tables 4.9, C.2.

¹⁸¹ CR/PR at Tables 4.9, C.2. In the total market, subject imports' market share increased from *** percent in 2021 to *** percent in 2022 and 2023. CR/PR at Tables 4.8, C.1. It was *** percent in interim 2024, up from *** percent in interim 2023. *Id.*

¹⁸² CR/PR at Tables 4.9, C.2.

¹⁸³ CR/PR at Tables 4.9, C.2. In the total market, nonsubject imports' market share increased from *** percent in 2021 to *** percent in 2022, and *** percent in 2023. CR/PR at Tables 4.8, C.1. It was *** percent in interim 2024, down from *** percent in interim 2023. *Id.*

¹⁸⁴ CR/PR at 2.7.

¹⁸⁵ CR/PR at Table 2.5.

19 pandemic and the Texas Freeze of 2022 as the bases for these supply constraints.¹⁸⁶ Four of seven responding importers similarly reported experiencing supply constraints in 2021, 2022, and 2023, whereas two importers each reported experiencing supply constraints during January 1 to March 14, 2024, and since March 14, 2024.¹⁸⁷ Corteva cited raw material shortages during a key production time, sales allocations when demand exceeded supply, limited production capacity during given periods, and increased demand for Corteva Enlist™ traits, which increased demand for 2,4-D, as the bases for these supply constraints.¹⁸⁸ Several purchasers reported

¹⁸⁶ CR/PR at 2.7. Corteva lists inability to compete with low-priced subject merchandise as a supply constraint. The Commission has traditionally not considered that category to encompass physical or practical constraints on the ability of producers to supply subject merchandise to their customers. We address Corteva's claims that it could not compete with low-priced imports below in the analysis of the impact of subject imports in section V.E.

Corteva reported its capacity and capacity utilization figures on the basis of full years and interim periods. *Id.* at 3.6. These figures do not show Corteva's utilization or ability to fulfill orders over shorter timeframes, when it may have experienced temporary constraints. *Id.* Accordingly, staff asked Corteva to provide monthly data on its production and practical capacity. *See id.* at Table 3.6. These data indicate that Corteva's production oscillated between *** pounds DWAE and *** pounds from January 2021 to March 2023, but continued at a lower level afterward, with a low point of *** pounds DWAE in *** and a high of *** in ***. Monthly production in interim 2024 was consistently below *** pounds DWAE. These data are consistent with the domestic industry's reported declines in capacity utilization. *Compare* CR/PR at Table 3.4 *with* Table 3.6.

BPI-Gordon observes that the sums of the monthly data at Table 3.6 for each year and interim period do not match the annual and interim period totals reported in Table 3.4, particularly with respect to practical capacity, and argues that the differences cast doubt on the accuracy of Corteva's figures. BPI-Gordon Final Cmts. at 9-11. However, the variations apparent in these datasets likely reflect differences in how these data were collected. Table 3.4 presents production and practical capacity data for full year and interim periods as reported in Corteva's U.S. producer questionnaire response at question II-3a using the Commission's standard instructions for reporting practical capacity. *See* Blank U.S. producers' questionnaire at p. 11. Comparatively, the data presented in table 3.6 was collected through staff correspondence in which Corteva reported its monthly production as well as production losses relating to "raw material shortage," "maintenance turnaround," "lack of demand," and "other causes." *See* EDIS Doc. 847991 (April 7, 2025). The sum of the reported monthly production data for the full year and interim periods approximates the production data reported in Corteva's U.S. producer questionnaire response. With respect to the differences in the practical capacity figures, staff added the production loss data submitted by Corteva relating to "raw material shortage" and "maintenance turnaround" to the figures Corteva reported as its monthly production as a proxy for the company's monthly practical capacity. As these figures were not collected and calculated on the same basis, and Corteva itself did not represent the figures as its own monthly practical capacity, we are unpersuaded by BPI-Gordon's claim that these differences reflect material errors in the data. We base our examination of the domestic industry's trade performance on the data in Table 3.4. We rely on the data in Table 3.6 for a better understanding of the specific periods during which Corteva reported that its production and capacity were constrained.

¹⁸⁷ CR/PR at Table 2.5.

¹⁸⁸ CR/PR at 2.7.

that Corteva stopped supplying them 2,4-D for use in traditional markets for 2,4-D end-use products during the POI, leading to a shortage of 2,4-D for pre-emergent and post-harvest burndown cycles.¹⁸⁹

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.¹⁹⁰ As we noted above in section IV.B, most responding market participants reported that subject imports from each subject country were *** interchangeable with domestically produced 2,4-D.¹⁹¹ In addition, most purchasers reported that domestically produced 2,4-D is comparable with subject imports from China on 11 of 18 purchasing factors, and is comparable with subject imports from India on 12 of 18 purchasing factors, with overlap in 11 purchasing factors.¹⁹²

¹⁸⁹ CR/PR at 2.7, 2.12. ***, ***, ***, ***, and *** reported that Corteva stopped supplying them 2,4-D to prioritize its production of Enlist™ products. *Id.* Corteva argues that low-priced subject imports depressed and suppressed prices of the domestic like product past a “shutdown point,” where subject imports fell below its variable costs. Corteva Prehearing Br. at 40-42. *See also* Tr. at 9-10 (Cannistra). We examine this argument in more detail below in our analysis of price effects.

¹⁹⁰ CR/PR at 2.13. Corteva argues that domestic 2,4-D is highly interchangeable and substitutable with subject imports, asserting that there is no discernable difference between imported 2,4-D and domestically produced 2,4-D. Corteva Prehearing Br. at 23-24. At the Commission hearing, domestic industry witnesses characterized 2,4-D as a commodity product. *See* Tr. at 7, 34 (Cannistra), 16 (Ericson), 20 (Moulin). Corteva further argues that whereas downstream formulations may have more limited interchangeability, 2,4-D acid and its derivatives are highly interchangeable as between different sources, as evidenced by ***. Corteva Prehearing Br. at 23-24. Respondent witnesses at the Commission hearing indicated that increased demand and high shipping costs limited the availability of 2,4-D on the market. *See id.* at 164-65 (Barham), 174 (Bernard). Drexel and Nufarm argue that although domestically produced 2,4-D and subject imports are interchangeable, the lack of availability of domestically produced 2,4-D acid limited the substitutability of 2,4-D from domestic and subject sources during the investigation period. Drexel & Nufarm Prehearing Br. at 36-37. PBI-Gordon likewise argues factors other than price drove U.S. purchasers’ purchasing decision during the investigation period, citing the purchaser questionnaire data and asserting Corteva’s *** from the U.S. merchant market during the investigation period. PBI-Gordon Prehearing Br. at 37-38. Our finding of at least a moderate-to-high degree of substitutability between domestically manufactured and subject imported 2,4-D accounts for the high degree of interchangeability between domestically produced 2,4-D and subject imports, as well as availability considerations.

¹⁹¹ CR/PR at 2.13-2.15. *** reported that imports need additional preparatory crushing to enhance its manufacturing flowability. *Id.* at 2.22.

¹⁹² CR/PR at Table 2.12. These factors include comparability with specific crops planted, discounts offered, meets regulatory requirements (*e.g.*, EPA, other), minimum quantity requirements, packaging, payment terms, product consistency, product range, quality meets industry standards, and U.S. transportation costs. Three of these factors, namely meets regulatory requirements (*e.g.*, EPA, other), quality meets industry standards, and product consistency, were identified by most purchasers (Continued...)

We also find that price is an important factor in purchasing decisions for 2,4-D. Responding purchasers identified price/cost and availability/supply among their top three most often cited purchasing factors.¹⁹³ Corteva reported that differences other than price were *** significant.¹⁹⁴ Conversely, U.S. importers reported that these differences were always or frequently significant.¹⁹⁵ Purchaser responses were mixed, with a plurality reporting that differences between domestic and subject 2,4-D were sometimes significant.¹⁹⁶

Respondents contend that there are several distinct conditions of competition relevant to the 2,4-D market, specifically, EPA registration requirements and patent protections (and associated licensing agreements) for Corteva's Enlist™ product platform. While we note these conditions, we maintain our findings that there is at least a moderate-to-high degree of substitutability between domestically produced 2,4-D and subject imports and that price is an important factor in purchasing decisions. Further, as discussed below and in section V.E., we do not find that EPA registration requirements or patent protection (and associated licensing agreements) for Corteva's Enlist™ product platform attenuate competition between domestic product and subject imports.

The record indicates that companies that produce, sell, or import in-scope 2,4-D or 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.¹⁹⁷ Respondents contend that the process for registering a foreign supplier with the EPA is lengthy and onerous, whereas Corteva characterizes the registration process as streamlined.¹⁹⁸ Consistent with these arguments, Corteva reported that EPA registration requirements did not materially

as very important. *Id.* at Table 2.9. They differed with respect to availability, delivery terms, delivery time, price, quality exceeds industry standards, reliability of supply, and technical support/service. *Id.* at Table 2.12. Four of these factors, namely availability, delivery time, price, and reliability of supply, were identified by most purchasers as very important. *Id.* at Table 2.9.

¹⁹³ CR/PR at Table 2.8. Responding purchasers identified availability/supply as the most frequently cited first-most important factor (five firms), followed by price/cost and "all other factors" (three firms apiece). *Id.* Price was the most frequently reported second-most important factor (seven firms) followed by quality as the most frequently reported third-most important factor (five firms). *Id.*

¹⁹⁴ CR/PR at Table 2.16.

¹⁹⁵ CR/PR at Table 2.17.

¹⁹⁶ CR/PR at Table 2.18. We note that more purchasers reported that differences other than price were sometimes or never significant (22), than always or frequently interchangeable (15). *Id.*

¹⁹⁷ See Tr. at 23-24 (Symonds); Drexel Posthearing Br., Exh. 10 at 1-3 (containing an EPA registration document describing the EPA's registration process for pesticides).

¹⁹⁸ Compare Drexel & Nufarm Prehearing Br. at 35 and PBI-Gordon Posthearing Br., Exh. 1 at 9-12 with Corteva Posthearing Br. at 24-27.

impact the sale or production of imported 2,4-D relative to domestically produced 2,4-D, whereas five of seven responding U.S. converters/importers reported that these requirements limited entry or participation of imported 2,4-D in the U.S. market.¹⁹⁹

We observe that EPA registration requirements apply equally both to domestic producers of 2,4-D products and to importers of 2,4-D products.²⁰⁰ Thus, although these requirements may increase the cost of entry of new suppliers onto the market, as respondents contend with respect to imported product, we find no indication that EPA registration requirements significantly limited substitutability between domestically produced 2,4-D and subject imports, as these requirements apply in equal measure to both domestically produced 2,4-D and subject imports and the record does not reflect that registration requirements halted or otherwise limited potential new entrants to the market.²⁰¹

Respondents similarly argue that Corteva's patents for its Enlist™ product platform are a distinct condition of competition, as other formulators are unable to seek or obtain the EPA approval granted to Corteva for pre-emergence and post-emergence/over-the-top applications of 2,4-D-based herbicides on farmland containing Corteva's Enlist™ seeds, and farmers using Corteva's Enlist™ seeds are required under seed license agreements to use only Corteva's Enlist™ herbicide platform during these two application seasons.²⁰² Although Corteva does not contest these conditions as such, Corteva contends that its Enlist™ product platform is not the only patented or trademarked herbicide formulation on the market that uses 2,4-D as an active

¹⁹⁹ CR/PR at 2.8. Responding U.S. converters/importers gave time estimates for the EPA registration process that ranged between six months and three years. *Id.*

²⁰⁰ See Tr. at 24-28 (Symonds) (contrasting the EPA registration process for in-scope 2,4-D and out-of-scope herbicide formulations, with the latter characterized as more onerous); Drexel Posthearing Br., Exh. 1 at 34 (conceding that EPA regulations and costs apply equally to all suppliers of 2,4-D, but arguing that the need for suppliers to register foreign sources of 2,4-D due to a lack of available domestic supply of 2,4-D disadvantages importers relative to the domestic producer).

²⁰¹ Certain respondents addressed the impact of EPA regulations in their arguments concerning the threat of material injury, which we do not reach in these investigations. See, e.g., Drexel Posthearing Br., Exh. 1 at 34. We have, however, taken these assertions into account in our analysis of EPA regulations as an overall condition of competition. While we take note of respondents' contention that EPA registration requirements, whether alone or in combination with patent protections and licensing requirements, limit competition between Corteva and importers in the downstream market for end-use herbicide products, we observe that Corteva argues in response that its Enlist™ products are not the only herbicides available for post-emergence/over-the-top applications. Moreover, we explain below that we decline to make any findings on the extent to which trade remedy relief on 2,4-D may impact or further limit competition in the downstream market for herbicides.

²⁰² Drexel & Nufarm Prehearing Br. at 28-30; PBI-Gordon Prehearing Br. at 32-33. See also Tr. (Ragland) at 126-127; ASA & NCGA Prehearing Br. at 12, Exh. 6; Drexel & Nufarm Prehearing Br. at 35-36; PBI-Gordon Prehearing Br. at 29-30, 32-33, Exh. 3; Drexel Posthearing Br. at 13, Exh. 1 at 16-17, 34.

ingredient and claims that patents covering 2,4-D-based herbicides are common within the industry and held by several converters.²⁰³ Corteva also asserts that notwithstanding these restrictions, farmers may use generic 2,4-D products for burn-down applications on soybeans, for use generally in other crops, and for use generally in land management.²⁰⁴ Consistent with these arguments, Corteva reported that patent protections did not materially impact the sale or production of imported 2,4-D relative to domestically produced 2,4-D, whereas four of seven responding U.S. converters/importers reported that these protections limited entry or participation of imported 2,4-D in the U.S. market.²⁰⁵ Additionally, four of 15 purchasers reported that patent protections limited entry or participation of imported 2,4-D into the U.S. market, whereas ten reported that they did not.²⁰⁶

As to respondent's contentions regarding Corteva's patents for its Enlist™ product platform and associated seed licensing agreement, respondents do not identify a way by which these limitations on competition, authorized by statute, in the downstream herbicide or seed markets may limit the substitutability of domestic and imported 2,4-D or otherwise affect competition for sales of the upstream 2,4-D.²⁰⁷ Indeed, as noted above, a majority of purchasers did not consider patent protection to have limited participation of imported 2,4-D.²⁰⁸

During the POI, *** of Corteva's commercial U.S. shipments were made from ***.²⁰⁹ Corteva did not provide data on lead times, though it reported *** days in the preliminary phase of these investigations.²¹⁰ U.S. importers sold *** of their commercial U.S. shipments from U.S. inventory, with lead times averaging *** days, and the remainder of their commercial U.S. shipments were shipped from foreign inventory or produced to order, with lead times averaging *** and *** days, respectively.²¹¹

²⁰³ Tr. At 21-22 (Moulin); Corteva Posthearing Br., Exh. 1 at 12.

²⁰⁴ Tr. at 92-93 (Ericson).

²⁰⁵ CR/PR at 2.9. Additionally, four of 15 purchasers reported that patent protections limited entry or participation of imported 2,4-D into the U.S. market, whereas ten reported that they did not. *Id.* at 2.9-2.10.

²⁰⁶ CR/PR at 2.10.

²⁰⁷ To the extent respondents' argument is that Corteva's interest in its downstream herbicides and seeds rather than subject import underselling is the cause of the market share shift from Corteva to subject imports, we disagree, as discussed in sections V.D and E.

²⁰⁸ CR/PR at 2.10.

²⁰⁹ CR/PR at 2.15.

²¹⁰ *See Confidential Preliminary Views* at 53.

²¹¹ CR/PR at 2.15. Corteva and U.S. importers reported setting prices through *** negotiations. *Id.* at Table 5.1. Corteva reported selling *** its 2,4-D pursuant to *** contracts, whereas importers reported selling all of their product in the spot market. *Id.* at Table 5.2.

The raw materials used to produce 2,4-D acid include chloroacetic acid, phenol, and sodium hydroxide (caustic soda).²¹² Corteva reported that raw material prices are fixed to longer-term supply contracts, and ***.²¹³ Most responding importers reported that raw material prices either fluctuated upward or downward.²¹⁴ As a share of the domestic industry's COGS in the open market, raw materials increased from *** percent in 2021 to *** percent in 2022, and *** percent in 2023.²¹⁵ They were lower in interim 2024, at *** percent, than in interim 2023, at *** percent.²¹⁶

In 2019, 2,4-D imported under HTS statistical reporting number 2918.99.2010 from China became subject to additional duties of 7.5 percent ad valorem under section 301 of the Tariff Act of 1974.²¹⁷ Also in 2019, 2,4-D formulations imported under HTS statistical reporting numbers 3808.93.0500 and 3808.93.1500 from China also became subject to additional duties of 25 percent ad valorem duty under section 301.²¹⁸ Moreover, from April 10, 2025 through May 13, 2025, imports of 2,4-D originating from China were subject to an additional 125 percent ad valorem duty under the International Emergency Economic Powers Act ("IEEPA"), whereas imports of 2,4-D originating from India are subject to an additional 10 percent duty.²¹⁹ From May 14, 2025 to August 12, 2025, the IEEPA tariff rate of 125 percent ad valorem was replaced by a tariff rate of 10 percent ad valorem; effective August 12, 2025, this rate will be replaced by a tariff rate of 34 percent ad valorem.²²⁰

²¹² CR/PR at 5.1. *See also id.* at Table 6.5 for a breakdown of relative costs in 2023.

²¹³ CR/PR at 5.1; Corteva Prehearing Br. at 28. Corteva claims that the occurrence of low-priced subject import sales in the spot market can magnify the impacts of short-term price changes caused by low-priced subject imports. *Id.*

²¹⁴ CR/PR at 5.1.

²¹⁵ CR/PR at Table 6.3.

²¹⁶ CR/PR at Table 6.3. In the total market, Corteva's COGS increased irregularly from *** percent in 2021 to *** percent in 2022, and *** percent in 2023. CR/PR at Table 6.1. It was lower in interim 2024, at *** percent, than in interim 2023, at *** percent. *Id.*

²¹⁷ CR/PR at 1.10.

²¹⁸ CR/PR at 1.10.

²¹⁹ CR/PR at 1.10-1.11. *See also* Executive Order, [Modifying Reciprocal Tariff Rates to Reflect Discussions with The People's Republic of China](#) (May 12, 2025). Effective March 4, 2025, imports of 2,4-D from China are subject to an additional 20 percent ad valorem duty under IEEPA in connection with the national emergency declaration regarding the illicit importation of fentanyl into the United States. *See Further Amended Notice of Implementation of Additional Duties on Products of the People's Republic of China Pursuant to the President's Executive Order 14195, Imposing Duties To Address the Synthetic Opioid Supply Chain in the People's Republic of China*, 90 Fed. Reg. 11,426 (Mar. 6, 2025).

²²⁰ *See* Executive Order, [Modifying Reciprocal Tariff Rates to Reflect Discussions with The People's Republic of China](#) (May 12, 2025).

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.”²²¹

Cumulated subject import volume increased irregularly during the three calendar years of the POI, increasing from *** pounds DWAE in 2021 to *** pounds DWAE in 2022, then decreasing to *** pounds DWAE in 2023, a level *** percent higher than in 2021.²²² It was *** percent higher in interim 2024, at *** pounds DWAE, than in interim 2023, at *** pounds DWAE.²²³

Cumulated U.S. shipments of subject imports as a share of apparent U.S. consumption in the merchant market increased by *** percentage points from 2021 to 2023, from *** percent in 2021 to *** percent in 2022 and 2023.²²⁴ Their market share was *** percentage points higher in interim 2024, at *** percent, than in interim 2023, at *** percent.²²⁵

We find that the volume and the increase in volume of cumulated subject imports were significant in absolute terms and relative to consumption in the United States.

D. Price Effects of the Subject Imports

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

- (I) there has been significant price underselling by the imported merchandise as compared with the price of domestic like products of the United States, and
- (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.²²⁶

²²¹ 19 U.S.C. § 1677(7)(C)(i).

²²² CR/PR at Table 4.2.

²²³ CR/PR at Table 4.2.

²²⁴ CR/PR at Tables 4.9, C.2.

²²⁵ CR/PR at Tables 4.9, C.2. In the total market, cumulated subject imports’ share of apparent U.S. consumption increased *** percentage points over the three calendar years, from *** percent in 2021 to *** percent in 2022 and 2023. CR/PR at Tables 4.8, C.1. Their market share was *** percentage points higher in interim 2024, at *** percent, than in interim 2023, at *** percent. *Id.*

²²⁶ 19 U.S.C. § 1677(7)(C)(ii).

As discussed in section V.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. As discussed above, most responding market participants reported that subject imports from each subject country were *** interchangeable with domestically produced 2,4-D.²²⁷

We have examined several sources of data in our underselling analysis, including pricing, purchase costs, and lost sales data. With respect to pricing data, the Commission collected quarterly pricing data from U.S. producers and U.S. importers for the total quantity and free on board (“f.o.b.”) values of four pricing products shipped to unrelated U.S. customers during the POI.²²⁸ Corteva and eight 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.²²⁹ The pricing data reported by these firms accounted for *** percent of Corteva’s commercial U.S. shipments of 2,4-D, *** 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 2023.²³⁰ With respect to purchase cost data, the Commission received import purchase cost data for pricing product 1 from four firms that imported these products from subject sources for internal consumption.²³¹ The purchase cost data reported by these firms accounted for *** percent of subject imports from China and *** percent of subject imports from India in 2023.²³²

As an initial matter, we note that the post-hearing record includes two sets of price and price-cost comparisons for the Commission’s analysis – one that includes revised price and import purchase cost data submitted by U.S. importer *** after the Commission’s hearing but before the issuance of the final Staff Report, and another that excludes these data.²³³ Because

²²⁷ CR/PR at 2.13-2.15.

²²⁸ CR/PR at 5.4. 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; and

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

²²⁹ CR/PR at 5.4. Corteva did not report any pricing product data for products ***. *Id.* No importer reported data for product 3 from China and products 2 and 3 from India. *Id.*

²³⁰ CR/PR at 5.4.

²³¹ CR/PR at 5.14.

²³² CR/PR at 5.11.

²³³ Compare CR/PR at Tables 5.3-5.6, 5.12, 5.15 (reflecting pricing and purchase cost data including *** data), with Pricing Worksheet at ALT Tables 5.3-5.6, 5.12, 5.15 (reflecting pricing and purchase cost data excluding *** data). *** prior to the hearing submitted price and purchase cost data; however, due to initial concerns regarding the accuracy of *** data, these data were not included in the Commission’s Prehearing Staff Report. After the hearing, *** submitted revised data responsive (Continued...)

U.S. importer *** submitted its revised data to the Commission after Petitioner and respondents filed their posthearing briefs, the first opportunity available to the parties to comment on these data and their effect on then pricing and purchase-cost data occurred with the submission of final comments, which were filed two calendar days before the Commission's vote.²³⁴ In its final comments, Petitioner pointed out certain irregularities in *** data that it argued rendered *** data unreliable and that therefore *** data should not be included.²³⁵ Given the timing of *** submission, the Commission was unable to fully evaluate the discrepancies alleged in Petitioner's final comments or to correspond with U.S. importer *** to determine whether their data may be erroneous. Further, respondents have not had an opportunity potentially to rebut Petitioner's assertions as to these data. Given the foregoing, we have considered both sets of data in our analysis and determine that, regardless of whether U.S. importer *** revised data is properly included or properly omitted, a finding that cumulated subject imports undersold the domestic like product to a significant degree is supported by the record before us, that is, by either data set.²³⁶ Below, we review the pricing and purchase cost data inclusive of *** revised data, with notations in footnotes reviewing the pricing and purchase cost data omitting *** revised data.

The pricing data show that subject imports undersold the domestic like product in 17 of 29 available quarterly comparisons, including involving *** pounds DWAE of subject imports, at margins ranging from *** percent to *** percent, and averaging *** percent.²³⁷ Subject imports oversold the domestic product in the remaining 12 quarterly comparisons, involving *** pounds DWAE at overselling margins that ranged from *** percent to *** percent, and averaging *** percent.²³⁸ Thus, subject imports undersold the domestic like product in *** percent of available comparisons, with *** percent of the reported sales volume of subject

to these concerns. These revised data were included in the Staff Report. The Pricing Worksheet excludes these revised data.

²³⁴ See generally Corteva Final Cmts.

²³⁵ Corteva Final Cmts at 1-6. Petitioner also argued in the alternative that, should the Commission consider *** data, it should ignore the post-hearing revisions to these data. *Id.* at 6.

²³⁶ Commissioner Johanson did not consider the data set that included *** revised data.

²³⁷ CR/PR at Tables 5.3-5.5, 5.12.

²³⁸ CR/PR at Tables 5.3-5.5, 5.12.

imports in the quarters showing underselling.^{239 240} Instances of overselling by subject imports occurred mostly in 2022, whereas instances of underselling occurred mostly in 2023.²⁴¹

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 for product 1 in *** percent (9 of 19 instances) of available quarterly comparisons, involving *** pounds DWAE of subject imports, at price-cost differentials ranging from *** percent to *** percent, and averaging *** percent.²⁴² LDP costs were higher for subject imports in the remaining 10 quarterly comparisons, involving *** pounds DWAE of subject imports at price-cost differential ranging from *** percent to *** percent, and averaging *** percent.²⁴³ Thus, on a volume basis, *** percent of subject imports reported in the purchase cost data had a lower LDP cost than the sales price of the domestic like product.^{244 245}

²³⁹ *Derived from* CR/PR at Tables 5.3-5.5, 5.12. As discussed above, ***, an importer of 2,4-D, revised its price and purchase cost data after the hearing with respect to pricing product 1, resulting in changes that largely impacted its purchase cost data. See EDIS Docs 849466 (April 9, 2025) and 848740 (April 11, 2025). In its final comments, Corteva argued that *** revised purchase cost data were inconsistent with other record evidence, including the purchase cost data provided by other importers and import average unit values (“AUVs”), and requested that the Commission exclude *** data from the purchase cost comparison. Corteva Final Cmts. at 1-6. In response, staff created a worksheet excluding *** revised price and purchase cost data. See *generally* Pricing Worksheet, EDIS No. 850356 (Apr. 28-29, 2025). For pricing data, the instances of underselling remain the same with the revised data, but the quantity of subject imports decreased by *** pounds DWAE. *Compare* CR/PR at Table 5.12 *with* Revised Pricing Worksheet at ALT Table 5.12. For purchase cost data, the instances of LDP unit values lower than U.S. prices increased from 9 to 16, and the quantity of subject imports increased by *** pounds DWAE. *Compare* CR/PR at Table 5.14 *with* Pricing Worksheet at ALT Table 5.14.

²⁴⁰ Pricing data excluding *** show that subject imports undersold the domestic like product in 17 of 29 available quarterly comparisons, involving *** pounds DWAE of subject imports, at margins ranging from *** percent to *** percent, and averaging *** percent. Pricing Worksheet at ALT Tables 5.3, 5.12. Subject imports oversold the domestic product in the remaining 12 quarterly comparisons, involving *** pounds DWAE at overselling margins that ranged from *** percent to *** percent, and averaging *** percent. *Id.* Thus, subject imports undersold the domestic like product in *** percent of available comparisons, with *** percent of the reported sales volume of subject imports in the quarters showing underselling. *Derived from id.*

²⁴¹ CR/PR at Table 5.13; Pricing Worksheet ALT Table 5.13. There were eight instances of overselling in 2023, compared to five instances in 2021 and four instances in 2022. *Id.* There were seven instances of overselling in 2022, compared to two instances in 2021 and three instances in 2023. *Id.*

²⁴² CR/PR at Tables 5.6, 5.15.

²⁴³ CR/PR at Tables 5.6, 5.15.

²⁴⁴ *Derived from* CR/PR at Tables 5.6, 5.15.

²⁴⁵ Purchase cost data excluding *** show that the LDP costs for subject imports were below the sales price for the domestic like product in all 16 available quarterly comparisons, involving *** pounds DWAE of subject merchandise at price-cost differentials ranging from *** percent to *** percent, and averaging *** percent during the POI. See Pricing Worksheet at ALT Table 5.14.

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. Although three of four importers reported incurring additional costs beyond the LDP costs associated with importing 2,4-D, only one importer, ***, quantified the additional costs it incurred, which consisted of costs *** percent beyond the LDP costs.²⁴⁶ *** also reported that its cost of importing 2,4-D was *** percent lower than its cost of purchasing the domestic like product.²⁴⁷ However, *** ascribed the large majority of these costs to extra production costs occasioned by the ***. We do not see these as costs of directly importing, as *** would have incurred the same extra production costs if it purchased from an unrelated importer. Therefore, ***'s estimation of additional costs did not affect our evaluation of purchase cost differentials.

We have also considered information regarding lost sales. Six of 15 purchasers reported purchasing subject imports instead of the domestic like product during the POI.²⁴⁸ Five of these purchasers reported that subject imports were priced lower than the domestic like product, with two reporting that they purchased subject imports instead of the domestic like product based on price, accounting for *** pounds DWAE.²⁴⁹

Based on the at least moderate-to-high degree of substitutability between cumulated subject imports and domestic like product, the importance of price in purchasing decisions, the pricing product and purchase cost data, and lost sales data showing that purchasers reporting subject imports were lower priced, we find that cumulated subject imports significantly undersold the domestic like product during the POI. The underselling allowed subject imports to capture sales and market share from the domestic industry. Subject imports captured *** percentage points of market share from the domestic industry over the three calendar years,

²⁴⁶ CR/PR at 5.11. *** additional costs include ***, capital costs (*** percent), and an Asian procurement team (*** percent). *Id.* Corteva argues that the added plant and capital costs are unrelated to the importation of 2,4-D, and should not factor into the examination of purchase cost data. Corteva Posthearing Br., Exh. 1 at 23.

Question III-3d of the U.S. importers' questionnaire instructs respondents to report "any additional costs by importing 2,4-D rather than purchasing from a U.S. producer or importer (*e.g.*, logistical or supply chain management costs, warehousing/inventory carrying costs, insurance or other risk management fees, demurrage fees, indirect and overseas costs)." *See* Blank U.S. Importers' questionnaire, EDIS Doc. No. 839707 (Dec. 19, 2024) at Question III-3d.

²⁴⁷ CR/PR at 5.11.

²⁴⁸ CR/PR at Table 5.18.

²⁴⁹ *Derived from* CR/PR at Tables 5.17-5.18. Three responding purchasers, ***, ***, and ***, reported purchasing subject imports due to the lack of availability of the domestic like product. Collectively, these firms accounted for *** percent of reported imports or purchases of 2,4-D during the POI. *Id.*

and the cumulated subject import market share was *** percentage points higher in interim 2024 than it was in interim 2023.²⁵⁰

We have also considered whether subject imports depressed or suppressed domestic producer prices during the POI. Indexed data show that from the first quarter of 2021 through the third quarter of 2023 domestic prices for pricing products 1 and 4 fluctuated upward, with reported prices in the third quarter of 2023 *** and *** percent higher, respectively, than in the first quarter of 2021.²⁵¹ *** did not report any sales past the third quarter of 2023 for pricing products 1 and 4, or any sales whatsoever for pricing products 2 or 3.²⁵² Indexed data show that, on a cumulated basis, subject import prices for product 1 (accounting for the vast majority of subject import quantities reported in the price data) increased from the first quarter of 2021 through the second quarter of 2022, then decreased irregularly by *** percent through the third quarter of 2024.²⁵³ Indexed data also show that, on a cumulated basis, U.S. import purchase costs for product 1 (accounting for all subject import quantities reported in the import purchase cost data) followed a similar trend, and from the second quarter of 2022 through the third quarter of 2024 decreased irregularly by *** percent.²⁵⁴ Consistent with the pricing data, domestic producer and subject import U.S. shipment unit values increased from 2021 to 2022 and declined from 2022 to 2023; domestic producer and subject importer U.S. shipment AUVs further declined in interim 2024.²⁵⁵

The domestic industry's average ratio of COGS to net sales for merchant market shipments exceeded *** percent throughout the POI, resulting in *** operating and net income throughout the POI.²⁵⁶ It increased throughout the POI, from *** percent in 2021 to *** percent in 2022, and *** percent in 2023.²⁵⁷ The increase in the industry's COGS to sales

²⁵⁰ CR/PR at Tables 4.9, C.2. In the total market, the domestic industry lost *** percentage points of market share to cumulated subject imports during the three calendar years, and *** percentage points of market share in interim 2024. *Id.* at Tables 4.8, C.1.

²⁵¹ CR/PR at Table 5.8.

²⁵² CR/PR at Tables 5.3, 5.5.

²⁵³ CR/PR at Table 5.9. The alternative indexed data for cumulated subject import prices for product 1 extend through only the second quarter of 2024, ***. See Pricing Worksheet at ALT Table 5.9. These data similarly show that cumulated subject import prices for product 1 increased from the first quarter of 2021 through the second quarter of 2022, then decreased irregularly through the remainder of the period, specifically, by *** percent from the second quarter of 2022 through the second quarter of 2024. *Id.*

²⁵⁴ CR/PR at Table 5.10. The alternative indexed data show that cumulated subject U.S. importer purchase costs for product 1 followed a similar trend, and from the second quarter of 2022 through the third quarter of 2024 decreased irregularly by *** percent. Pricing Worksheet at ALT Table 5.10.

²⁵⁵ CR/PR at Table C.2.

²⁵⁶ CR/PR at Tables 6.3, C.2.

²⁵⁷ CR/PR at Table 6.3.

ratio from 2021 to 2023 was primarily driven by increasing raw material costs.²⁵⁸ The industry's COGS to sales ratio was *** percentage points higher in interim 2024, at *** percent, than in interim 2023, at *** percent.²⁵⁹ The increase in the domestic industry's COGS-to-net-sales ratio in the interim period was primarily driven by its precipitous drop in volume during that period.²⁶⁰ The industry's unit COGS in the merchant market fluctuated upward during the POI, increasing from \$*** per pound DWAE in 2021 to \$*** per pound DWAE in 2022, and then decreasing \$*** per pound DWAE in 2023, a level *** percent higher than in 2021.²⁶¹ The unit COGS was *** percent higher in interim 2024, at \$*** per pound DWAE, than in interim 2023, at \$*** per pound DWAE.²⁶² The industry's net sales AUVs, reflecting commercial U.S. shipments and swaps, also fluctuated upward, increasing from \$*** per pound DWAE in 2021 to \$*** per pound DWAE in 2022, and then decreasing to \$*** per pound DWAE in 2023, a level *** percent higher than in 2021.²⁶³ Net sales AUVs were *** percent higher in interim 2024, at \$*** per pound DWAE in interim 2024, up from \$*** per pound DWAE in interim 2023.²⁶⁴ Finally, we note that two of 15 responding importers, ***, reported that the domestic

²⁵⁸ CR/PR at Tables 6.3, C.2. Raw materials as a share of COGS rose from *** percent in 2021 to *** percent in 2022, and *** in 2023, a level *** percentage points higher than in 2021. *Id.*

²⁵⁹ CR/PR at Table 6.3. In the total market, Corteva's average ratio of COGS to net sales increased from *** percent in 2021 to *** percent in 2022, and *** percent in 2023. CR/PR at Tables 6.1, C.1. It was *** percent in interim 2024, compared to *** percent in interim 2023. *Id.*

²⁶⁰ CR/PR at Table 6.3. Corteva reported *** pounds DWAE of commercial U.S. shipments and swap shipments in interim 2024, accounting for only *** percent of apparent U.S. consumption in this period. *Id.* at Tables 3.8, 6.3, C.2. In the total market, Corteva reported *** pounds DWAE of U.S. shipments in this period, including its internal consumption, accounting for *** percent of apparent U.S. consumption, down from *** percent in interim 2023. *Id.* at Tables 3.8, 6.1, C.1.

²⁶¹ CR/PR at Tables 6.3, 6.4, C.2.

²⁶² CR/PR at Tables 6.3, 6.4, C.2.

²⁶³ CR/PR at Tables 6.3, 6.4, C.2.

²⁶⁴ CR/PR at Tables 6.3, 6.4, C.2. In the total market, unit COGS fluctuated upwards from 2021 to 2023, increasing from \$*** per pound DWAE in 2021 to \$*** per pound DWAE in 2022, then decreasing to \$*** per pound DWAE in 2023, a level *** percent higher than in 2021. CR/PR at Tables 6.1-6.2. It was *** percent lower in interim 2024, at \$*** per pound DWAE, than in interim 2023, at \$*** per pound DWAE. *Id.* Corteva's net sales AUV declined irregularly by *** percent during the three calendar years, increasing from \$*** per pound DWAE in 2021 to \$*** per pound DWAE in 2022, then decreasing to \$*** per pound DWAE in 2023, a level *** percent lower than in 2021. *Id.* It was *** percent lower in interim 2024, at \$*** per pound DWAE, than in interim 2023, at \$*** per pound DWAE. *Id.* Accordingly, Corteva's net sales AUV in the total market exceeded unit COGS from 2021 to 2022, before being overtaken by unit COGS through the remainder of the POI. *Id.*

industry reduced prices to compete with lower-priced imports from China and India during the POI.²⁶⁵

Respondents argue that the market share shift from Corteva to cumulated subject imports observed during the investigation period – *** percentage points during the full calendar years of the period, and a *** percentage point difference across interim periods – reflects a business decision by Corteva to exit the merchant market for 2,4-D to prioritize internal consumption of the domestic like product to produce higher-value end-use herbicides.²⁶⁶ In response, Corteva contends that, beginning in late 2022, prices for subject imports decreased to such an extent that it could not profitably sell into the merchant market as prices for cumulated subject imports decreased to such an extent as to be below Corteva’s variable costs and thus below the “shutdown point” of a rational producer.²⁶⁷ Accordingly, Corteva submits that underselling by cumulated subject imports drove the large market share shift observed over the investigation period.²⁶⁸

As discussed further below in section V.E., we find speculative and unpersuasive respondents’ claim that Corteva voluntarily chose to exit the merchant market for 2,4-D during the investigation period.²⁶⁹ Although the record reflects, as Corteva acknowledges, that Corteva in 2021 and 2022 experienced supply constraints owing to the impact of the COVID-19

²⁶⁵ CR/PR at 5.2. These importers reported estimated price reductions of *** percent. *Id.* Eight and nine purchasers reported that they did not know whether Corteva reduced prices to compete with lower-priced subject imports from China and India, respectively. *Id.*

Drexel argues that the Commission should give less weight to the lost volume of *** pounds DWAE reported by ***, as this purchaser did not purchase more than *** pounds DWAE of 2,4-D from Corteva during the POI. Drexel Final Cmts. at 12. We observe that *** reported purchases of 2,4-D from “sources unknown” in its purchaser questionnaire response, specifying in a footnote that it purchased 2,4-D from ***, the latter of whom imported subject imports from China. See *** U.S. Purchasers’ questionnaire at II-1 and II-3c, EDIS Doc. No. 849203 (Feb. 25, 2025). Accordingly, the record provides support for *** lost revenues data. Moreover, as we do not reach any conclusions with respect to price suppression, our conclusion regarding significant underselling does not in any event turn on the data concerning lost revenues.

²⁶⁶ See, e.g., BPI-Gordon Prehearing Br. at 31-32; Drexel Posthearing Br., Exh. 1 at 37-38.

²⁶⁷ Corteva Prehearing Br. at 41-45; Corteva Posthearing Br., Exh. 1 at 1-6; see also Tr. (Cannistra) at 9. (“There will be discussion about Corteva leaving the market, but does a producer really leave a market, or are they forced out of a market when prices fall below variable cost. When prices fall that low, and Corteva’s well aware of how far prices have fallen, declining of sales will not only result in a loss, but it is not refusing a sale. It is an exercise of rational business decisions.”).

²⁶⁸ Corteva Prehearing Br. at 41-45.

²⁶⁹ See our evaluation of impact in section V.E.

pandemic and the Texas Freeze of 2022,²⁷⁰ the record does not substantiate respondents' position that Corteva voluntarily chose to exit the merchant market for 2,4-D at any point during the period of investigation or that Corteva's downstream business in higher-value end-use herbicides caused Corteva to do so.²⁷¹ Rather, the record evidence indicates that cumulated subject imports (which most market participants agree are always or frequently interchangeable with the domestic like product) undersold the domestic like product throughout the period of investigation, particularly so in 2023 and interim 2024.²⁷² As mentioned above and discussed further below, prices for cumulated subject imports declined precipitously after the fourth quarter of 2022 when Corteva attests to having determined that such prices precluded its ability to profitably sell into the merchant market,²⁷³ and Corteva's capacity utilization decreased significantly in 2023 and interim 2024,²⁷⁴ indicating that Corteva maintained ample unused capacity with which to serve the merchant market and meet its internal consumption needs but for cumulated subject imports' underselling. Respondents' speculation that, notwithstanding the foregoing, Corteva endeavored to exit the merchant market for unrelated reasons is unsubstantiated and thus unavailing.

To elaborate, we observe that the available price data show that prices for cumulated subject imports decreased substantially during the latter half of the period. As discussed above, the indexed price and import purchase cost data show that on a cumulated basis, subject import prices and U.S. import purchase costs for product 1 (2,4-D acid) decreased by

²⁷⁰ CR/PR at 2.7; Corteva Posthearing Br., Exh. 20 (Corteva's monthly production and supply constraints); Hearing Tr. (Ericson) at 45-46 ("So maybe to go back a little bit prior to 2023. First, explaining what happened in '21 and '21 that maybe gave the perception that you were leaving the market. So there was COVID, which put some pressure on a lot of the raw materials in the overall market. But even that alone didn't necessarily impact our capacity to a point where we couldn't meet technical as well as our own formulated sales. What did occur was a freeze in Texas, and that put the entire industry under pressure. We weren't able to get all of the raw materials that we needed to operate at full capacity and meet more than some of our more internal formulation needs. So we shared with our partners, was we're going to prioritize our internal formulations right now to help you get set up with other partners that can help you meet your customers' needs as well. We wanted to take care of them so that they were able to meet the farmers' needs. . . . That's what the perception that maybe we were stepping back from the market, is because there was a raw material shortage that didn't allow us to meet our customers' needs. Going into 2023 as that raw material shortage was resolved, as we continued to come out of the Texas freeze, we could see the pricing in the market. We knew we were not going to be competitive with the Indian and Chinese products that had come in to take our place.").

²⁷¹ See, e.g., BPI-Gordon Prehearing Br. at 31-32; Drexel Posthearing Br., Exh. 1 at 37-38.

²⁷² CR/PR at Table 5.13.

²⁷³ CR/PR at Tables 5.3, 5.6, 5.9-5.10; Pricing Worksheet at ALT Tables 5.3, 5.6, 5.9-5.10.

²⁷⁴ CR/PR at Tables 3.4, C.1.

*** percent and *** percent, respectively, from the second quarter of 2022 through the third quarter of 2024.²⁷⁵ These data are consistent with the official import statistics submitted by Petitioner in its post-hearing submission for 2,4-D acid and its salts and esters indicating a 45.1 percent decrease in LDP values for imports from China and India from the fourth quarter 2022 through the third quarter of 2024, including a 52.0 percent decline from the fourth quarter of 2022 to the fourth quarter of 2023.²⁷⁶ Likewise, the AUVs for U.S. shipments of subject imports decreased by *** percent from *** in 2022 to *** in 2023 and were down *** percent across interim periods (from *** in interim 2023 to *** in interim 2024).²⁷⁷

The record evidence on prices for cumulated subject imports in 2023 and interim 2024 is consistent with Corteva's testimony as to its contemporaneous understanding of those prices. Witnesses for Corteva at the Commission hearing testified, for example, that Corteva monitors export prices for Chinese product and is able to estimate downstream prices paid by importers, and that Corteva also maintains industry intelligence that shares with the company prevailing prices in the U.S. market.²⁷⁸ Witnesses for Corteva further testified before the Commission that, after Corteva's supply constraints in 2021 and 2022 resolved, prices for cumulated subject imports plummeted in 2023 to levels below Corteva's variable costs and eventually even further

²⁷⁵ CR/PR at Tables 5.9, 5.10. The alternative indexed data for cumulated subject import prices for product 1 extend through only the second quarter of 2024, ***. See Pricing Worksheet at ALT Table 5.9. The alternative indexed data for cumulated subject import prices for product 1, which extend through only the second quarter of 2022, show that cumulated subject import prices for product 1 increased from the first quarter of 2021 through the second quarter of 2022, then decreased irregularly through the remainder of the period, specifically, by *** percent from the second quarter of 2022 through the second quarter of 2024. *Id.* The alternative indexed data show that cumulated subject U.S. importer purchase costs for product 1 followed a similar trend, and from the second quarter of 2022 through the third quarter of 2024 decreased irregularly by *** percent. Pricing Worksheet at ALT Table 5.10.

²⁷⁶ *Calculated from* Corteva Posthearing Br., Exh. 1 at 4; *see also id.*, Exh. 22 (documenting Corteva's USITC Dataweb queries and search results).

²⁷⁷ CR/PR at Table C.2. Notably, demand trends, often an alternative cause of decreasing prices, do not appear to have put significant downward pressure on prices. *Id.* at Table 2.6. Indeed, nearly all firms reported that demand increased or exhibited no change during the investigation period *Id.* Although apparent U.S. consumption in the merchant market decreased modestly by *** percent in 2023, apparent U.S. consumption in the merchant market was up *** percent across interim periods. *Id.* at Table C.2.

²⁷⁸ Tr. at 19 (Ericson) ("So we could see what some of the exports costs are coming out of China. We typically have an estimate of what the difference is between the export cost and what the importers would be paying for that in the market. We also have, what I would say, is industry intelligence that shares with us what we typically are hearing in terms of what those prices would be.").

to below Corteva's raw material costs.²⁷⁹ Corteva's testimony is consistent with the available record evidence reflecting that by the first quarter of 2023 Corteva's unit variable costs exceeded landed duty-paid values for cumulated subject imports as measured either by the import landed duty-paid purchase costs reported by U.S. importers in response to the Commission's questionnaire or by the official import statistics submitted by Petitioner.²⁸⁰ As its

²⁷⁹ Tr. at 19 (Ericson) ("We saw large-scale capacity increases in China and India, right before the COVID period, then again immediately after. Then prices plummeted starting in 2023, not just low but first below our costs, then below our variable costs, then below our raw material costs."); (Ericson) at 59 ("I would say our prices were well above in a market where typically cents matter. Pennies would matter in terms of the quotes that you would bring forward. I would say we were dollars out of the market. So significantly above the prices that we would see in the market."); *id.* ("So we could see what some of the exports costs are coming out of China. We typically have an estimate of what the difference is between the export cost and what the importers would be paying for that in the market. We also have, what I would say, is industry intelligence that shares with us what we typically are hearing in terms of what those prices would be."). Corteva supported this testimony with data from the record. In particular, Corteva provided unit value comparisons of f.o.b. pricing from official import statistics and LDP data with its raw material, labor costs, and the "variable part of other factory costs" showing subject import prices below its variable cost of production. Corteva Prehearing Br. at 44-45; Corteva Posthearing Br., Exh. 1 at 1-6.

²⁸⁰ Corteva Posthearing Br., Exh. 1 at 5-6. We acknowledge that Corteva's variable cost is based on its unit COGS, and in particular a single-year estimate that *** percent of its unit other factory costs were variable costs, and that there is a product mix issue in comparing Corteva's costs with prices for cumulated subject imports. See *** U.S. Producers' questionnaire at III-9d; see also Corteva Posthearing Br., Exh 1 at 5-6. We consider that these data reflect that best available record information with which to assess Corteva's variable costs, and Respondents do not contest Corteva's estimate that *** percent of its other factory costs comprise variable costs. We note that other factory costs in total accounted for *** percent of Corteva's total unit COGS in 2023, so unit COGS consist largely of variable costs. See CR/PR at Table 6.3.

With respect to product mix, the available data indicate that the *** of U.S. shipments of cumulated subject imports were of 2,4-D acid, whereas the *** of U.S. producers' U.S. shipments of the domestic like product were of 2,4-D salts and esters, which are downstream of 2,4-D acid. *Id.* at Table D.15. However, we note that the available data also reflect a relatively limited value added of converting 2,4-D acid into 2,4-D salts and esters, ranging between *** percent and *** percent during the investigation period. *Id.* at Table D.6.

In comparing, for example, for interim 2024 Corteva's unit COGS for its total market shipments, *i.e.*, of ***, with the AUV of U.S. shipments of subject imports, *i.e.*, of ***, cumulated subject imports were priced *** percent lower than Corteva's unit COGS for its total market shipments. Compare *id.* at Tables 6.1, C.1 (Corteva total market unit COGS in interim 2024 at \$*** per pound DWAE), with *id.* (AUV U.S. shipments of subject imports in interim 2024 at \$*** per pounds DWAE). Assuming *arguendo* that these are unit COGS entirely for salts/esters and then deflating the unit COGS for salts/esters by the value addition that pertains to converting 2,4-D acid into salts/esters, the unit COGS for 2,4-D acids would be estimated to fall within a range of ***, which is still above the \$*** per pound AUV of U.S. shipments of subject imports in interim 2024.

supply constraints subsided, Corteva reported available capacity in 2023 and interim 2024.²⁸¹ As apparent U.S. consumption increased by *** percent in the total market from 2021 to 2023 and by *** percent over the interim periods, Corteva’s production quantity declined by *** percent, from *** pounds DWAE in 2021 to *** pounds DWAE in 2023, and then from *** pounds DWAE to *** pounds DWAE over the interim periods.²⁸² With Corteva’s practical capacity largely steady (increasing by only *** percent between 2021 and 2023),²⁸³ Corteva’s capacity utilization dropped *** percentage points from *** percent in 2021 to *** percent in 2023, and then to *** percent in interim 2024.²⁸⁴

In sum, we find that cumulated subject imports significantly undersold the domestic like product, gaining market share at the expense of the domestic industry during the POI, to the point of pricing Corteva out of the market in interim 2024. On this basis, we find that cumulated subject imports had significant price effects.

E. Impact of the Subject Imports²⁸⁵

Section 771(7)(C)(iii) of the Tariff Act provides that examining the impact of subject imports, the Commission “shall evaluate all relevant economic factors which have a bearing on

²⁸¹ PBI Gordon disputes these data on a number of different bases. It argues, based on public information, that Corteva’s reported production declines do not align with its production of hydrochloric acid, a necessary byproduct of its DCP production, or the increasing acreage of farmland reported as containing Enlist™ seeds. PBI-Gordon Posthearing Br. at 7-8. We are unpersuaded by these arguments. Staff did not collect production data on Corteva’s production of DCP, which is not within the scope of these investigations. Moreover, we lack information necessary to allow us to derive 2,4-D production data from information concerning acreage planted with Enlist™ seeds.

²⁸² CR/PR at Table C.1.

²⁸³ Corteva’s practical capacity increased from *** pounds DWAE in 2021 to *** pounds DWAE in 2023 and was steady across interim periods at *** pounds DWAE. CR/PR at Table C.1.

²⁸⁴ CR/PR at Table C.1.

²⁸⁵ The statute instructs the Commission to consider the “magnitude of the dumping margin” in an antidumping proceeding as part of its consideration of the impact of imports. 19 U.S.C. § 1677(7)(C)(iii)(V). In its final determination with respect to 2,4-D from China, Commerce found an antidumping duty margin of 127.21 percent for imports from the China-wide entity. *See* 90 Fed. Reg. 14,964 (Apr. 7, 2025); CR/PR at Table 1.4. In its final determination with respect to 2,4-D from India, Commerce found antidumping duty margins of 6.10 to 25.85 percent. *See* 90 Fed. Reg. 14,969 (Apr. 7, 2025); CR/PR at Table 1.5. We take into account in our analysis the fact that Commerce has made final findings that all subject producers in China and India are selling subject imports in the United States at LTFV. In addition to this consideration, our impact analysis has considered other factors affecting domestic prices. Our analysis of the significant underselling of subject imports, described in both the price effects discussion and below, is particularly probative to an assessment of the impact of the subject imports.

the state of the industry.”²⁸⁶ These factors include output, sales, inventories, capacity utilization, market share, employment, wages, productivity, gross profits, net profits, operating profits, cash flow, return on investment, return on capital, ability to raise capital, ability to service debts, research and development, and factors affecting domestic prices. No single factor is dispositive and all relevant factors are considered “within the context of the business cycle and conditions of competition that are distinctive to the affected industry.”²⁸⁷

The domestic industry’s performance declined during the POI according to most measures, driven by the domestic industry’s declining sales volume and market share. The domestic industry’s practical capacity increased irregularly by *** percent during the full calendar year period, decreasing from *** pounds DWAE in 2021 to *** pounds DWAE in 2022, then increasing to *** pounds DWAE in 2023.²⁸⁸ It was *** across the interim periods, at *** pounds DWAE.²⁸⁹ The domestic industry’s production decreased irregularly by *** percent during the three calendar years, increasing from *** pounds DWAE in 2021 to *** pounds DWAE in 2022, then decreasing to *** pounds DWAE in 2023.²⁹⁰ It was *** percent lower in interim 2024, at *** pounds DWAE, than in interim 2023, at ***.²⁹¹ The industry’s capacity utilization declined irregularly by *** percentage points during the three calendar years, increasing from *** percent in 2021 to *** percent in 2022, then decreasing to *** percent in 2023.²⁹² It was *** percentage points lower in interim 2024, at *** percent, than in interim 2024, at *** percent.²⁹³

The domestic industry’s number of PRWs was flat throughout the POI at ***.²⁹⁴ Total hours worked increased by *** percent during the three calendar years, increasing from ***

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

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

²⁸⁸ CR/PR at Tables 3.4, C.1.

²⁸⁹ CR/PR at Tables 3.4, C.1.

²⁹⁰ CR/PR at Tables 3.4, C.1.

²⁹¹ CR/PR at Tables 3.4, C.1.

²⁹² CR/PR at Tables 3.4, C.1.

²⁹³ CR/PR at Tables 3.4, C.1.

²⁹⁴ CR/PR at Table 3.13. Corteva also reported employment data for its DCP production facility in Freeport, Texas. *Id.* at Table 3.14. It employed between *** and *** employees at that facility during the POI. *Id.* Collectively, Corteva employed between *** and *** between its Midland and Freeport facilities. *Id.* at Table 3.15.

hours in 2021 to *** hours in 2022 and 2023.²⁹⁵ The number of PRWs was *** percent lower in interim 2024, at *** hours, than in interim 2023, at *** hours.²⁹⁶ Wages paid increased irregularly by *** percent during the three calendar years, increasing from \$*** in 2021 to \$*** in 2022, then decreasing to \$*** in 2023.²⁹⁷ They were *** percent lower in interim 2024, at \$***, compared to \$*** in interim 2023.²⁹⁸ Productivity (in pounds per hour) decreased during the three calendar years, from *** pounds per hour in 2021 to *** pounds per hour in 2022, then *** pounds per hour in 2023.²⁹⁹ It was *** percent lower in interim 2024, at *** pounds per hour, than in interim 2023, at *** pounds per hour.³⁰⁰

The domestic industry's U.S. shipments to the merchant market declined by *** percent during the three calendar years, from *** pounds DWAE in 2021 to *** pounds DWAE in 2022, and *** pounds DWAE in 2023.³⁰¹ They were *** percent lower in interim 2024, at *** pounds DWAE, than in interim 2023, at *** pounds DWAE.³⁰² The industry's share of apparent U.S. consumption in the merchant market declined by *** percentage points during the three calendar years, from *** percent in 2021 to *** percent in 2022, and *** percent in 2023.³⁰³ It was *** percentage points lower in interim 2024, at *** percent, than in interim 2023, at *** percent.³⁰⁴

The domestic industry's end-of-period inventories declined by *** percent during the three calendar years, from *** pounds DWAE in 2021 to *** pounds DWAE in 2022, and *** pounds in 2023.³⁰⁵ They were *** percent lower in interim 2024, at *** pounds DWAE, than in interim 2023, at *** pounds DWAE.³⁰⁶ As a ratio to total shipments, the domestic industry's end-of-period inventories declined by *** percentage points during the three calendar years,

²⁹⁵ CR/PR at Table 3.13.

²⁹⁶ CR/PR at Table 3.13.

²⁹⁷ CR/PR at Table 3.13.

²⁹⁸ CR/PR at Table 3.13.

²⁹⁹ CR/PR at Table 3.13.

³⁰⁰ CR/PR at Table 3.13.

³⁰¹ CR/PR at Tables 3.8, C.2.

³⁰² CR/PR at Tables 3.8, C.2. In the total market, Corteva's U.S. shipments declined irregularly by *** percent during the three calendar years, increasing from *** pounds DWAE in 2021 to *** pounds DWAE in 2022, then decreasing to *** pounds DWAE in 2023. *Id.* at Tables 3.8, C.1. They were *** percent lower in interim 2024, at *** pounds DWAE, than in interim 2023, at *** pounds DWAE. *Id.*

³⁰³ CR/PR at Tables 4.9, C.2.

³⁰⁴ CR/PR at Tables 4.9, C.2. In the total market, Corteva's market share declined by *** percentage points during the three calendar years, from *** percent in 2021 to *** percent in 2022, and *** percent in 2023. CR/PR at Tables 4.8, C.1. It was *** percentage points lower in interim 2024, at *** percent, than in interim 2023, at *** percent. *Id.*

³⁰⁵ CR/PR at Tables 3.11, C.1.

³⁰⁶ CR/PR at Tables 3.11, C.1.

from *** percent in 2021 to *** percent in 2022, and *** percent in 2023.³⁰⁷ It was *** percentage points lower in interim 2024, at *** percent, than interim 2023, at *** percent.³⁰⁸

The domestic industry's financial indicators also deteriorated during the POI. The industry's net sales revenues for merchant market sales declined by *** percent during the three calendar years, from \$*** in 2021 to \$*** in 2022, and \$*** in 2023.³⁰⁹ They were *** percent lower in interim 2024, at \$***, than in interim 2023, at \$***.³¹⁰ The industry's gross profit for merchant market sales declined irregularly during the POI, decreasing from *** in 2021 to *** in 2022, then increasing to *** in 2023.³¹¹ It was *** in interim 2024, down from *** in interim 2023.³¹² The industry's operating income and net income for merchant market sales declined irregularly during the POI, decreasing from *** in 2021 to *** in 2022, then increasing to *** in 2023.³¹³ They were lower in interim 2024, at ***, than in interim 2023, at ***.³¹⁴ The industry's ratio of operating income to net sales in the merchant market and net income margin for merchant market sales declined throughout the POI, from *** percent in 2021 to *** percent in 2022, and *** percent in 2023.³¹⁵ They were substantially lower in interim 2024, at *** percent, than in interim 2023, at *** percent.^{316 317}

³⁰⁷ CR/PR at Tables 3.11, C.1.

³⁰⁸ CR/PR at Tables 3.11, C.1.

³⁰⁹ CR/PR at Tables 6.3, C.2.

³¹⁰ CR/PR at Tables 6.3, C.2. In the total market, Corteva's net sales revenues declined irregularly by *** percent during the three calendar years, increasing from \$*** in 2021 to \$*** in 2022, then decreasing to \$*** in 2023. They were *** percent lower in interim 2024, at \$***, than in interim 2023, at \$***. CR/PR at Tables 6.1, C.1.

³¹¹ CR/PR at Tables 6.3, C.2.

³¹² CR/PR at Tables 6.3, C.2. In the total market, the Corteva's gross profit declined throughout the POI, from \$*** in 2021 to \$*** in 2022, and *** in 2023. *Id.* It was lower in interim 2024, at ***, than in interim 2023, at \$***. *Id.*

³¹³ CR/PR at Tables 6.3, C.2.

³¹⁴ CR/PR at Tables 6.3, C.2. In the total market, Corteva's operating income and net income declined throughout the POI, from \$*** in 2021 to \$*** in 2022, and *** in 2023. *Id.* They were both lower in interim 2024, at ***, than in interim 2023, at \$***. *Id.*

³¹⁵ CR/PR at Tables 6.3, C.2.

³¹⁶ CR/PR at Tables 6.3, C.2. In the total market, Corteva's ratio of operating income to net sales and net income margin declined throughout the POI, from *** percent in 2021 to *** percent in 2022, and *** percent in 2023. *Id.* They were both lower in interim 2024, at *** percent, than in interim 2023, at *** percent. *Id.*

³¹⁷ The Commission has determined that the best available information with which to value Corteva's internal consumption of the domestic like product in interim 2024 is the AUV of U.S. shipments of imports from all sources in interim 2024. Initially, in the absence of U.S. commercial sales data made during this period, Corteva valued its internal consumption on the basis of the average price of imports of the subject merchandise, which was \$*** per pound DWAE. CR/PR at Tables 3.8, 6.1, C.1. (Continued...)

The domestic industry's capital expenditures increased irregularly by *** percent during the three calendar years, increasing from \$*** in 2021 to \$*** in 2022, then decreasing to \$*** in 2023.³¹⁸ They were *** percent lower in interim 2024, at \$***, than in interim 2023, at \$***.³¹⁹ The domestic industry's net assets declined by *** percent between 2021 and 2023, decreasing from \$*** in 2021 to \$*** in 2022 and \$*** in 2023.³²⁰ The domestic industry's return on assets declined from *** percent in 2021 to *** percent in 2022, and *** percent in 2023.³²¹ Finally, Corteva reported negative effects on investment, growth and development due to subject imports.³²²

We find that cumulated subject imports had a significant adverse impact on the domestic industry. Significant and increasing volumes of cumulated subject imports significantly undersold the domestic like product to a significant degree throughout the POI,

However, after Commerce in its final affirmative determinations in these investigations found that subject imports were dumped in the U.S. market and thus priced below fair value, Corteva in correspondence with Commission staff suggested a number of alternative valuation methods, including the average prices of U.S. shipments of imports, of U.S. swap shipments, and of export prices. See Email Correspondence, EDIS Doc. 848748 (Apr. 15, 2025). We consider the \$*** per pound DWAE AUV of U.S. shipments of imports from all sources to be the most reasonable valuation on record, as this value aligns with other record information on U.S. shipments of 2,4-D from U.S. importer questionnaire responses, including chemical price trends reported in Federal Reserve Economic Data ("FRED"). See Email Correspondence at EDIS Doc. 848748 (Apr. 15, 2025) and staff notes, EDIS Doc. 849446 (Apr. 23, 2025) at 8.

Respondents contend that Petitioner's reported financial performance remains distorted by these valuations. Drexel & Nufarm Prehearing Br. at 48; PBI-Gordon Prehearing Br. at 49-52; PBI-Gordon Posthearing Br. at 13-15. PBI-Gordon further contends that none of Corteva's proposed alternatives resolve the alleged distortions in Corteva's financial data. We disagree. After reviewing email correspondence with Corteva, case records, and publicly available data from FRED on chemical prices trends, Commission staff determined that the AUV U.S. shipments of imports from all sources in interim 2024, which is determined using the data collected in U.S. importer questionnaire responses submitted to the Commission, provided the most reasonable data with which to approximate fair market value. PBI-Gordon and Drexel & Nufarm proposed several alternative valuation methods and argue that the AUV of Corteva's downstream product sales in interim 2023, which is \$*** per pound DWAE, represents the best of these alternatives. See Corteva U.S. producer questionnaire response at II-18; PBI-Gordon Prehearing Br. at 51, Exh. 12; Drexel & Nufarm Prehearing Br., Exh. 21 at 1-2. Commission staff considered this option, but determined that it was inferior to the AUV of U.S. shipments of imports from all sources in interim 2024 because this alternative value derived from prices in 2023, when prices from all sources were markedly higher. CR/PR at Table C.1. Thus, although we have considered respondents' claims and their alternative valuation method, we consider the AUV of U.S. shipments of imports from all sources in interim 2024 to be the best available information.

³¹⁸ CR/PR at Tables 6.7, C.1.

³¹⁹ CR/PR at Tables 6.7, C.1.

³²⁰ CR/PR at Tables 6.7, C.1.

³²¹ CR/PR at Table 6.7.

³²² CR/PR at Tables 6.9-6.10.

and gaining *** percentage points of market share at the expense of the domestic industry during the full calendar years of the period and *** percentage points in interim 2024.³²³ Although the domestic industry was supply constrained in 2021 and 2022 as a result of the COVID-19 pandemic and the Texas Freeze of 2022,³²⁴ beginning in late 2022, when these constraints abated, prices for cumulated subject imports decreased drastically,³²⁵ and underselling by cumulated subject imports accelerated,³²⁶ precluding the domestic industry's ability to sell into the U.S. merchant market at profitable levels and thereby precluding its ability to retake market share.³²⁷ Thus, the domestic industry's production and shipments decreased drastically as a result of significant and increasing volumes of low-priced cumulated subject imports, leading to losses in operating income and deteriorating financial indicators in 2023 and interim 2024, as Corteva's found itself unable to sell profitably into the U.S. merchant market.

As noted above, respondents argue that the large market share shift observed during the POI and resulting declines in Corteva's performance reflect a voluntary decision by Corteva to exit the U.S. merchant market to favor its internal consumption of 2,4-D and its downstream production higher-value end-use herbicides.³²⁸ Indeed, respondents contend that Corteva filed the petitions to these investigations as it voluntarily withdrew from the U.S. merchant market in an effort to choke off the supply of generic 2,4-D-based herbicides that compete with its downstream Enlist™ herbicide platform.³²⁹ Respondents further contend that in voluntarily

³²³ CR/PR at Tables 4.9, C.2. In the total market, the domestic industry lost *** percentage points of market share to cumulated subject imports during the three calendar years, and *** percentage points of market share in interim 2024. *Id.* at Tables 4.8, C.1.

³²⁴ CR/PR at 2.7; Corteva Posthearing Br., Exh. 20 (Corteva's monthly production and supply constraints); Tr. at 45-46 (Ericson).

³²⁵ CR/PR at Table 5.9 (indexed U.S. importer prices decrease by *** percent from 2022 Q4 to 2024 Q3), Figure 5.6, Table C.2 (AUVs of U.S. shipments of cumulated subject imports decrease *** percent from 2022 to 2023 and are *** percent lower in interim 2024 compared to interim 2024); *see also* Tr. (Ericson) at 19.

³²⁶ CR/PR at Table 5.13 (in 2023, underselling in 8 of 11 quarterly comparisons, covering *** pounds DWAE of *** pounds DWAE; in 2022 underselling in 4 of 11 quarterly comparisons, covering *** pounds DWAE of *** pounds DWAE). *See also id.* at Table 5.16 (in 2023, import purchase costs were lower than U.S. price in 2 of 4 quarterly comparisons, covering *** pounds DWAE of *** pounds DWAE; in 2022, import purchase costs were lower than U.S. price in 2 of 8 quarterly comparisons, covering *** pounds DWAE of *** pounds DWAE).

³²⁷ *See, e.g.*, Tr. at 19 (Ericson); *id.* at 59 (Ericson).

³²⁸ *See, e.g.*, BPI-Gordon Prehearing Br. at 31-32; Drexel Posthearing Br., Exh. 1 at 37-38.

³²⁹ *E.g.*, Tr. at 11 (Okun) ("By filing these petitions, Corteva can seal off this essential raw material input to its competitors, ultimately driving them out of business."), at 118 (Bernard) ("Corteva is relying on these petitions to cut off 2,4-D supply and make it harder for converters to compete in what (Continued...)")

withdrawing from the U.S. merchant market for 2,4-D and seeking antidumping and countervailing duty order on subject imports, Petitioner seeks to withhold from U.S converters the remaining upstream supply of 2,4-D needed to produce generic 2,4-D-based herbicides that compete with Corteva's Enlist™ herbicide platform.³³⁰ On a related note, respondents also have posited that Corteva's efforts ultimately may be aimed at increasing sales of its Enlist™ seeds by rendering other seeds unserviceable with the withdrawal of all generic 2,4-D-based herbicides or at halting the future entry of competitor 2,4-D-based seed/herbicide platforms into the seed and herbicide markets.^{331 332}

We find respondents' claims ultimately speculative and unsubstantiated by record evidence. As an initial matter, we reiterate that respondents have not identified a way by which any limitations on competition in the downstream herbicide or seed markets, which are authorized by statute, improperly limit competition between domestic and imported 2,4-D or otherwise affect competition for sales of the upstream 2,4-D. Thus, respondents' claims are

it really cares about, the Enlist herbicide market."), at 150 (Hartman) ("In the downstream products, I think you've heard from the farmers that Corteva has a protected market for pre- and post-emergence downstream. That is not true for burn-down though. For burn-down a farmer can use a generic product, or a farmer can use the Corteva product. . . . So if imports are out of the market, farmers are going to face a choice do they want to go back to tillage, which is not great for the environment, or do they want to use this over-engineered 2,4-D product? So I do think that's a direct answer to the question I think you're trying to get at.").

³³⁰ *E.g.*, Drexel Posthearing Br. at 2-3, Responses to the Commission's Questions at 16; PBI-Gordon Posthearing Br. at 8, Answers to Commissioners' Questionnaires at 10-11.

³³¹ Tr. at 194 (Barham) ("I believe it's more about the future competition in seed that they're trying to block and that – I mean, let's just call it – we haven't said the name, but Bayer, who's their contemporary in the seed business, is coming with a like trait for 2,4-D that was referenced earlier. . . . {W}hen you think about it from an anti-competitive standpoint, what they're really going after in this case is to make it much more difficult for that entity to get their hands on 2,4-D."), at 195 ("There is in '26-'27 new products coming out, as he said, from Bayer. It is not only in a 2,4-D product. It is – what they're doing is they're adding their products now with Roundup, Liberty, dicamba, and 2,4-D. So it will be a product that can have many modes of action versus the Enlist product only has 2,4-D. So that would be something I think that there would be concerns with Corteva as far as if it came through . . ."); Tr. at 195-96 (Jacobson) ("This case hurts Corteva's seed competitors, okay? If duties go into force, if you vote affirmative, it's going to hurt American seed companies that are trying to introduce seeds to this market that would compete with Corteva's 75 percent market share.").

³³² Respondents also cite an ongoing investigation of Corteva's business practices with respect to loyalty payments in the pesticides market by the U.S. Federal Trade Commission and a coalition of state attorneys general as indication that Corteva engages in unfair practices to product downstream end-product sales through manipulation of the agrochemical raw material market. Drexel & Nufarm Prehearing Br. at 3 n.4; Drexel Posthearing Br. at 3-4, Exh. 1 at 22-23. In response, Corteva contends that the investigation at issue is unrelated to 2,4-D and pertains to other active ingredients in some of the marketing programs Corteva operates. Tr. at 83 (Ericson); Corteva Posthearing Br., Exh. 1 at 19-20. The record indicates that this matter does not pertain to the U.S. market for 2,4-D.

relevant to the Commission's analysis only to the extent that, if substantiated, they attenuate competition or otherwise break the causal nexus between the domestic industry's injury and cumulated subject imports. However, we do not find that respondents' arguments substantiate a claim that competition is attenuated or the causal nexus between the domestic industry's injury and cumulated subject imports is broken.

As previously discussed, Corteva has acknowledged and does not contest that supply constraints required the company to prioritize its internal consumption in 2021 and 2022, resulting in an inability to supply downstream converters during this segment of the investigation period.³³³ Although respondents have provided the Commission with evidence of these supply constraints from Corteva in 2021 and 2022 and of the breakdown of their relationships with Corteva thereafter, in the form of sworn testimony and email records, there is no record evidence establishing that these constraints or other considerations reflected a decision on the part of Corteva to exit the U.S. merchant market or otherwise to cease on an ongoing basis any supply of 2,4-D to U.S. converters, nor is there any record evidence from respondents' briefs of supply constraints from Corteva during the critical period at issue, namely, 2023 and interim 2024.³³⁴ Corteva had ample available capacity to both supply 2,4-D for internal consumption as well as supply volume to the merchant market in 2023 and interim 2024.³³⁵ Far from benefiting Corteva, its declining sales to the merchant market in 2023 resulted in declining production and lower levels of capacity utilization. Further, although

³³³ CR/PR at 2.7; Corteva Posthearing Br., Exh. 20 (Corteva's monthly production and supply constraints); Tr. (Ericson) at 45-46 ("So maybe to go back a little bit prior to 2023. First, explaining what happened in '21 and '21 that maybe gave the perception that you were leaving the market. So there was COVID, which put some pressure on a lot of the raw materials in the overall market. But even that alone didn't necessarily impact our capacity to a point where we couldn't meet technical as well as our own formulated sales. What did occur was a freeze in Texas, and that put the entire industry under pressure. We weren't able to get all of the raw materials that we needed to operate at full capacity and meet more than some of our more internal formulation needs. So we shared with our partners, was we're going to prioritize our internal formulations right now to help you get set up with other partners that can help you meet your customers' needs as well. We wanted to take care of them so that they were able to meet the farmers' needs. . . . That's what the perception that maybe we were stepping back from the market, is because there was a raw material shortage that didn't allow us to meet our customers' needs. Going into 2023 as that raw material shortage was resolved, as we continued to come out of the Texas freeze, we could see the pricing in the market. We knew we were not going to be competitive with the Indian and Chinese products that had come in to take our place.").

³³⁴ *E.g.*, PBI-Gordon Prehearing Br., Exh. 2 (affidavit of ***) at paras. 5-18 (***) Tr. at 102 (Wolf), 108 (Barham); Drexel & Nufarm Prehearing Br., Exh. 20; Nufarm Posthearing Br., Exh. 1 (Miranda Decl.); PBI-Gordon Prehearing Br., Exh. 2 (***) Aff.); PBI-Gordon Posthearing Br., Exhs. 1, 3.

³³⁵ CR/PR at Table 3.4. Corteva's practical capacity utilization was *** in 2023 and *** percent in interim 2024. *Id.*

respondents fault Corteva for not actively soliciting orders in 2023 and interim 2024, Corteva has testified that it understood itself to be priced out of the market in view of cumulated subject imports' exceedingly low prices relative to Corteva's cost of production, and U.S. converters similarly were unable to provide the Commission of any evidence of their submitting purchase orders to Corteva in 2023 or interim 2024 or otherwise contacting company representatives about potential sales of 2,4-D.^{336 337} Indeed, were it so that Corteva had voluntarily exited the U.S. merchant market for 2,4-D, underselling by cumulated subject imports would be expected to have abated during this time, rather than accelerated, as it did.³³⁸ Accordingly, we find respondents' claim unsubstantiated, and we do not find that the causal nexus is broken.

We also find unpersuasive respondents' claims that these considerations and others, such as EPA registration requirements for 2,4-D and the various protections afforded Corteva's Enlist™ product platform, attenuated competition between subject imports and the domestic like product during the investigation period. As discussed above in section V.B.4., EPA registration requirements apply equally both to domestic producers of 2,4-D products and to importers of 2,4-D products and do not appear to have halted any potential new entrants to the market during the period.³³⁹ Moreover, a majority of purchasers did not consider patent

³³⁶ Tr. at 209 (Hartman) ("No, {we did not reach to out Corteva to ask for their product}. It was clear that Corteva was exiting supply of 2,4-D acid to PBI. We did not go back to them since the last loads . . .").

³³⁷ On a related note, respondents also cite as evidence of Corteva's exit from the U.S. merchant market evidence that Corteva does not advertise its 2,4-D products, as it previously did as part of Dow Chemical Company. Tr. at 159 (Bernard), 160 (Ragland), 161 (Jacobson); Drexel Posthearing Br., Exh. 1 at 23; Drexel Final Cmts. at 9-10. In response, Corteva contends that it is not industry practice for producers both of active ingredients and of end-use products to advertise for sale the active ingredients, and provides several examples of this effect. Corteva Posthearing Br. at 8-9, Exhs. 15-16 (containing website excerpts). We note both parties' claims and do not regard this issue as particularly probative of Corteva's intent in the U.S merchant market in 2023 and interim 2024 given that it appears that the evidence is mixed.

³³⁸ CR/PR at Table 5.13 (in 2023, underselling in 8 of 11 quarterly comparisons, covering *** pounds DWAE of *** pounds DWAE; in 2022 underselling in 4 of 11 quarterly comparisons, covering *** pounds DWAE of *** pounds DWAE). *See also id.* at Table 5.16 (in 2023, import purchase costs were lower than U.S. price in 2 of 4 quarterly comparisons, covering *** pounds DWAE of *** pounds DWAE; in 2022, import purchase costs were lower than U.S. price in 2 of 8 quarterly comparisons, covering *** pounds DWAE of *** pounds DWAE).

³³⁹ *See* Tr. at 24-28 (Symonds) (contrasting the EPA registration process for in-scope 2,4-D and out-of-scope herbicide formulations, with the latter characterized as more onerous); Drexel Posthearing Br., Exh. 1 at 34 (conceding that EPA regulations and costs apply equally to all suppliers of 2,4-D, but arguing that the need for suppliers to register foreign sources of 2,4-D due to a lack of available domestic supply of 2,4-D disadvantages importers relative to the domestic producer).

protection to have limited participation of imported 2,4-D.³⁴⁰ However, the record evidence establishes that head-to-head competition between the domestic like product and low-priced subject imports occurred throughout most of the POI in the merchant market, enabling subject imports to capture more than *** percentage points of market share from the domestic industry from 2021 to 2023, and between the interim periods.³⁴¹ Accordingly, the record does not support respondents' argument that competition between Corteva and importers of subject 2,4-D was attenuated during the POI.

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, increasing their share of apparent U.S. consumption in the merchant market from *** percent in 2021 and 2022 to *** percent in 2023, and supplying *** percent of the market in interim 2023 and *** percent of the market in interim 2024.³⁴² Accordingly, nonsubject imports started from a far lower base, and remained much lower than subject imports in terms of both volume and merchant market share throughout the POI.³⁴³ Respondents rely on the increase in the volume of nonsubject imports during the POI to support their overarching contention that imports of 2,4-D were pulled into the U.S. market due to Corteva's alleged exit.³⁴⁴ However, the record indicates that the AUVs of nonsubject imports were substantially higher than those of subject imports, as well as the domestic industry's U.S. commercial shipments, throughout the POI.³⁴⁵ Moreover, Corteva's U.S. shipments and U.S. importers' subject imports were *** in acid form in 2023, while *** of importers' nonsubject imports were in ester form, limiting the substitutability of nonsubject imports with domestic 2,4-D relative to subject imports.³⁴⁶ An increase in the volume of higher-priced nonsubject imports indicate that 2,4-D from nonsubject sources may have been pulled

³⁴⁰ See our analysis of substitutability and other conditions in section V.B.4 above.

³⁴¹ See our analysis of price effects in section V.D above.

³⁴² CR/PR at Tables 4.9, C.2.

³⁴³ CR/PR at Tables 4.2, 4.9, C.2.

³⁴⁴ Drexel & Nufarm Prehearing Br. at 37-41; PBI-Gordon Prehearing Br. at 40-42.

³⁴⁵ CR/PR at Table C.2. The AUVs of U.S. shipments of nonsubject imports were \$*** in 2021, \$*** in 2022, \$*** in 2023, \$*** in interim 2023, and \$*** in interim 2024. *Id.* The AUVs of U.S. shipments of subject imports were \$*** in 2021, \$*** in 2022, \$*** in 2023, \$*** in interim 2023, and \$*** in interim 2024. *Id.* The AUVs of Corteva's commercial U.S. shipments and swap shipments in the merchant market were \$*** in 2021, \$*** in 2022, \$*** in 2023, \$*** in interim 2023, and \$*** in interim 2024. *Id.*

³⁴⁶ CR/PR at Table 4.5.

into the market, particularly between 2022 and 2023, when they captured *** percent of market share from the domestic industry. However, we do not consider that this increase had a causal connection with Corteva's declining performance. The increase in high-priced nonsubject imports also does not provide support for respondents' contention that low-priced subject imports in substantially higher volumes were pulled into the market primarily for non-price reasons. In sum, nonsubject imports do not account for the injury to the domestic industry resulting from the market share shift from the domestic industry to importers of subject merchandise.³⁴⁷

Demand trends also do not explain the market share shift from the domestic industry to cumulated subject imports previously discussed. Information on the record indicates that subject imports captured *** percent of market share from the domestic industry from 2021 to 2022, when apparent U.S. consumption increased by *** percent, compared to *** from 2022 to 2023, when the domestic industry lost *** percent of its share of supply to nonsubject imports as apparent U.S. consumption contracted by *** percent.³⁴⁸ Accordingly, demand trends cannot explain the domestic industry's declining performance during the POI.³⁴⁹

VI. Conclusion

For the reasons stated above, we determine that an industry in the United States is materially injured by reason of subject imports of 2,4-D from China and India that are sold in the United States at LTFV and subsidized by the governments of China and India.

³⁴⁷ Trends in the total market were similar during the three calendar years, but diverged in the interim periods. *Compare* CR/PR at Tables 4.2, 4.9, C.2 *with* Tables 4.2, 4.8, C.1. In the total market, nonsubject imports increased their share of apparent U.S. consumption from *** percent in 2021 to *** percent in 2022, and *** percent in 2023. *Id.* at Tables 4.8, C.1. Nonsubject imports supplied *** percent of the market in interim 2024, down from *** percent in interim 2023. *Id.* Nonsubject imports captured *** percentage points of market share from the domestic industry from 2021 to 2023, and lost *** percentage points of market share to subject imports in interim 2024. *Id.*

The AUVs of Corteva's U.S. shipments in the total market were \$*** in 2021, \$*** in 2022, \$*** in 2023, \$*** in interim 2023, and \$*** in interim 2024. CR/PR at Table C.1. The AUVs of U.S. shipments of imports are unchanged between the merchant and total markets. *Id.* at Tables C.1, C.2.

³⁴⁸ CR/PR at Tables 4.9, C.2.

³⁴⁹ Trends in the total market also support this conclusion. *Compare* CR/PR at Tables 4.9, C.2 *with* Tables 4.8, C.1. Subject imports captured *** percent of market share from the domestic industry from 2021 to 2022, when apparent U.S. consumption increased by *** percent, compared to *** in 2022 to 2023, when the domestic industry lost *** percent of its share of supply to nonsubject imports as apparent U.S. consumption contracted by *** percent. *Id.* at Tables 4.8, C.1.

Part 1: Introduction

Background

These investigations result from petitions filed with the U.S. Department of Commerce (“Commerce”) and the U.S. International Trade Commission (“USITC” or “Commission”) by Corteva Agriscience LLC (“Corteva”), 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 1.1 presents information relating to the background of these investigations.^{2 3}

Table 1.1 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’s 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 23, 2024	Commerce’s notices of initiation (89 FR 34200 and 34205, April 30, 2024)
May 20, 2024	Commission’s preliminary determinations (89 FR 45923, May 24, 2024)
September 13, 2024	Commerce’s countervailing duty determinations (89 FR 74906 and 74908)
November 14, 2024	Commerce’s preliminary antidumping duty determinations (89 FR 89963 and 89949); scheduling of final phase of Commission investigations (89 FR 93339, November 26, 2024)
April 1, 2025	Commission’s hearing
April 7, 2025	Commerce’s final determinations (90 FR 14957, 14961, 14964, and 14969)
April 29, 2025	Commission’s vote
May 16, 2025	Commission’s views

¹ See the section entitled “The subject merchandise” in Part 1 of this report for a complete description of the merchandise subject in this proceeding.

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

³ Appendix B presents the witnesses appearing at the Commission’s hearing.

Statutory criteria

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

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

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

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

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

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

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

Organization of report

Part 1 of this report presents information on the subject merchandise, subsidy rates/dumping margins, and domestic like product. Part 2 of this report presents information on conditions of competition and other relevant economic factors. Part 3 presents information on the condition of the U.S. industry, including data on capacity, production, shipments, inventories, and employment. Parts 4 and 5 present the volume of subject imports and pricing of domestic and imported products, respectively. Part 6 presents information on the financial experience of the U.S. producer.⁶ Part 7 presents the statutory requirements and information obtained for use in the Commission's consideration of the question of threat of material injury as well as information regarding nonsubject countries.

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

⁶ Parts 1 through 6 present data defining the U.S. industry as the sole U.S. producer of 2,4-D in acid form. 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. App. D and F present data for the U.S. industry including the trade and financial data from these U.S. converters and include data for the Commission's sufficient production-related activities analysis.

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, products covered by the scope of this proceeding) also submitted U.S. producer questionnaire responses and are referred to throughout this report as “U.S. converters”: Albaugh, LLC (“Albaugh”); Drexel Chemical Company (“Drexel”); Nufarm Americas Inc. (“Nufarm”); and PBI-Gordon Corporation (“PBI-Gordon”). 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 countries⁷ are ***. 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 ***.

⁷ Nonsubject importers listed the following nonsubject import sources: Austria, Brazil, Canada, Colombia, Italy, Mexico, and Poland.

Apparent U.S. consumption for the total market for 2,4-D was approximately *** pounds (\$***) in 2023. Total U.S. shipments of 2,4-D in 2023 were *** pounds (\$***) and accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value. U.S. shipments of imports from subject sources totaled approximately *** pounds (\$***) in 2023 and accounted for *** percent of total apparent U.S. consumption by quantity (*** percent by value). U.S. shipments of imports from nonsubject sources totaled approximately *** pounds (\$***) in 2023 and accounted for *** percent of apparent U.S. consumption of the total market by quantity (*** percent by value).^{8 9}

Summary data and data sources

A summary of data collected in these investigations is presented in appendix C. U.S. industry data are based on the questionnaire response of one firm that accounted for all 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. Parts 1 through 6 and tables C.1 and C.2 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.3 and C.4 in appendix C and appendices D, E, and G. U.S. imports are based on questionnaire responses.

⁸ Apparent U.S. consumption of 2,4-D in the merchant market totaled approximately *** pounds (\$***) in 2023. U.S. producers’ U.S. merchant market shipments of 2,4-D totaled approximately *** pounds (\$***) in 2023 and accounted for *** percent of apparent U.S. merchant market consumption by quantity (*** percent by value). ***. U.S. shipments of imports from subject sources accounted for *** percent of apparent U.S. merchant market consumption by quantity (*** percent by value). U.S. shipments of imports from nonsubject sources accounted for *** percent of apparent U.S. merchant market consumption by quantity (*** percent by value).

⁹ Parts 1 and 4 present data on apparent U.S. consumption and U.S. market shares for 2,4-D defining the U.S. industry as U.S. producer Corteva, the sole U.S. producer of 2,4-D in acid form. Apparent U.S. consumption and shares tables and figures which also include data from U.S. converters as part of the domestic industry are presented in app. 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.¹⁰ 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).

¹⁰ 75 FR 24969, May 6, 2010.

Nature and extent of subsidies and sales at LTFV

Subsidies

On April 7, 2025, Commerce published a notice in the Federal Register of its final determinations of countervailable subsidies for producers and exporters of 2,4-D from China and India.¹¹ Tables 1.2 and 1.3 present Commerce's findings of subsidization of 2,4-D in China and India, respectively.

Table 1.2 2,4-D: Commerce's final subsidy determination with respect to imports from China

Company	Final subsidy Rate (percent ad valorem)
Jiangxi Tianyu Chemical Co., Ltd.	26.50
Shandong Rainbow Agrosiences Co., Ltd.	169.63
All others	26.50

Source: 90 FR 14957, April 7, 2025.

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

Note: Commerce found Tianyu to be cross-owned with the following companies: Thai Harvest Ltd., CAC Nantong Chemical Co., Ltd., and CAC Shanghai International Trading Co., Ltd. Commerce also found Rainbow Agrosiences to be cross-owned with the following companies: Shandong Weifang Rainbow Chemical Co., Ltd., Ningxia Rainbow Chemical Co., Ltd., Shandong Rainbow Investment Co., Ltd., and Shandong Runnong Investment Co., Ltd. The rate for Shandong Rainbow Agrosiences Co., Ltd. is based on facts available with adverse inferences.

Table 1.3 2,4-D: Commerce's final subsidy determination with respect to imports from India

Company	Final Subsidy Rate (percent ad valorem)
Atul Limited	5.29
Meghmani Organics Limited	6.32
All others	5.88

Source: 90 FR 14961, April 7, 2025.

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

Note: Commerce has found the following companies to be cross-owned with Meghmani Organics Limited: Epigral Limited and Matangi Industries LLP.

¹¹ 90 FR 14957 and 14961, April 7, 2025.

Sales at LTFV

On April 7, 2025, Commerce published a notice in the Federal Register of its final determinations of sales at LTFV with respect to imports from China and India.¹² Tables 1.4 and 1.5 present Commerce's dumping margins with respect to imports of product from China and India.

Table 1.4 2,4-D: Commerce's final weighted-average LTFV margins with respect to imports from China

	Weighted-average dumping margin (percent)	Cash deposit rate (adjusted for subsidy offsets) (percent)
China-Wide Entity	127.21	126.58

Source: 90 FR 14964, April 7, 2025.

Note: Commerce determined that the application of facts available with an adverse inference is warranted with respect to mandatory respondent Shandong Weifang Rainbow Chemical Co., Ltd. (Weifang Rainbow). In addition, Commerce found that the application of facts available with an adverse inference is warranted with respect to the other mandatory respondent, Thai Harvest. Accordingly, Commerce does not grant a separate rate to either Weifang Rainbow or Thai Harvest and considers the respondents to be part of the China-wide entity. The rate for the China-wide entity is based on facts available with adverse inferences.

Table 1.5 2,4-D: Commerce's final weighted-average LTFV margins with respect to imports from India

Exporter/producer	Weighted-average dumping margin (percent)	Cash deposit rate (adjusted for subsidy offsets) (percent)
Atul Limited	25.85	20.62
Meghmani Organics Limited	6.10	3.18
All others	15.98	11.90

Source: 90 FR 14969, April 7, 2025.

¹² 90 FR 14964 and 14969, April 7, 2025.

The subject merchandise

Commerce's scope

In the current proceeding, Commerce has defined the scope as follows:¹³

The merchandise covered by this investigation 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 C₈ H₆ Cl₂ O₃.

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 triisopropanolamine 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.

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.

¹³ 90 FR 14957, 14961, 14964, and 14969, April 7, 2025.

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 3808.93.05.¹⁴ 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 (“Section 301”).¹⁵ 2,4-D that is not formulated and imported under 2918.99.2010 is not subject to Section 301 additional duties.

Effective September 1, 2019, merchandise imported under HTS statistical reporting number 2918.99.2010 originating in China became subject additional duties, 7.5 percent ad valorem under Section 301 under heading 9903.88.15.¹⁶

Effective February 4, 2025, product originating in China is subject to an additional 10 percent ad valorem duty under the International Emergency Economic Powers Act (“IEEPA”). On March 4, 2025, the additional tariff rate on products of China was increased from 10 percent to 20 percent.¹⁷ Effective April 7, 2025, all product originating in China is subject to an additional 34 percent ad valorem reciprocal duty under IEEPA and likewise, all product

¹⁴ USITC, HTSUS (2024) Revision 1, USITC Publication 5491, January 2024.

¹⁵ 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. 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.

¹⁶ Section 301 duties under heading 9903.88.15 became effective on September 1, 2019, and were modified on February 14, 2020. 84 FR 43304, 43304-43471; 85 FR 3741, p. 3741. HTSUS (2025) Revision 1, USITC Publication 5587, February 2025, Chapter 99, as provided for in U.S. Note 20(r) to subchapter III and provided for in the subheadings enumerated in U.S. Note and 20(s).

¹⁷ 90 FR 9121; February 7, 2025. See also HTS headings 9903.01.20, 9903.01.21, 9903.01.22, and 9903.01.23, and U.S. notes 2(s) to 2(t) to subchapter III of chapter 99 and related tariff provisions for duty treatment. HTSUS (2025) Revision 1, USITC Publication 5587, February 2025; 90 FR 11426, March 6, 2025.

originating in India was subject to an additional 26 percent ad valorem reciprocal duty.¹⁸ Effective April 9, 2025, all product originating in China is subject to an additional 84 percent ad valorem reciprocal duty under IEEPA. Thereafter, effective April 10, 2025, the reciprocal tariffs on product originating in China were revised to 125 percent.¹⁹ As of April 10, 2025, the reciprocal tariffs on product originating in India were revised to 10 percent.²⁰

The product

Description and applications

2,4-D is an herbicide, and it has action against a variety of broadleaf weeds, but not grasses.²¹ 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.²² 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.^{23 24}

¹⁸ EO 14257, 90 FR 15041, April 7, 2025.

¹⁹ EO 14259, “Amendment to Reciprocal Tariffs and Updated Duties as Applied to Low-Value Imports from the People’s Republic of China,” available online at <https://www.federalregister.gov/public-inspection/2025-06378/china-low-value-imports-into-us-amendment-to-reciprocal-tariffs-and-updated-duties-eo-14259>.

²⁰ Reuters news report, accessed April 11, 2025: “India seeks quick US trade deal as Trump tariffs paused”; retrieved from <https://www.reuters.com/world/india-eyes-quick-trade-deal-with-us-amid-tariff-pause-official-says-2025-04-10/>. White House press release, accessed April 17, 2025: “Modifying Reciprocal Tariffs to Reflect Trading Partner Retaliation and Alignment”; retrieved from <https://www.whitehouse.gov/presidential-actions/2025/04/modifying-reciprocal-tariff-rates-to-reflect-trading-partner-retaliation-and-alignment/>.

²¹ 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>.

²² 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>.

²³ National Pesticide Information Center, “2,4-D,” accessed April 29, 2024, <http://npic.orst.edu/factsheets/24Dgen.html>.

²⁴ Petition, p. 6.

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.²⁵

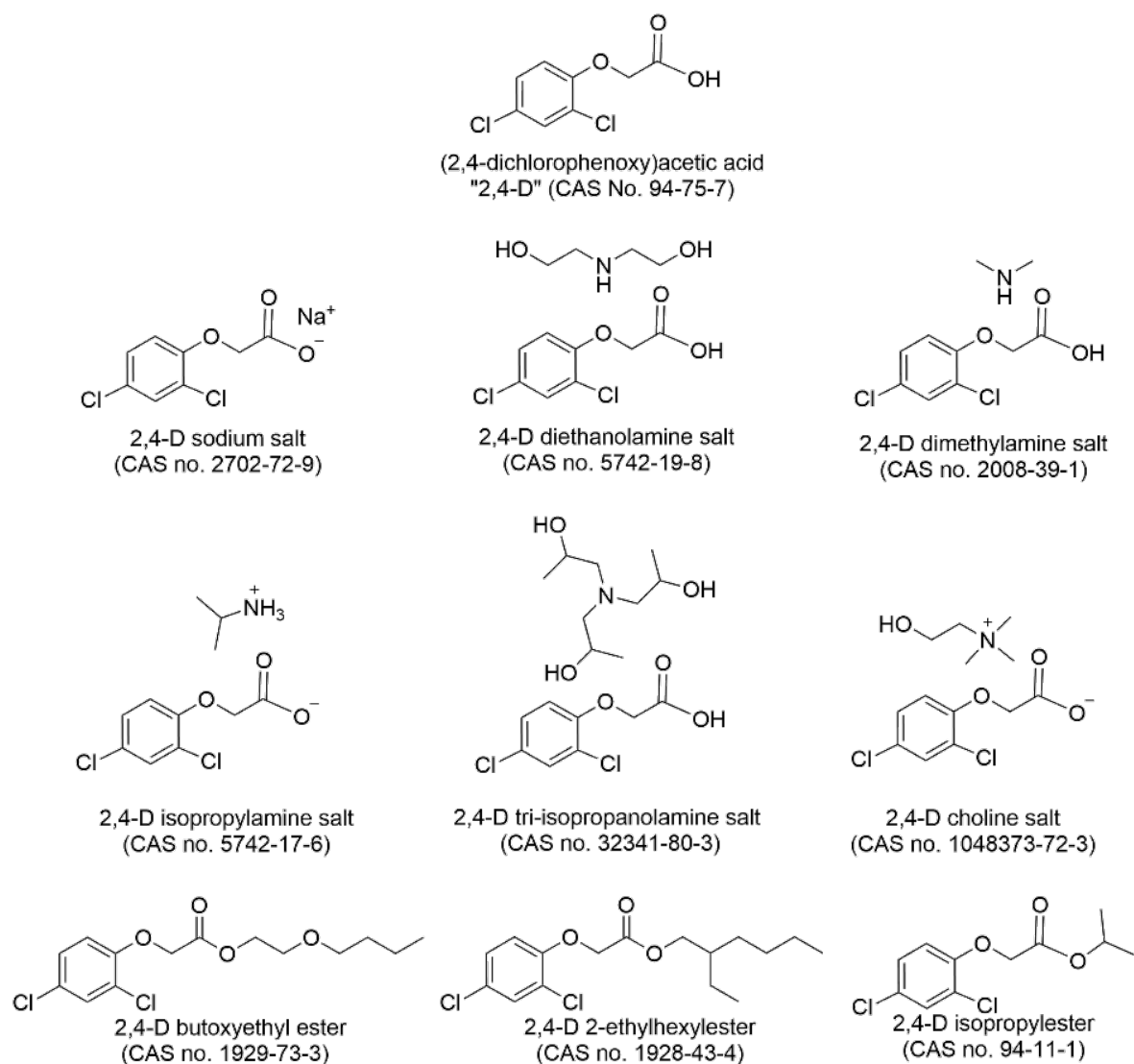
2,4-D must be formulated to readily disperse upon application and to suitably mix with water. Accordingly, it is converted into various derivative forms, including salts and esters. Products containing 2,4-D derivatives, like its salt and ester forms, are blended with other active ingredients, chemicals 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.²⁶ Corteva manufactures a number of 2,4-D formulations such as Enlist One®, Enlist Duo®, Embed Extra® and Freelexx®. Enlist One and Embed Extra both contain the 2,4-D choline salt in similar concentrations (55.7 percent) whereas Enlist Duo is a combination of the 2,4-D choline salt (24.4 percent) and glyphosate (22.1 percent).²⁷

²⁵ 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.>

²⁶ Petition, p. 6.

²⁷ Corteva press release, accessed February 25, 2024: [Corteva Agriscience Announces Availability of PowerCore® Enlist® Refuge Advanced® Corn](#); Michigan State University news update, accessed February 25, 2024: [New 2,4-D formulation offers greater safety for berries, tree fruit and nut tree crops - Fruit & Nuts](#); Corteva product labels, accessed January 30, 2025 from [Enlist One® Herbicide with Colex-D | Corteva Agriscience™](#) [Enlist Duo® herbicide | Enlist® weed control system](#); [Embed® Extra Herbicide | Corteva Agriscience™](#) [Freelexx® Herbicide — Land Management](#); As per Corteva’s user agreement, following [burndown](#), Enlist Duo® and Enlist One® herbicides with Colex-D® technology are the only herbicides containing 2,4-D that are authorized for preemergence and postemergence use with Enlist® corn and soybeans; Seed Legal Information, accessed on April 16, 2025, <https://innvictis.com/Seed-Legal-Information#:~:text=Go%20to%20corteva.us%2FResources%2Ftrait-stewardship.html%20to%20download%20the%20latest%20Corteva,unlawful%20to%20save%20and%20replant%20Enlist%20E3%C2%AE%20soybeans.>

Figure 1.1 In-scope products

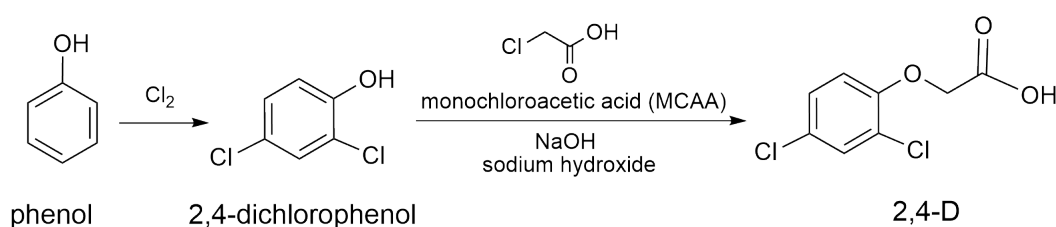


Source: Petition, p. 8; Pubchem <https://pubchem.ncbi.nlm.nih.gov>.

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.²⁸ Raw materials used in Corteva's process include phenol, chlorine, and 2,4-dichlorophenol.²⁹ Figure 1.2 shows the manufacturing process chemical reaction for the preparation of 2,4-D.

Figure 1.2 Preparation of 2,4-D



Source: Adapted from the petition and PubChem <https://pubchem.ncbi.nlm.nih.gov>.

Note: Manufacturing process used by Corteva, where Cl_2 is chlorine.

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.³⁰ Esters are formed when the 2,4-D acid reacts with an alcohol.³¹ The salt or ester forms of 2,4-D are selected due to the desired end use application. Figure 1.3 shows the manufacturing process chemical reaction for the preparation of the 2,4-D ethylhexyl ester.

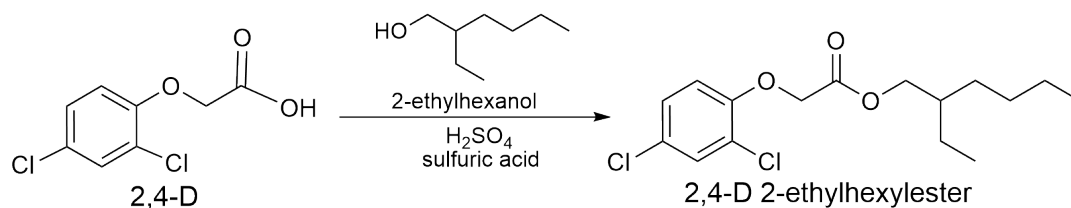
²⁸ The record lacks information concerning which method the producers in India are using. Conference transcript, pp. 76 to 78 (Garcia de Alba).

²⁹ Conference transcript, pp. 17 and 70 (Garcia de Alba).

³⁰ An amine is any member of a family of nitrogen-containing organic compounds that is derived from ammonia (NH_3).

³¹ 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.

Figure 1.3 Preparation of the 2,4-D ethylhexyl ester

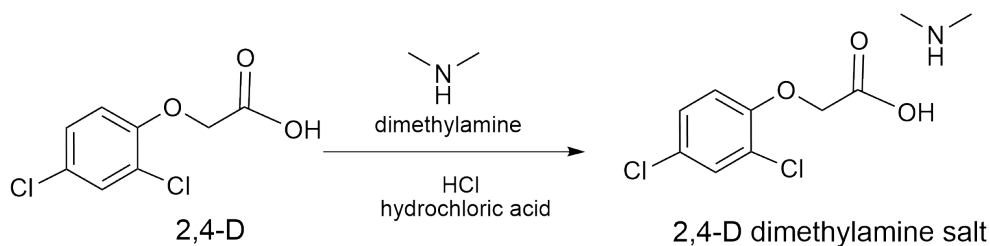


Source: Adapted from the petition and PubChem <https://pubchem.ncbi.nlm.nih.gov>.

Note: The 2,4-D ethylhexyl ester is manufactured by Corteva, Drexel, and Nufarm.

Figure 1.4 shows the reaction between 2,4-D and dimethylamine to produce the 2,4-D dimethylamine salt.

Figure 1.4 Preparation of the 2,4-D dimethylamine salt



Source: Adapted from the petition and PubChem <https://pubchem.ncbi.nlm.nih.gov>.

Note: The 2,4-D dimethylamine salt is manufactured by Corteva, Drexel, and PBI-Gordon.

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.³² 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 to 95 percent of global 2,4-D use.³³

³² Petition, p. 8.

³³ Petition, p. 7.

Domestic like product issues

During the preliminary phase of these investigations, the petitioner argued that the Commission should define a single domestic like product consisting of 2,4-D coextensive with the scope of the investigations. Respondents Drexel, Nufarm, and PBI-Gordon did not contest the domestic like product definition proposed by petitioner in the preliminary investigations. Respondent Atul Ltd. and Atul USA (“Atul”) characterized 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. In response to Atul’s arguments the Commission conducted a semi-finished like product analysis, pursuant to which the Commission determined to define a single domestic like product consisting of all 2,4-D, coextensive with the scope of the investigations.³⁴

The Commission received comments on the draft questionnaires for the final phase of this proceeding from the petitioner, Drexel, and PBI-Gordon, and none of these parties argued that the Commission should define a separate domestic like product or requested that the Commission collect data separately for alternate domestic like product definitions.

In its prehearing brief, the petitioner argued the Commission should continue to conclude that 2,4-D acid as well as its salts and esters constitute a single domestic like product.³⁵ Respondent PBI-Gordon argued in its prehearing brief that the Commission should continue to conclude that the domestic like product is defined as coextensive with the scope of the investigations and should include all 2,4-D products at different stages of processing.³⁶ Respondents Drexel and Nufarm stated in their prehearing brief that Commission should define a single domestic like product, coextensive with the scope, as it did in the preliminary phase of the investigations.³⁷

³⁴ Investigation Nos. 701-TA-710-711 and 731-TA-1673-1674 (Preliminary): 2,4-Dichlorophenoxyacetic Acid (“2,4-D”) from China and India, Publication 5511, May 2024, pp. 9 to 14.

³⁵ Petitioner’s prehearing brief, pp. 4 to 7.

³⁶ Respondent PBI-Gordon’s prehearing brief, pp 3 to 7.

³⁷ Respondent Drexel and Nufarm prehearing brief, pp. 5 to 8.

Part 2: 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. 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. Agricultural and plant applications are the primary use for 2,4-D with other end uses including turf, lawns, aquatic sites, and forestry sites.¹

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.² 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.³

U.S. producer Corteva indicated that the market *** to distinctive conditions of competition. Six of 8 importers and 6 of 15 purchasers indicated that the market was subject to distinctive conditions of competition. Specifically, importers identified cost/price demand, including the impact from import freight expenses, global production capacities and seasonal factors, and Corteva's exit of the homeowner and recreational turf and ornamental ("T&O") market, patents on Enlist seeds, and EPA registration as distinct conditions of competition. Purchasers identified label claims for end-use product, product availability relative to the application season, weather conditions, high dollar inventory for retailers in a low market, Corteva's patents, and cessation of tech acid sales as distinct conditions of competition.

Apparent U.S. consumption of 2,4-D in the total market increased between 2021 and 2022 and then decreased in 2023. Overall, apparent U.S. consumption in the total market in 2023 was higher than in 2021.

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

² Original publication, p. 2.1.

³ Original publication, p. 2.1.

U.S. purchasers

The Commission received 15 usable questionnaire responses from firms that had purchased 2,4-D during January 2021 to September 2024.⁴ ⁵ ⁶ Seven responding purchasers are distributors, 9 are formulator/converters, and 3 are other.⁷ In general, responding U.S. purchasers were located in the continental United States. The responding purchasers represented firms in a variety of domestic industries, including agriculture, home/lawn care, and chemical converting/formulation industries. Large purchasers of 2,4-D include ***.

Impact of section 301 tariffs⁸

U.S. producers, importers, and purchasers were asked to report the impact of section 301 tariffs on overall demand, supply, prices, or raw material costs (table 2.1). U.S. producer Corteva reported that section 301 tariffs ***, and added that 2,4-D is a list 4-A product with a tariff of 7.5 percent.⁹ The majority of U.S. importers reported that section 301 tariffs had had an impact on the market, and most purchasers reported that ***.

⁴ The following firms provided purchaser questionnaire responses: ***.

⁵ Of the 15 responding purchasers, 8 purchased domestic 2,4-D, 6 purchased imports of the subject merchandise from China, 5 purchased imports of 2,4-D from India, 4 purchased imports of nonsubject sources, and 7 purchased imports of 2,4-D from unknown sources.

⁶ Eleven purchasers indicated they had marketing/pricing knowledge of domestic product, 8 of Chinese product, 7 of Indian product, and 7 of nonsubject countries, including Austria, Australia, Argentina, Colombia, Mexico, and Poland.

⁷ Purchaser ***; purchaser ***, and purchaser *** identified as a distributor/retailer.

⁸ Since the receipt of Commission questionnaires, several additional tariff actions have been announced. See the tariff treatment section in part 1 for additional details.

⁹ Hearing transcript, pp. 38 to 39 (Cannistra).

Table 2.1 2,4-D: Count of firms' responses regarding the impact of the 301 tariffs on Chinese origin products

Firm type	Yes	No	Don't know
U.S. producers	***	***	***
Importers	***	***	***
Purchasers	***	***	***

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

Channels of distribution

U.S. producer Corteva sold exclusively to *** and importers sold mainly to converters/formulators, with the exception of nonsubject producers, which sold mainly to distributors, as shown in table 2.2.

Table 2.2 2,4-D: Share of U.S. shipments by source, channel of distribution, and period

Shares in percent; interim period is January through September

Source	Channel	2021	2022	2023	Interim 2023	Interim 2024
United States	Converters/formulators	***	***	***	***	***
United States	Distributors	***	***	***	***	***
United States	End users	***	***	***	***	***
China	Converters/formulators	***	***	***	***	***
China	Distributors	***	***	***	***	***
China	End users	***	***	***	***	***
India	Converters/formulators	***	***	***	***	***
India	Distributors	***	***	***	***	***
India	End users	***	***	***	***	***
Subject sources	Converters/formulators	***	***	***	***	***
Subject sources	Distributors	***	***	***	***	***
Subject sources	End users	***	***	***	***	***
Nonsubject sources	Converters/formulators	***	***	***	***	***
Nonsubject sources	Distributors	***	***	***	***	***
Nonsubject sources	End users	***	***	***	***	***
All import sources	Converters/formulators	***	***	***	***	***
All import sources	Distributors	***	***	***	***	***
All import sources	End users	***	***	***	***	***

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

Geographic distribution

U.S. producer Corteva reported selling 2,4-D to ***. U.S. importers reported selling 2,4-D to all regions in the contiguous United States (table 2.3). For U.S. producer Corteva, *** percent of sales were within 100 miles of their production facility, *** percent were between 101 and 1,000 miles, and *** percent were over 1,000 miles. Importers sold *** percent within 100 miles of their U.S. point of shipment, *** percent between 101 and 1,000 miles, and *** percent over 1,000 miles.

Table 2.3 2,4-D: Count of U.S. producers' and U.S. importers' geographic markets

Region	U.S. producer	China	India	Subject sources
Northeast	***	1	1	1
Midwest	***	6	4	7
Southeast	***	3	3	3
Central Southwest	***	3	2	3
Mountain	***	1	1	1
Pacific Coast	***	3	2	3
Other	***	0	0	0
All regions (except Other)	***	1	1	1
Reporting firms	1	6	4	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 2.4 provides a summary of the supply factors regarding 2,4-D from U.S. producer Corteva and from subject countries. Combined subject supplier capacity was larger than capacity in the United States. China's exports to the United States accounted for *** percent of Chinese producers' shipments, while those of India accounted for *** percent of Indian producers' shipments. U.S. producer Corteva and *** responding foreign producers reported that they were *** to shift production from 2,4-D to other products.

Table 2.4 2,4-D: Supply factors that affect the ability to increase shipments to the U.S. market, by country

Quantity in 1,000 pounds of dry weight acid equivalent (DWAE); ratio and share 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	Share	***	***	***	***
Non-US export market shipments 2023	Share	***	***	***	***
Ability to shift production (firms reporting “yes”)	Count	***	***	***	***

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

Note: Responding U.S. producer Corteva accounted for *** of U.S. production of 2,4-D in acid form in 2023. Responding foreign producer/exporter firms accounted for *** of U.S. imports of 2,4-D from China and 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 1, “Summary Data and Data Sources.”

Domestic production

Based on available information, U.S. producer Corteva has the ability to respond to changes in demand with moderate 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’s capacity increased slightly 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 used *** of its production for internal consumption. Corteva’s primary export market is ***.

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.¹⁰ 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 ***'s capacity increased by approximately *** percent from 2021 to 2023 and capacity utilization was constant at *** percent across the period. *** 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 capacity increases outpacing production increases, resulting in decreased 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.

¹⁰ 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 *** percent of total U.S. imports by quantity in 2023. Based on official import statistics, the largest sources of nonsubject imports were Germany, the United Kingdom, and Colombia. Combined, these countries accounted for *** percent of nonsubject imports in 2023.

Supply constraints

U.S. producer/importer Corteva reported that it *** experienced supply constraints since January 1, 2021. Four of seven responding importers reported that they had experienced supply constraints since January 1, 2021. Of those that reported they had experienced supply constraints, three importers each reported the constraints occurred during 2021, 2022, and 2023, and 2 importers each reported that they had experienced supply constraints during January 1 – March 14, 2024 and since March 14, 2024 (table 2.5). ***. Corteva stated that it experienced supply constraints due to the impacts of the COVID-19 pandemic and the Texas freeze through 2022.¹¹ Constraints reported by importers included raw material shortages during a key product time, sales allocations when demand exceeded supply and limited production capacity during given periods, and increased demand from Corteva Enlist seed acceptance resulting in increased demand for 2,4-D acid, which importer *** reported was compounded by Corteva's refusal to sell 2,4-D acid.

Nine of 15 responding purchasers reported that they had experienced supply constraints, with 8 reporting supply constraints from domestic producers in 2022 and 2 reported supply constraints from foreign producers or importers in 2023. Constraints purchasers experienced from domestic producers were Corteva phasing out commodity supply to its customers, lack of capacity and focus on Enlist, and from foreign producers or importers were tariff concerns, lack of available product, and receiving product in a slow timeframe.

¹¹ Hearing transcript, p. 49 (Ericson).

Table 2.5 2,4-D: Count of firms' responses regarding timing of supply constraints, by firm type and source

Firm type	Source	2021	2022	2023	2024 pre-petition	2024 post-petition
U.S. producers	Domestic	***	***	***	***	***
Importers	Imported	***	***	***	***	***
Purchasers	Domestic	***	***	***	***	***
Purchasers	Imported	***	***	***	***	***

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

New suppliers

Six of 15 purchasers indicated that new suppliers entered the U.S. market since January 1, 2021. Purchasers cited Atul, FBN, Generic Crop Protection, Meghmani, Sharda, Weifang, and Xinfa.

EPA regulation

U.S. producer Corteva stated that EPA regulations on the use or importation of 2,4-D do not materially impact the sale or production of imported 2,4-D relative to domestically produced 2,4-D.¹² Five of 7 responding U.S. importers reported that EPA regulation on the use or importation of 2,4-D limited entrance or participation in the U.S. 2,4-D market. U.S. importer *** reported that the time to register an establishment with the EPA and to register the supplier as an alternate source on an EPA registered label can be between 6 and 12 months. Importer Drexel stated that EPA regulation costs add into capital investment, and that it pays several million dollars to get its 2,4-D registration.¹³ U.S. importer/purchaser *** reported that only companies that have a 2,4-D technical registration with approved producers can import 2,4-D, and that the process includes a 5 batch analysis, physical and chemical properties, preparation of dossiers, and submission, review, and approval from the EPA, a process which it reports takes between 2 and 3 years. It adds that it cannot add an additional source without following the same process requirements and timeline, and that is illegal to import 2,4-D acid without an active registration and approval for each specific source. U.S. importer/purchaser PBI Gordon stated that it spends a significant amount of its total budget making sure it's registered with its items, and that it shares the cost of the 2,4-D task force with Corteva and spending money to ensure compliance and registration requirements.¹⁴ U.S. producer/importer/purchaser *** reported that the generation of data and studies cost

¹² Hearing transcript, p. 25 (Symonds).

¹³ Hearing transcript, pp. 196 to 198 (Bernard).

¹⁴ Hearing transcript, pp. 137 to 138 (Wolf).

hundreds of thousands to millions of dollars and that additional data generation may be required due to a periodic registration review. It added that the process to register each subsequent manufacturer takes 9 months after the initial technical registration according to the Pesticide Registration Improvement Act timeline, and that a company must also obtain an end-use product registration, which takes between 5 and 12 months.

Patent protections¹⁵

U.S. producer Corteva reported that patent protections on the production, use, or importation of 2,4-D *** limit entrance or participation in the U.S. 2,4-D market and stated that it holds patents on downstream 2,4-D formulations Enlist One and Enlist Duo. It added that Enlist is not the only patented or trademarked formulation on the market that uses 2,4-D as an active ingredient, nor the only formulated product with an over-the-top application for weed control.¹⁶ It also stated that the registration process and fees for a new generic version do not constitute a significant barrier to entry for pure 2,4-D, since it has been registered for many years, and that the process must be followed by both domestic producers and importers. It further stated that technical grade active ingredient (TGA) 2,4-D, should not be conflated with end use products, or out-of-scope formulations.¹⁷

Respondent PBI-Gordon stated that Corteva's Enlist herbicide is sold in conjunction with the Enlist seed, which is resistant to the Enlist herbicide, and that by law, farmers are required to use Enlist in pre-and post-emergence applications when they have planted Enlist seed. It added that farmers normally use generic 2,4-D during the burndown period, which it estimated at 20 percent of a farmer's total annual herbicide use, and that individual states have passed laws banning the off-label use of generic 2,4-D herbicides on Enlist crops.¹⁸

Four of 7 responding U.S. importers and 7 of 15 purchasers reported that patent protections on the production, use, or importation of 2,4-D limited entrance or participation in the U.S. 2,4-D market. U.S. importer *** reported that Corteva developed patented genetically modified crops resistant to the 2,4-D herbicide and coupled with a patented formulation of 2,4-D, the choline salt of 2,4-D known as Enlist One. It added that while choline is not a unique amine base, the U.S. Patent Office unwittingly issued a patent to Corteva for the 2,4-D choline salt based on Corteva's claims that it possessed lower volatility properties as opposed to other

¹⁵ App. E includes data on shipments of downstream formulated products (broken out by patented vs. generic formulations) and the corresponding 2,4-D contents of those shipments.

¹⁶ Hearing transcript, pp. 19 to 22 (Moulin).

¹⁷ Hearing transcript, pp. 24 to 26 (Symonds).

¹⁸ Respondent PBI-Gordon's posthearing brief, pp. 6 and 9.

forms of 2,4-D, and that while that may be true in the laboratory, 2,4-D products are not sold and used in laboratories or controlled environments. *** reported that choline 2,4-D is a salt and will dissociate into its acid and base (anion and cation) components when dissolved in water and that these dissociated components are then free to associate with other anions and cations found in water, application tank mixtures, soil and plant surfaces. It added that the reason the in crop use of 2,4-D on Enlist genetically modified crops has not been causing the widespread drift damage seen with use of dicamba in dicamba genetically modified crops (Xtend) is simple; that 2,4-D is significantly less volatile, 10 times less volatile, less acidic and more tightly bound to soil, than dicamba.¹⁹ Creating institutional barriers through patents, registration data compensation, manipulation of regulations, marketing programs, etc., is part of agricultural multinational chemical companies' post patent strategies. It concludes that, as a consequence of their strategies, Corteva and Syngenta have been under investigation and are now engaged in a lawsuit with the U.S. Federal Trade Commission and numerous states for unfair trade practices for controlling the U.S. agricultural pesticide market. U.S. importer/purchaser *** and importer ***, which reported that the patent protections do not limit or participation in the market, respectively reported that 2,4-D can be produced using off-patent processes and has off-patent uses and *** is not affected by restrictions aside from product shortages due to Corteva's focus on agricultural uses because it operates in the T&O market.

Four of 15 purchasers reported that patent protections on the production, use, or importation of 2,4-D limited entrance or participation in the U.S. 2,4-D market; 10 reported that they did not. Purchaser *** reported that this limitation only applied with respect to choline chemistry (Enlist), while producer/importer/purchaser *** reported that Corteva is the only company with U.S. EPA registrations to sell 2,4-D end use products for over-the-top applications and that its patents and seed license agreements require growers to use Corteva's branded end use products, which means its own 2,4-D end use products cannot compete.

¹⁹ Dicamba is said to "evaporate off crops and drift in the wind, sometimes damaging neighboring crops that lack resistance to it" and some states placed limits around when dicamba can be sprayed on crops. National Corn Growers Association's postconference brief, Exhibit 1. In 2024, in response to the U.S. District Court of Arizona's ruling, the EPA vacated the registrations for dicamba products registered for over-the-top applications on dicamba tolerant cotton and soybeans. EPA, "EPA Provides Update on Over-the-Top Uses of Dicamba", February 14, 2024, <https://www.epa.gov/pesticides/epa-provides-update-over-top-uses-dicamba>.

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 and accounts for a moderate cost share of the cost of the end-use products in which it is used. Reported end uses and cost shares for formulations include: De-amine 4 (60 percent cost share), Defy LV-6 (60 percent cost share), and Triplet SF (a broadleaf herbicide formulated product, 20 percent cost share).²⁰

Business cycles

U.S. producer Corteva indicated that the market for 2,4-D *** subject to business cycles. Seven of 8 responding importers and 10 of 15 purchasers indicated that the market was subject to business cycles. Specifically, firms mentioned seasonality, with *** reporting that over 80 percent of the acres are treated by growers using end-use 2,4-D during April through July, *** reporting that heavy volumes for pesticide products are between March and June, and *** reporting that heaviest use is during weed-growing seasons in the spring and summer time, and that total 2,4-D sales are continuing to increase because competing seeds like glyphosate tolerant and dicamba tolerant seeds are declining due to a class-action lawsuit and EPA and state use restrictions, respectively. Purchasers mentioned that customers typically purchase 2,4-D in the last quarter of the previous year or the first quarter of the same year, that over-the-top application occurs after *** in the spring through summer, during which the volume of Enlist sold increases. Purchaser *** added that most of its 2,4-D is used *** and that if the planting conditions are changed due to weather, the use of 2,4-D could be significantly reduced during the growing season.

Demand trends

Most firms reported that U.S. demand for 2,4-D since January 1, 2021 had steadily increased or fluctuated up; firms also reported that demand had not changed (table 2.6). U.S.

²⁰ One firm reported the homeowner T&O market as an end use, but did not report its cost share.

producer Corteva reported that ***. Importer *** reported that demand has been flat for its market because it services the homeowner turf and ornamental markets. However, it continued, the overall market has increased considerably due to Corteva's introduction of 2,4-D tolerant crops. *** added that this is also purportedly the reason Corteva stopped selling 2,4-D acid into the turf and ornamental market. Purchaser *** reported that demand for 2,4-D increased from January 2021 to January 2022, then decreased in 2023 and, in 2024, demand returned to similar levels as 2021. It attributed swings as driven by increased consumer participation in lawn and garden care during the first two years of the COVID-19 pandemic, followed by a retraction then normalization. U.S. producer/importer/purchaser *** reported that demand for 2,4-D end-use products has steadily increased over the period driven by Corteva launching Enlist traits, and no longer being able to supply the traditional markets for 2,4-D end-use products (e.g., pre-emergent burndown and post-harvest burndown). It also stated that ***.²¹ Similarly, purchaser *** reported that the introduction of Enlist technology caused a steady increase in demand.

Table 2.6 2,4-D: Count of firms' responses regarding overall domestic and foreign demand, by firm type

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

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

Substitute products

Substitutes for 2,4-D are limited. U.S. producer Corteva reported that there *** substitutes. Most importers and purchasers reported that there were no substitutes. Firms reporting substitutes cited Dicamba for burndown/preplant weed control and Penoxsulum for lawns.

²¹ *** posthearing brief, Exhibit 1.1, p. 1.

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. Petitioner Corteva, stated that 2,4-D is highly substitutable, while respondents Drexel and Nufarm stated that the cost of EPA registration and qualification affect substitutability.²² 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.²³ Factors contributing to this level of substitutability include similar quality, similar availability of forms of 2,4-D, and generally high interchangeability between domestic and subject sources. Factors reducing substitutability include a difference in reported lead times from domestic and subject sources, and some significant factors other than price that firms consider, including: patent protections, formulation interchangeability, EPA registration, the reported inability of some importers/purchasers to purchase from domestic producers, the preference for flake or powder 2,4-D acid, and preferences for low odor 2,4-D for home use.

Purchaser decisions based on source

As shown in table 2.7, most purchasers and their customers never make purchasing decisions based on the producer or country of origin. Of the 4 purchasers that reported that they usually make decisions based the manufacturer, reasons cited include: prefer domestic sourcing and supply diversification. Purchaser *** cited quality of product, availability, lead times, and cost, all of which it reports can be influenced by which producer makes the product.

²² Hearing transcript, p. 34 (Cannistra) and pp. 196-198 (Bernard and Dempsey).

²³ 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 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.).

Table 2.7 2,4-D: Count of purchasers' responses regarding frequency of purchasing decisions based on producer and country of origin

Firm making decision	Decision based on	Always	Usually	Sometimes	Never
Purchaser	Producer	1	4	1	9
Customer	Producer	0	1	2	7
Purchaser	Country	0	3	1	9
Customer	Country	0	1	1	7

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

Importance of purchasing domestic product

Eleven of 15 purchasers reported that most or all of their purchases did not require purchasing U.S.-produced product. Three reported that domestic product was required due to use of patented seeds (for *** percent of their purchases), two reported that domestic product was required by law (for *** percent of their purchases), one reported it was required by their customers (for *** percent of its purchases), and one reported other preferences for domestic product (for *** percent of its purchases), stating that it needs product that is registered with the EPA, and ***.

Most important purchase factors

The most often cited top factors firms consider in their purchasing decisions for 2,4-D were price/cost and availability/supply (13 firms each), quality (8 firms), payment terms and credit (four firms) as shown in table 2.8. Availability/supply was the most frequently cited first-most important factor (cited by 5 firms), followed by price/cost and all other factors (3 firms each); price was the most frequently reported second-most important factor (7 firms); and quality was the most frequently reported third-most important factor (5 firms).

Table 2.8 2,4-D: Count of ranking of factors used in purchasing decisions as reported by purchasers, by factor

Factor	First	Second	Third	Total
Availability / Supply	5	4	4	13
Price / Cost	3	7	3	13
Quality	2	1	5	8
Payment terms / Credit	0	3	1	4
Regulatory compliance/registration	2	0	0	2
All other factors	3	0	0	NA

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

Note: Other factors include: strict impurity profile requirements, appropriate label and claims for current needs, and raw material approved for the CSF.

The majority of purchasers (9 of 15) reported that they always or usually purchase the lowest-priced product.

Importance of specified purchase factors

Purchasers were asked to rate the importance of 18 factors in their purchasing decisions (table 2.9). The factors rated as very important by more than half of responding purchasers were: availability and meets regulatory requirements (e.g. EPA, other) (reported by 14 purchasers each), price and quality meets industry standards (13 purchasers each), product consistency and reliability of supply (12 each), and delivery time (10).

Table 2.9 2,4-D: Count of purchasers' responses regarding importance of purchase factors, by factor

Factor	Very important	Somewhat important	Not important
Availability	14	1	0
Availability of flake or powder forms	1	4	9
Compatibility with specific crops planted	6	2	6
Delivery terms	8	6	0
Delivery time	10	4	0
Discounts offered	6	5	3
Meets regulatory requirements (e.g., EPA, other)	14	0	0
Minimum quantity requirements	1	9	4
Packaging	3	10	1
Payment terms	8	5	1
Price	13	2	0
Product consistency	12	2	0
Product range	4	3	6
Quality meets industry standards	13	1	0
Quality exceeds industry standards	5	7	2
Reliability of supply	12	1	1
Technical support/service	2	8	4
U.S. transportation costs	7	6	1

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

Lead times

2,4-D is primarily sold from inventory. U.S. producer Corteva reported that *** of its commercial shipments were from inventories.²⁴ U.S. importers reported that *** of its commercial shipments were from U.S. inventories, with the remainder from foreign inventories and *** percent produced-to-order, with lead times averaging *** days, *** days, and *** days, respectively.

²⁴ U.S. producer Corteva ***.

Supplier certification

Six of 15 responding purchasers require their suppliers to become certified or qualified to sell 2,4-D to their firm. Two purchasers reported that it takes 180 days to qualify a new supplier, while one reported that it took 30 to 60 days, one reported 365 days, and one reported 243 to 1,095 days. Three purchasers reported that foreign suppliers had failed in their attempts to qualify 2,4-D, or had lost approved status since 2021. Purchaser *** reported that Polaquimia failed EPA requirements, *** reported that one technical manufacturer from China failed stability testing, and *** reported that it attempted to qualify 2,4-D acid produced by *** and supplied by ***, but that it failed because ***.

Minimum quality specifications

As can be seen from table 2.10, 7 responding purchasers reported that domestically produced product always met minimum quality specifications. Three responding purchasers each reported that the 2,4-D imported from China and India always met minimum quality specifications, while 4 reported that nonsubject 2,4-D always met minimum quality specifications.

Table 2.10 2,4-D: Count of purchasers' responses regarding suppliers' ability to meet minimum quality specifications, by source

Source of purchases	Always	Usually	Sometimes	Rarely or never	Don't Know
United States	7	1	1	0	5
China	3	3	1	0	7
India	3	0	2	0	9
Nonsubject sources	4	2	1	0	4

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

Note: Purchasers were asked how often domestically produced or imported 2,4-D meets minimum quality specifications for their own or their customers' uses.

Purchasers cited the following as factors that determine quality: EPA requirements/approval, purity/impurity levels, condition of product when delivered, form, color, odor, assay, flowability, consistency, packaging quality, supplier reputation, the check on the supplier's Certificate of Analysis, low odor, flowability/non caking, formulation performance, flake or crystalline granules instead of powder, color, viscosity, and solubility.

Changes in purchasing patterns

Four purchasers reported that they had changed suppliers since January 1, 2021, while 11 reported that they had not. Specifically, firms dropped or reduced purchases from Corteva because of unreliability, limited supply, cutting of supply, cessation of sales of ***, and geographic diversification. *** stopped purchases from Drexel and Nufarm *** due to form or compliance options. *** added purchases from Drexel because its traditional suppliers could not provide enough finished product when needed. Firms also reported adding Atul, Greenlands, Meghmani, Proactive, Shandong Weifang Rainbow, and Thai Harvest; several reported adding these firms after dropping or reducing purchases from Corteva.

Purchasers were also asked about changes in their purchasing patterns from different countries since January 1, 2021 (table 2.11). Most purchasers reported that purchases of U.S.-produced 2,4-D either fluctuated down or steadily decreased because of ***, lack of U.S. capacity, growing demand of E3 trait adoption in the U.S., Corteva limiting 2,4-D acid supply beginning in February 2021, Corteva's inability to supply sufficient quantities. Purchaser *** reported that in 2022, Corteva suggested it purchase from alternative suppliers ***. Purchasers reported increased purchases of product from China and India because of lack of U.S. capacity, Corteva's refusal to supply, market price, and tech acid purchases. Purchaser *** reported increasing nonsubject purchases from ***.

Table 2.11 2,4-D: Count of purchasers' responses regarding changes in purchase patterns from U.S., subject, and nonsubject countries

Source of purchases	Steadily Increase	Fluctuate Up	No change	Fluctuate Down	Steadily Decrease	Did not purchase
United States	0	1	0	5	5	2
China	1	4	1	2	1	3
India	2	1	3	0	1	5
Nonsubject sources	0	1	4	1	1	2
Sources unknown	0	1	3	3	2	3

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

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

Purchasers were asked a number of questions comparing 2,4-D produced in the United States, subject countries, and nonsubject countries. First, purchasers were asked for a country-by-country comparison on the same 18 factors (table 2.12) for which they were asked to rate the importance.

Most purchasers reported that U.S.-produced 2,4-D and 2,4-D imported from China were comparable on compatibility with specific crops planted, discounts offered, meets regulatory requirements (e.g., EPA, other), minimum quantity requirements, packaging, product consistency, quality meets industry standards, and U.S. transportation costs. Most purchasers reported that U.S. produced 2,4-D and 2,4-D imported from India were comparable on compatibility with specific crops planted, delivery terms, discounts offered, meets regulatory requirements (e.g. EPA, other), minimum quantity requirements, packaging, payment terms, price, product consistency, product range, quality meets industry standards, and U.S. transportation costs. Five purchasers compared 2,4-D from China with that from India; all reported that they were comparable across all factors except for availability and availability of flake or powder forms (for which four of five purchasers reported that they were comparable), and product consistency (for which three of five purchasers reported that they were comparable). Of the factors purchasers rated as very important, meets regulatory requirements (e.g. EPA, other), price, quality meets industry standards, and product consistency were rated as comparable by most purchasers.

Table 2.12 2,4-D: Count of purchasers' responses comparing U.S.-produced and imported product, by factor and country pair

Factor	Country pair	Superior	Comparable	Inferior
Availability	U.S. v. China	1	1	6
Availability of flake or powder forms	U.S. v. China	3	3	2
Compatibility with specific crops planted	U.S. v. China	2	6	0
Delivery terms	U.S. v. China	4	4	0
Delivery time	U.S. v. China	6	2	0
Discounts offered	U.S. v. China	0	6	1
Meets regulatory requirements (e.g., EPA, other)	U.S. v. China	1	7	0
Minimum quantity requirements	U.S. v. China	1	7	0
Packaging	U.S. v. China	2	6	0
Payment terms	U.S. v. China	1	4	2
Price	U.S. v. China	0	4	4
Product consistency	U.S. v. China	2	6	0
Product range	U.S. v. China	2	5	0
Quality meets industry standards	U.S. v. China	1	7	0
Quality exceeds industry standards	U.S. v. China	3	5	0
Reliability of supply	U.S. v. China	1	3	4
Technical support/service	U.S. v. China	4	4	0
U.S. transportation costs	U.S. v. China	2	6	0

Table continued.

Table 2.12 (Continued) 2,4-D: Count of purchasers' responses comparing U.S.-produced and imported product, by factor and country pair

Factor	Country pair	Superior	Comparable	Inferior
Availability	U.S. v. India	1	1	4
Availability of flake or powder forms	U.S. v. India	3	3	0
Compatibility with specific crops planted	U.S. v. India	1	5	0
Delivery terms	U.S. v. India	2	4	0
Delivery time	U.S. v. India	4	2	0
Discounts offered	U.S. v. India	0	6	0
Meets regulatory requirements (e.g., EPA, other)	U.S. v. India	2	4	0
Minimum quantity requirements	U.S. v. India	0	6	0
Packaging	U.S. v. India	1	4	1
Payment terms	U.S. v. India	1	4	1
Price ¹	U.S. v. India	0	4	2
Product consistency	U.S. v. India	2	4	0
Product range	U.S. v. India	2	4	0
Quality meets industry standards	U.S. v. India	1	5	0
Quality exceeds industry standards	U.S. v. India	2	3	1
Reliability of supply	U.S. v. India	1	3	2
Technical support/service	U.S. v. India	3	3	0
U.S. transportation costs	U.S. v. India	1	5	0

Table continued.

Table 2.12 (Continued) 2,4-D: Count of purchasers' responses comparing U.S.-produced and imported product, by factor and country pair

Factor	Country pair	Superior	Comparable	Inferior
Availability	China v. India	1	4	0
Availability of flake or powder forms	China v. India	1	4	0
Compatibility with specific crops planted	China v. India	0	5	0
Delivery terms	China v. India	0	5	0
Delivery time	China v. India	0	5	0
Discounts offered	China v. India	0	5	0
Meets regulatory requirements (e.g., EPA, other)	China v. India	0	5	0
Minimum quantity requirements	China v. India	0	5	0
Packaging	China v. India	0	5	0
Payment terms	China v. India	0	5	0
Price	China v. India	0	5	0
Product consistency	China v. India	1	3	1
Product range	China v. India	0	5	0
Quality meets industry standards	China v. India	0	5	0
Quality exceeds industry standards	China v. India	0	5	0
Reliability of supply	China v. India	0	5	0
Technical support/service	China v. India	0	5	0
U.S. transportation costs	China v. India	0	5	0

Table continued.

Table 2.12 (Continued) 2,4-D: Count of purchasers' responses comparing U.S.-produced and imported product, by factor and country pair

Factor	Country pair	Superior	Comparable	Inferior
Availability	U.S. v. Nonsubject	1	2	2
Availability of flake or powder forms	U.S. v. Nonsubject	1	2	2
Compatibility with specific crops planted	U.S. v. Nonsubject	1	4	0
Delivery terms	U.S. v. Nonsubject	2	3	0
Delivery time	U.S. v. Nonsubject	2	2	1
Discounts offered	U.S. v. Nonsubject	0	3	1
Meets regulatory requirements (e.g., EPA, other)	U.S. v. Nonsubject	1	4	0
Minimum quantity requirements	U.S. v. Nonsubject	0	5	0
Packaging	U.S. v. Nonsubject	0	5	0
Payment terms	U.S. v. Nonsubject	0	5	0
Price	U.S. v. Nonsubject	0	4	1
Product consistency	U.S. v. Nonsubject	0	5	0
Product range	U.S. v. Nonsubject	1	3	0
Quality meets industry standards	U.S. v. Nonsubject	0	5	0
Quality exceeds industry standards	U.S. v. Nonsubject	1	4	0
Reliability of supply	U.S. v. Nonsubject	1	2	2
Technical support/service	U.S. v. Nonsubject	2	3	0
U.S. transportation costs	U.S. v. Nonsubject	2	3	0

Table continued.

Table 2.12 (Continued) 2,4-D: Count of purchasers' responses comparing U.S.-produced and imported product, by factor and country pair

Factor	Country pair	Superior	Comparable	Inferior
Availability	China v. Nonsubject	1	3	1
Availability of flake or powder forms	China v. Nonsubject	1	2	1
Compatibility with specific crops planted	China v. Nonsubject	0	4	0
Delivery terms	China v. Nonsubject	0	4	0
Delivery time	China v. Nonsubject	0	5	0
Discounts offered	China v. Nonsubject	0	4	0
Meets regulatory requirements (e.g., EPA, other)	China v. Nonsubject	0	4	0
Minimum quantity requirements	China v. Nonsubject	0	4	0
Packaging	China v. Nonsubject	0	4	0
Payment terms	China v. Nonsubject	0	4	0
Price	China v. Nonsubject	2	1	1
Product consistency	China v. Nonsubject	1	3	0
Product range	China v. Nonsubject	0	4	0
Quality meets industry standards	China v. Nonsubject	0	5	0
Quality exceeds industry standards	China v. Nonsubject	0	4	0
Reliability of supply	China v. Nonsubject	1	4	0
Technical support/service	China v. Nonsubject	0	4	0
U.S. transportation costs	China v. Nonsubject	0	5	0

Table continued.

Table 2.12 (Continued) 2,4-D: Count of purchasers' responses comparing U.S.-produced and imported product, by factor and country pair

Factor	Country pair	Superior	Comparable	Inferior
Availability	India v. Nonsubject	0	2	1
Availability of flake or powder forms	India v. Nonsubject	0	2	1
Compatibility with specific crops planted	India v. Nonsubject	0	3	0
Delivery terms	India v. Nonsubject	0	3	0
Delivery time	India v. Nonsubject	0	3	0
Discounts offered	India v. Nonsubject	0	3	0
Meets regulatory requirements (e.g., EPA, other)	India v. Nonsubject	0	3	0
Minimum quantity requirements	India v. Nonsubject	0	3	0
Packaging	India v. Nonsubject	0	3	0
Payment terms	India v. Nonsubject	0	3	0
Price	India v. Nonsubject	1	1	1
Product consistency	India v. Nonsubject	0	3	0
Product range	India v. Nonsubject	0	3	0
Quality meets industry standards	India v. Nonsubject	0	3	0
Quality exceeds industry standards	India v. Nonsubject	0	3	0
Reliability of supply	India v. Nonsubject	0	3	0
Technical support/service	India v. Nonsubject	0	3	0
U.S. transportation costs	India v. Nonsubject	0	3	0

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

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

Comparison of U.S.-produced and imported 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, importers, and purchasers were asked whether the products can always, frequently, sometimes, or never be used interchangeably. As shown in tables 2.13 to 2.15, U.S. producer Corteva reported that 2,4-D was *** interchangeable across sources. All responding importers and most purchasers reported that 2,4-D was always or frequently interchangeable across sources. Importer *** reported that U.S. supply possesses better manufacturing flowability, which positively impacts the efficiency in processing time, and added that domestically supplied 2,4-D requires little to no preparatory crushing and flows well through its manufacturing equipment. Importer *** reported that the homeowner market is much more sensitive to product purity due to the strong phenolic odor of lower quality products. It also added that ***. Purchasers *** reported that all 2,4-D technical acid/products are interchangeable across sources.

Table 2.13 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

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

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

Table 2.14 2,4-D: Count of importers reporting the interchangeability between product produced in the United States and in other countries, by country pair

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

Table 2.15 2,4-D: Count of purchasers reporting the interchangeability between product produced in the United States and in other countries, by country pair

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

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

In addition, U.S. producer Corteva, importers, and purchasers 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 2.16 to 2.18, U.S. producer Corteva reported that they *** were, while the majority of importers reported that they always or frequently were in comparisons between the United States and subject countries. Although purchaser responses were mixed, a plurality reported that there always were differences between U.S. produced 2,4-D and subject 2,4-D, while most reported that there sometimes were differences between U.S. produced 2,4-D and nonsubject 2,4-D, and between 2,4-D produced in China and nonsubject 2,4-D. U.S. importer/purchaser *** reported that Corteva stopped supplying it with 2,4-D since 2022, that the only country that has the capacity and availability to supply it

with the quantities it needs is China, and that the ***. Similarly, importer/purchaser *** reported that it was not able to obtain sufficient domestic supply after 2021, and importer *** reported that it ***. Importer *** reported that production and shipments from China are faster than from India. Purchasers reported that product availability and product quality as factors other than price, and *** added logistics and supplier experience in the marketplace as additional factors.

Table 2.16 2,4-D: Count of U.S. producer Corteva reporting the significance of differences other than price between product produced in the United States and in other countries, by country pair

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

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

Table 2.17 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

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

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

Table 2.18 2,4-D: Count of purchasers reporting the significance of differences between product produced in the United States and in other countries, by country pair

Country pair	Always	Frequently	Sometimes	Never
U.S. vs. China	4	1	2	1
U.S. vs. India	4	0	2	1
U.S. vs. Other	1	0	4	1
China vs. India	2	1	3	0
China vs. Other	1	0	5	0
India vs. Other	1	0	3	0

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

Formulation interchangeability

Half of responding U.S. purchasers (6 of 12) reported that domestic 2,4-D formulations (e.g. Enlist) are not at all interchangeable with non-domestic 2,4-D formulations, 5 of 12 reported that they were somewhat interchangeable, and one reported that they were mostly interchangeable. Purchaser *** reported that 2,4-D acid and choline salt are not interchangeable because they are different molecules with different CAS numbers and could not be interchanged without resulting in new EPA registrations. Purchaser *** reported that Enlist is a different formulation from non-domestic sources. Purchaser *** reported that Enlist is not interchangeable with any other product, but that commodity products such as tech acid, amine, and EHE are interchangeable. *** reported that the formulations are not interchangeable because they are linked directly to specific EPA registrations.

Elasticity estimates

This section discusses elasticity estimates; parties were encouraged to comment on these estimates and these comments are described where applicable.

U.S. supply elasticity

The domestic supply elasticity for 2,4-D measures the sensitivity of the quantity supplied by U.S. producers to changes in the U.S. market price of 2,4-D. The elasticity of domestic supply depends on several factors including the level of excess capacity, the ease with which producers can alter capacity, producers' ability to shift to production of other products, the existence of inventories, and the availability of alternate markets for U.S.-produced 2,4-D. Analysis of these factors above indicates that the U.S. industry has the ability to moderately increase or decrease shipments to the U.S. market; an estimate in the range of 3 to 6 is suggested.

U.S. demand elasticity

The U.S. demand elasticity for 2,4-D measures the sensitivity of the overall quantity demanded to a change in the U.S. market price of 2,4-D. This estimate depends on factors discussed above such as the existence, availability, and commercial viability of substitute products, as well as the component share of the 2,4-D in the production of any downstream products. Based on the available information, the aggregate demand for 2,4-D is likely to be very inelastic; a range of -0.25 to -0.5 is suggested.

Substitution elasticity²⁵

The elasticity of substitution depends upon the extent of product differentiation between the domestic and imported products.²⁶ Product differentiation, in turn, depends upon such factors as quality (e.g., chemistry, appearance, etc.) and conditions of sale (e.g., availability, sales terms/discounts/promotions, etc.). Based on available information, the elasticity of substitution between U.S.-produced 2,4-D and imported 2,4-D is likely to be in the range of 3 to 6. Factors contributing to this level of substitutability include similar quality, similar availability of forms of 2,4-D, and generally 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 formulation interchangeability, EPA registration, the reported inability of some importers/purchasers to purchase from domestic producers, or the preference for flake or powder 2,4-D acid.

²⁵ While petitioner Corteva did not provide an alternate estimate for elasticity of substitution, it stated that 2,4-D is highly substitutable. Hearing transcript, p. 34 (Cannistra). Respondents Drexel and Nufarm stated that the cost of EPA registration and qualification affect substitutability. Hearing transcript, pp. 196-198 (Bernard and Dempsey).

²⁶ The substitution elasticity measures the responsiveness of the relative U.S. consumption levels of the subject imports and the domestic like products to changes in their relative prices. This reflects how easily purchasers switch from the U.S. product to the subject products (or vice versa) when prices change.

Part 3: U.S. producers' production, shipments, and employment

The Commission analyzes a number of factors in making injury determinations (see 19 U.S.C. §§ 1677(7)(B) and 1677(7)(C)). Information on the subsidies and dumping margins was presented in Part 1 of this report and information on the volume and pricing of imports of the subject merchandise is presented in Part 4 and Part 5, respectively. Information on the other factors specified is presented in this section and/or Part 6 and (except as noted) is 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.

U.S. producers

The Commission issued a U.S. producer questionnaire to the petitioner (Corteva), the sole U.S. producer of 2,4-D in acid form.¹ Additionally, four firms that convert 2,4-D acid into derivative salt and ester products, products covered by the scope of this proceeding, ("U.S. converters")² also submitted U.S. producer questionnaire responses. Part 3 and tables C.1 and C.2 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.3 and C.4 in appendix C and appendices D, E, and F.

Table 3.1 lists Corteva's production location, position on the petition, and share of total production of 2,4-D in acid form.

Table 3.1 2,4-D: 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 as follows, Corteva ***.

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.

Table 3.2 presents events in the U.S. industry since January 1, 2021, as noted in public sources.

Table 3.2 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	The COVID-19 pandemic 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/petrochemicals/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-afmf-mdl-settlements-moving-forward>.

U.S. producers were asked to report any changes in the character of their operations or organization relating to the production of 2,4-D since January 1, 2021. Additionally, U.S. producers were asked whether the COVID-19 pandemic or any government actions taken to contain the spread of the COVID-19 virus resulted in changes to the firm’s supply chain arrangements, production, or shipments (including exports to the United States) relating to 2,4-D since January 1, 2021 and to describe any such impacts. Table 3.3 presents the operational changes and impact of COVID-19 during the investigation period identified by Corteva.

Table 3.3 2,4-D: U.S. producer Corteva’s reported changes in operations and impact of COVID-19, since January 1, 2021

Item	Narrative response on changes in operations
COVID-19	***
Production curtailments	***
Weather-related or force majeure events	***

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

U.S. production, capacity, and capacity utilization

The Commission asked U.S. firms to report their installed overall, practical overall, and practical 2,4-D capacities.³ Table 3.4 presents Corteva's installed and practical capacity and production data. Corteva reported that its installed capacity was *** over the period at *** pounds in 2021, 2022, and 2023 (and *** pounds across the interim periods).⁴ The company ***, thus Corteva's ***. Corteva reported that ***.⁵ Its practical capacity increased *** percent irregularly from 2021 to 2023 (decreasing from *** pounds in 2021 to *** pounds in 2022 before increasing to *** pounds in 2023). Corteva's reported practical capacity was *** across the interim periods at *** pounds ***.

Corteva's production decreased *** percent irregularly from 2021 to 2023 (increasing from *** pounds in 2021 to *** pounds in 2022 before decreasing to *** pounds in 2023). Corteva's production was *** percent lower in interim 2024 than interim 2023 (*** pounds compared to *** pounds).⁶

Resultingly, Corteva's practical capacity utilization rate decreased *** percentage points irregularly from 2021 to 2023 (increasing from *** percent in 2021 to *** percent in 2022 then decreasing *** percentage points to *** percent in 2023). Its capacity utilization was *** percentage points lower in interim 2024 than interim 2023 (*** percent compared to *** percent).

³ 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.

⁴ References to pounds throughout part 3 are measured in dry weight acid equivalent.

⁵ For additional details, see Corteva's responses in tables 3.3 and 3.5.

⁶ In its questionnaire response, Corteva reported ***.

Table 3.4 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 dry weight acid equivalent; utilization in percent, interim period is January through September

Item	Measure	2021	2022	2023	Interim 2023	Interim 2024
Installed overall	Capacity	***	***	***	***	***
Installed overall	Production	***	***	***	***	***
Installed overall	Utilization	***	***	***	***	***
Practical overall	Capacity	***	***	***	***	***
Practical overall	Production	***	***	***	***	***
Practical overall	Utilization	***	***	***	***	***
Practical 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 3.1 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.

Note: DWAE = dry weight acid equivalent.

Table 3.5 presents Corteva’s narratives regarding constraints on achieving practical overall capacity levels during the investigation period.

Table 3.5 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.

During the hearing, it was suggested that periods in which Corteva’s capacity utilization was below 100 percent would indicate that capacity constraints would not have prohibited the company from fulfilling orders during those periods. Corteva replied that its capacity utilization figures as collected in the questionnaire are presented on an annual or interim period basis but do not show utilization or ability to fulfill orders over shorter timeframes (e.g., 4 weeks) when specific constraints may have been felt.⁷ Staff asked Corteva to provide additional documentation to provide greater insight into the specific periods where capacity and production constraints might have been more acute than others. Corteva provided additional data highlighting its production by month as well as production constraints it attributed to periods of raw materials shortages and the “Texas freeze”, maintenance, other causes, or “lack of demand.”⁸ Table 3.6 and figure 3.1 present the monthly production data reported by Corteva along with a calculated practical capacity and capacity utilization figures by month.⁹ Figure 3.1 also highlights the periods that Corteva indicated its production and capacity were impacted by the freeze in Texas and raw material shortages.

⁷ Hearing transcript, pp. 89 to 91 (Cannistra).

⁸ See email from ***.

⁹ Figures were converted from metric tons to 1,000 pounds dry weight acid equivalent, and practical capacity figures were calculated from reported production figures combined with reported production losses attributed to maintenance and other causes.

Table 3.6 2,4-D: U.S. producer Corteva's practical capacity, production, and utilization, by month

Capacity and production in 1,000 pounds dry weight acid equivalent; Utilization in percent

Year	Month	Capacity	Production	Utilization
2021	January	***	***	***
2021	February	***	***	***
2021	March	***	***	***
2021	April	***	***	***
2021	May	***	***	***
2021	June	***	***	***
2021	July	***	***	***
2021	August	***	***	***
2021	September	***	***	***
2021	October	***	***	***
2021	November	***	***	***
2021	December	***	***	***
2022	January	***	***	***
2022	February	***	***	***
2022	March	***	***	***
2022	April	***	***	***
2022	May	***	***	***
2022	June	***	***	***
2022	July	***	***	***
2022	August	***	***	***
2022	September	***	***	***
2022	October	***	***	***
2022	November	***	***	***
2022	December	***	***	***
2023	January	***	***	***
2023	February	***	***	***
2023	March	***	***	***
2023	April	***	***	***
2023	May	***	***	***
2023	June	***	***	***
2023	July	***	***	***
2023	August	***	***	***
2023	September	***	***	***
2023	October	***	***	***
2023	November	***	***	***
2023	December	***	***	***
2024	January	***	***	***
2024	February	***	***	***
2024	March	***	***	***
2024	April	***	***	***
2024	May	***	***	***
2024	June	***	***	***
2024	July	***	***	***
2024	August	***	***	***
2024	September	***	***	***

Source: Email from ***.

Note: DWAE = dry weight acid equivalent. Practical 2,4-D capacity in this figure is based on the monthly production loss data submitted by Corteva relating to "Raw material shortage" and "Maintenance turnaround" added to actual monthly production. The elements for production losses due to "Lack of demand" and "Other causes" were excluded from the capacity numbers shown in this figure as both items are to be definitionally excluded from practical capacity reporting.

Figure 3.1 2,4-D: U.S. producer Corteva's practical capacity and production, by month

* * * * *

Source: Email from ***.

Note: DWAE = dry weight acid equivalent. Practical 2,4-D capacity in this figure is based on the monthly production loss data submitted by Corteva relating to "Raw material shortage" and "Maintenance turnaround" added to actual monthly production. The elements for production losses due to "Lack of demand" and "Other causes" were excluded from the capacity numbers shown in this figure as both items are to be definitionally excluded from practical capacity reporting.

Alternative products

Corteva indicated in its response that ***.

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

Table 3.7 presents U.S. producer Corteva's U.S. shipments, export shipments, and total shipments of 2,4-D during the investigation period.¹⁰ 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 the remaining *** percent or less by quantity and *** percent or less by value across all periods.

Corteva's total shipments decreased *** percent irregularly by quantity from 2021 to 2023 (increasing from *** pounds in 2021 to *** pounds in 2022 before decreasing to *** pounds in 2023). By value, its total shipments decreased *** percent irregularly from 2021 to 2023 (increasing from \$*** to \$*** before decreasing to \$***). Corteva's total shipments were *** percent lower by quantity across the interim periods (*** pounds in interim 2024 compared to *** pounds in interim 2023) and *** percent lower by value (\$*** compared to \$***).

Corteva's U.S. shipments followed a similar trajectory to total shipments, decreasing *** percent irregularly by quantity (increasing from *** pounds in 2021 to *** pounds in 2022 before decreasing to *** pounds in 2023). By value, Corteva's U.S. shipments decreased *** percent irregularly from 2021 to 2023 (increasing from \$*** to \$*** before decreasing to \$***). U.S. shipments were *** percent lower by quantity in interim 2024 than interim 2023 (*** pounds compared to *** pounds) and *** percent lower by value across the interim periods (\$*** compared to \$***). Corteva's export shipments decreased *** percent by quantity from 2021 to 2023 (decreasing from *** pounds in 2021 to *** pounds in 2022 and to *** pounds in 2023). By value, its export shipments decreased *** percent from 2021 to 2023 (decreasing from \$*** in 2021 to \$*** in 2022 and to \$*** in 2023).

¹⁰ App. E also includes data on shipments of downstream formulated products (broken out by patented vs. generic formulations) and the corresponding 2,4-D contents of those shipments.

The unit values of Corteva's total shipments as measured in dollars per pound decreased *** percent irregularly from 2021 to 2023 (increasing from \$*** per pound in 2021 to \$*** per pound in 2022 before decreasing to \$*** per pound in 2023). Unit values of U.S. shipments decreased *** percent irregularly from 2021 to 2023 (increasing from \$*** per pound in 2021 to \$*** per pound in 2022 before decreasing to \$*** per pound in 2023). Unit values of total shipments and U.S. shipments were *** percent and *** percent lower, respectively, in interim 2024 than interim 2023 (\$*** per pound and \$*** per pound for total shipments and U.S. shipments, respectively, compared to \$*** per pound for both total shipments and U.S. shipments in interim 2023).

Unit values of export shipments increased *** percent from 2021 to 2023 (from \$*** per pound in 2021 to \$*** per pound in 2022 and to \$*** per pound in 2023). Export shipment unit values were *** percent higher in interim 2024 than interim 2023 (at \$*** per pound compared to \$*** per pound).

Table 3.7 2,4-D: U.S. producer Corteva's total shipments, by destination and period

Quantity in 1,000 pounds dry weight acid equivalent; value in 1,000 dollars; unit value in dollars per pound dry weight acid equivalent; shares in percent, interim period is January through September

Item	Measure	2021	2022	2023	Interim 2023	Interim 2024
U.S. shipments	Quantity	***	***	***	***	***
Export shipments	Quantity	***	***	***	***	***
Total shipments	Quantity	***	***	***	***	***
U.S. shipments	Value	***	***	***	***	***
Export shipments	Value	***	***	***	***	***
Total shipments	Value	***	***	***	***	***
U.S. shipments	Unit value	***	***	***	***	***
Export shipments	Unit value	***	***	***	***	***
Total shipments	Unit value	***	***	***	***	***
U.S. shipments	Share of quantity	***	***	***	***	***
Export shipments	Share of quantity	***	***	***	***	***
Total shipments	Share of quantity	100.0	100.0	100.0	100.0	100.0
U.S. shipments	Share of value	***	***	***	***	***
Export shipments	Share of value	***	***	***	***	***
Total shipments	Share of value	100.0	100.0	100.0	100.0	100.0

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

Table 3.8 presents U.S. producer Corteva's U.S. shipments by type and period. The *** of Corteva's U.S. shipments by both quantity and value were internally consumed with the company reporting an increasing share of its production being internally consumed across the investigation period.¹¹ Corteva reported *** percent of its U.S. shipments being internally consumed by quantity (*** percent by value) in 2021. Corteva's share of U.S. shipments represented by internal consumption then increased to *** percent by quantity (*** 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 from 2021 to 2023. Corteva's overall internal consumption increased irregularly *** percent by quantity over the period but decreased *** percent irregularly by value. *** Corteva's U.S. shipments were internal consumption in interim 2024 (*** percent by quantity and *** percent by value compared to *** percent by quantity and *** percent by value in interim 2023).¹²

Commercial U.S. shipments represented the second largest portion of Corteva's U.S. shipments by both quantity and value from 2021 to 2023 but decreased to *** in interim 2024. 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 decreased *** percent by quantity and *** percent by value from 2021 to 2023 (decreasing from *** pounds (\$***)) in 2021 to *** pounds (\$***)) in 2022 and to *** pounds (\$***)) in 2023). 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. As noted, Corteva reported *** commercial shipments in interim 2024 compared to *** in interim 2023. Resultingly, the share of U.S. shipments represented by commercial U.S. shipments dropped from *** percent of U.S. shipments by quantity and *** percent of U.S. shipments by value to *** across the interim periods.

¹¹ Corteva internally consumes in-scope 2,4-D to produce downstream formulated herbicide products.

¹² Staff asked Corteva to explain its interim 2024 internal consumption value calculation. For Corteva's response, see EDIS Doc. 847991 and EDIS Doc. 848748. App. F presents alternative financial results for Corteva using an alternate calculation for Corteva's interim 2024 internal consumption value. See Part 6 for more details.

Corteva also reported U.S. shipments categorized as swap shipments under an agreement with ***.¹³ Corteva's shipments represented by this agreement decreased *** percent by quantity and *** percent by value from 2021 to 2023 (decreasing from *** pounds (\$***) in 2021 to *** pounds (\$***) in 2022 and to *** pounds (\$***) in 2023). 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). Corteva swap shipments decreased *** percent by quantity and *** percent by value across the interim periods (*** pounds in interim 2024 (\$***) compared to *** pounds in interim 2023 (\$***)).

Average unit values of Corteva's internal consumption and commercial U.S. shipments both decreased *** percent irregularly (increasing from \$*** per pound in 2021 to \$*** per pound in 2022 before decreasing to \$*** per pound in 2023). The average unit value of Corteva's internal consumption was *** percent lower across interim periods (\$*** per pound in interim 2024 compared to \$*** per pound in interim 2023). The average unit value of Corteva's commercial U.S. shipments was \$*** in interim 2023 with Corteva then reporting *** commercial U.S. shipments in interim 2024. The average unit value of Corteva's U.S. swap shipments increased *** percent irregularly from 2021 to 2023 (increasing from \$*** per pound in 2021 to \$*** per pound in 2022 and decreasing to \$*** per pound in 2023). The average unit value of Corteva's U.S. swap shipments was *** percent lower across the interim periods (\$*** per pound in interim 2024 compared to \$*** per pound in interim 2023).

¹³ In its questionnaire response, Corteva provided the following description of the swap agreement: "***."

Table 3.8 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 dry weight acid equivalent; shares in percent, interim period is January through September

Item	Measure	2021	2022	2023	Interim 2023	Interim 2024
Commercial U.S. shipments	Quantity	***	***	***	***	***
Swap shipments	Quantity	***	***	***	***	***
Internal consumption	Quantity	***	***	***	***	***
Transfers to related firms	Quantity	***	***	***	***	***
U.S. shipments	Quantity	***	***	***	***	***
Commercial U.S. shipments	Value	***	***	***	***	***
Swap shipments	Value	***	***	***	***	***
Internal consumption	Value	***	***	***	***	***
Transfers to related firms	Value	***	***	***	***	***
U.S. shipments	Value	***	***	***	***	***
Commercial U.S. shipments	Unit value	***	***	***	***	***
Swap shipments	Unit value	***	***	***	***	***
Internal consumption	Unit value	***	***	***	***	***
Transfers to related firms	Unit value	***	***	***	***	***
U.S. shipments	Unit value	***	***	***	***	***
Commercial U.S. shipments	Share of quantity	***	***	***	***	***
Swap shipments	Share of quantity	***	***	***	***	***
Internal consumption	Share of quantity	***	***	***	***	***
Transfers to related firms	Share of quantity	***	***	***	***	***
U.S. shipments	Share of quantity	100.0	100.0	100.0	100.0	100.0
Commercial U.S. shipments	Share of value	***	***	***	***	***
Swap shipments	Share of value	***	***	***	***	***
Internal consumption	Share of value	***	***	***	***	***
Transfers to related firms	Share of value	***	***	***	***	***
U.S. shipments	Share of value	100.0	100.0	100.0	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 “—”.

Captive consumption

Section 771(7)(C)(iv) of the Act states that—¹⁴

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

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

¹⁴ Amended by PL 114-27 (as signed, June 29, 2015), Trade Preferences Extension Act of 2015.

Transfers and sales

As reported in table 3.8, internal consumption accounted for between *** and *** percent of Corteva’s U.S. shipments of 2,4-D by quantity across the investigation 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 investigation period. As shown in table 3.9, *** 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 3.9 2,4-D: U.S. producer Corteva’s production used in downstream products, by type of consumption and period

Quantity in 1,000 pounds dry weight acid equivalent; share in percent, interim period is January through September

Item	Measure	2021	2022	2023	Interim 2023	Interim 2024
Internal consumption: Sold as is	Quantity	***	***	***	***	***
Internal consumption: Processed into downstream products	Quantity	***	***	***	***	***
All internal consumption	Quantity	***	***	***	***	***
Internal consumption: Sold as is	Share	***	***	***	***	***
Internal consumption: Processed into downstream products	Share	***	***	***	***	***
All internal consumption	Share	100.0	100.0	100.0	100.0	100.0
Swaps: Sold as is	Quantity	***	***	***	***	***
Swaps: Processed into downstream products	Quantity	***	***	***	***	***
All swaps	Quantity	***	***	***	***	***
Swaps: Sold as is	Share	***	***	***	***	***
Swaps: Processed into downstream products	Share	***	***	***	***	***
All swaps	Share	100.0	100.0	100.0	100.0	100.0
IC + Swaps: Sold as is	Quantity	***	***	***	***	***
IC + Swaps: Processed into downstream products	Quantity	***	***	***	***	***
All internal consumption and swaps	Quantity	***	***	***	***	***
IC + Swaps: Sold as is	Share	***	***	***	***	***
IC + Swaps: Processed into downstream products	Share	***	***	***	***	***
All internal consumption and swaps	Share	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 “—”.

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. U.S. producer Corteva reported internal consumption and swaps of 2,4-D for the production of downstream formulated herbicide products but did not report diverting any 2,4-D intended for internal consumption or as part of swap shipments 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 3.10, with respect to the downstream articles resulting from captive production (i.e., formulated herbicide products), Corteva reported that 2,4-D accounts for *** percent of the value of the finished downstream product and *** percent of the share of the downstream product by quantity.

Table 3.10 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.

U.S. producer inventories

Table 3.11 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 *** percent from 2021 to 2023 (from approximately *** pounds in 2021 to *** pounds in 2022 and to *** pounds in 2023). Inventories were *** percent lower in interim 2024 than interim 2023 (*** pounds compared to *** pounds).

Corteva's inventories as a ratio to its U.S. production, U.S. shipments, and total shipments all decreased from 2021 to 2023. Corteva's inventories to U.S. production ratio decreased *** percentage points from 2021 to 2023 (from *** percent to *** percent), its inventories to U.S. shipments ratio decreased *** percentage points from 2021 to 2023 (from *** percent to *** percent), and its inventories to total shipments ratio decreased *** percentage points from 2021 to 2023 (from *** percent to *** percent).

The company's inventories as a ratio to its U.S. production, U.S. shipments, and total shipments all decreased across the interim comparison periods as well. Corteva's inventories to U.S. production ratio decreased *** percentage points in interim 2024 compared to interim 2023 (from *** percent to *** percent), its inventories to U.S. shipments ratio decreased *** percentage points across interim periods (from *** percent to *** percent), and its inventories to total shipments ratio decreased *** percentage points across interim periods (from *** percent to *** percent).

Table 3.11 2,4-D: U.S. producer Corteva's inventories and their ratio to select items, by period

Quantity in 1,000 pounds dry weight acid equivalent; ratio in percent, interim period is January through September

Item	2021	2022	2023	Interim 2023	Interim 2024
End-of-period inventory quantity	***	***	***	***	***
Inventory ratio to U.S. production	***	***	***	***	***
Inventory ratio to U.S. shipments	***	***	***	***	***
Inventory ratio to total shipments	***	***	***	***	***

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

U.S. producers' imports from subject sources

Corteva reported having ***. It indicated its reason for importing as, “***.” Corteva reported that it imported ***. It also reported it directly imported ***. Table 3.12 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 *** represented *** percent of its U.S. production in each period.

Table 3.12 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 weight acid equivalent; ratio in percent, interim period is January through September

Item	Measure	2021	2022	2023	Interim 2023	Interim 2024
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 3.13 shows U.S. producer Corteva's employment-related data for its 2,4-D production facility the Midland, Michigan. Corteva reported, "****." The company reported **** production and related workers ("PRWs") were employed in relation to the production of 2,4-D in each period. Approximately **** hours were worked in 2021 and approximately **** hours were worked in both 2022 and 2023 in connection with 2,4-D production. Total hours worked in interim 2024 were lower than interim 2023 (**** hours worked compared to **** hours worked). Hours worked per PRW were **** in 2021 and **** in 2022 and 2023 (an increase of **** hours from 2021 to 2023). Hours worked per PRW were **** in interim 2024 compared to **** hours per PRW in interim 2023 (a decrease of **** hours worked per PRW across the interim periods).

Hourly wages increased **** percent irregularly from 2021 to 2023 (increasing from \$**** per hour in 2021 to \$**** per hour in 2022 before decreasing to \$**** in 2023). Hourly wages were **** percent lower in interim 2024 than interim 2023 (\$**** per hour compared to \$**** per hour). Total wages paid increased **** percent irregularly from 2021 to 2023 (increasing from \$**** in 2021 to \$**** in 2022 before decreasing to \$**** in 2023). Total wages were **** percent lower in interim 2024 than interim 2023 (\$**** compared to \$****).

Productivity as measured in pounds dry weight acid equivalent per hour decreased across the period, beginning at **** pounds per hour in 2021, decreasing to **** pounds per hour in 2022 and decreasing further to **** pounds per hour in 2023, a decrease of **** pounds per hour across the period. Productivity was **** pounds per hour lower in interim 2024 than interim 2023 (**** pounds per hour compared to **** pounds per hour). Unit labor costs increased **** percent from 2021 to 2023 and were **** percent higher in interim 2024 than interim 2023.

Table 3.13 2,4-D: U.S. producer Corteva's employment related information for its Midland facility, by item and period

Interim period is January through September

Item	2021	2022	2023	Interim 2023	Interim 2024
Production and related workers (PRWs) (number)	***	***	***	***	***
Total hours worked (1,000 hours)	***	***	***	***	***
Hours worked per PRW (hours)	***	***	***	***	***
Wages paid (\$1,000)	***	***	***	***	***
Hourly wages (dollars per hour)	***	***	***	***	***
Productivity (pounds DWAE per hour)	***	***	***	***	***
Unit labor costs (dollars per pound DWAE)	***	***	***	***	***

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

Note: DWAE = dry weight acid equivalent.

Additionally, Corteva operates a second facility in Freeport, Texas, which manufactures DCP, an intermediate raw material used in the production of 2,4-D.¹⁵ *** of the output of the raw material at Texas facility shipped to the Midland facility and is used to produce 2,4-D, and Freeport has ***. According to Corteva, “***.”

Corteva reported employment indicators for its Freeport facility separately, and these data are presented in table 3.14. The Midland facility employed between *** and *** PRWs during the investigation period. Hours worked in connection with production of the raw material at the Midland facility increased irregularly from 2021 to 2023 (increasing from approximately *** hours in 2021 to *** hours in 2022, before decreasing to *** hours worked in 2023). Total hours worked at the Midland facility in interim 2024 were lower than interim 2023 (*** hours worked compared to *** hours worked). Hours worked per PRW increased from 2021 to 2023 (from *** hours per PRW in 2021 to *** hours per PRW in 2022 and to *** hours per PRW in 2023). Hours worked per PRW were lower in interim 2024 than interim 2023 (*** compared to *** hours per PRW). Wages paid increased from 2021 to 2023 at the Midland facility but were lower in interim 2024 than in interim 2023. Hourly wages increased at the Midland facility from 2021 to 2023 and were higher in interim 2024 than interim 2023.

¹⁵ Conference transcript, p. 30 (Brown).

Table 3.14 2,4-D: U.S. producer Corteva's employment related information for its Freeport facility, by item and period

Item	2021	2022	2023	Interim 2023	Interim 2024
Production and related workers (PRWs) (number)	***	***	***	***	***
Total hours worked (1,000 hours)	***	***	***	***	***
Hours worked per PRW (hours)	***	***	***	***	***
Wages paid (\$1,000)	***	***	***	***	***
Hourly wages (dollars per hour)	***	***	***	***	***

Source: Data compiled from email from ***.

Table 3.15 shows Corteva's employment related information for its Midland and Freeport facilities combined. The two facilities collectively employed between *** and *** employees during the investigation period. Hours worked increased irregularly from 2021 to 2023 (increasing from *** hours worked 2021 to *** hours in 2022, before decreasing to *** hours in 2023). Total hours worked in interim 2024 were lower than interim 2023 (*** hours worked compared to *** hours worked). Hours worked per PRW increased irregularly from 2021 to 2023 (increasing from *** hours per PRW 2021 to *** hours per PRW in 2022, before decreasing to *** hours per PRW in 2023). Hours worked per PRW were lower in interim 2024 than interim 2023 (*** hours per PRW compared to *** hours per PRW). Wages paid increased irregularly from 2021 to 2023 but were lower in interim 2024 than in interim 2023. Hourly wages and unit labor costs for the two facilities increased from 2021 to 2023 and were higher in interim 2024 than interim 2023.

Table 3.15 2,4-D: U.S. producer Corteva's employment related information for both facilities, by item and period

Item	2021	2022	2023	Interim 2023	Interim 2024
Production and related workers (PRWs) (number)	***	***	***	***	***
Total hours worked (1,000 hours)	***	***	***	***	***
Hours worked per PRW (hours)	***	***	***	***	***
Wages paid (\$1,000)	***	***	***	***	***
Hourly wages (dollars per hour)	***	***	***	***	***
Productivity (pounds DWAE per hour)	***	***	***	***	***
Unit labor costs (dollars per pound DWAE)	***	***	***	***	***

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

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

U.S. importers

The Commission issued U.S. importer questionnaires to ten firms believed to be importers of 2,4-D, and usable questionnaire responses were received from all ten firms.^{1 2} Comparing the ratios of the quantities of U.S. imports reported in questionnaire responses to adjusted official U.S. import statistics³ in 2023 by source yields the following questionnaire coverage estimates: *** percent of U.S. imports from China, *** percent of U.S. imports from India, *** percent of U.S. imports from subject sources, *** percent of U.S. imports from nonsubject sources, and *** percent of U.S. imports from all sources. Table 4.1 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.

Table 4.1 2,4-D: U.S. importers, their headquarters, and share of imports within each source, 2023

Share in percent

Firm	Headquarters	China	India	Subject sources	Nonsubject sources	All import sources
ADAMA	Raleigh, NC	***	***	***	***	***
Albaugh	Ankeny, IA	***	***	***	***	***
Atul USA	Charlotte, NC	***	***	***	***	***
CAC Chemical	New York, NY	***	***	***	***	***
Corteva	Indianapolis, IN	***	***	***	***	***
Drexel	Memphis, TN	***	***	***	***	***
Nufarm	Alsip, IL	***	***	***	***	***
PBI-Gordon	Shawnee, KS	***	***	***	***	***
ProActive	Naples, FL	***	***	***	***	***
Sharda Cropchem	Mumbai, MH	***	***	***	***	***
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 firms based on information in the petition and on proprietary, Census-edited Customs import records for the primary HTS code of 2918.99.2010.

² Additionally, one firm (***) submitted a response certifying that it had not imported 2,4-D since January 1, 2021.

³ Official import statistics under primary HTS code 2918.99.2010 have been adjusted in coverage calculations to account for imports of 2,4-D reported in questionnaire responses as having been imported under HTS numbers 3808.93.1500 and 3808.93.2000 in 2023.

U.S. imports

Table 4.2 presents data for U.S. imports of 2,4-D from China and India, subject sources combined, nonsubject sources, and all sources as reported in questionnaire responses. Quantities, values, unit values, shares, and ratios to U.S. production are presented. In all periods of the investigation, China was the leading source of U.S. imports of 2,4-D by quantity, followed by India, and then nonsubject sources.

U.S. imports from subject sources increased *** percent irregularly by quantity from 2021 to 2023 (increasing from *** pounds in 2021 to *** pounds in 2022 before decreasing to *** pounds in 2023). By value, U.S. imports from subject sources increased *** percent irregularly from 2021 to 2023 (increasing from \$*** to \$*** before decreasing to \$***). U.S. imports from the subject sources were *** percent higher by quantity in interim 2024 than interim 2023 (*** pounds compared to *** pounds) and *** percent higher by value (\$*** compared to \$***).^{4 5}

U.S. imports from nonsubject sources⁶ increased *** percent by quantity from 2021 to 2023 (increasing from *** pounds in 2021 to *** pounds in 2022 and to *** pounds in 2023). By value, U.S. imports from nonsubject sources increased *** percent from 2021 to 2023 (increasing from \$*** in 2021 to \$*** in 2022 and then to \$*** in 2023). U.S. imports from the nonsubject sources were *** percent lower by quantity in interim 2024 than interim 2023 (*** pounds compared to *** pounds) and *** percent lower by value (\$*** compared to \$***).

⁴ U.S. imports from China increased *** percent irregularly by quantity from 2021 to 2023 (increasing from *** pounds in 2021 to *** pounds in 2022 before decreasing to *** pounds in 2023). By value, U.S. imports from China increased *** percent irregularly from 2021 to 2023 (increasing from \$*** to \$*** before decreasing to \$***). U.S. imports from China were *** percent higher by quantity in interim 2024 than interim 2023 (*** pounds compared to *** pounds) and *** percent higher by value (\$*** compared to \$***).

⁵ U.S. imports from India increased *** percent by quantity from 2021 to 2023 (increasing from *** pounds in 2021 to *** pounds in 2022 and to *** pounds in 2023). By value, U.S. imports from India increased *** percent irregularly from 2021 to 2023 (increasing from (\$*** to \$*** before decreasing to \$***). U.S. imports from India were *** percent higher by quantity in interim 2024 than interim 2023 (*** pounds compared to *** pounds) but *** percent lower by value (\$*** compared to \$***).

⁶ Nonsubject importers named the following countries as their nonsubject import sources: ***, ***, ***, and ***.

U.S. imports from subject sources as a share of total imports by quantity decreased irregularly *** percentage points from 2021 to 2023 (increasing from *** percent in 2021 to *** percent in 2022 before decreasing to *** percent in 2023). By value, U.S. imports from subject sources as a share of total imports decreased irregularly *** percentage points from 2021 to 2023 (from *** percent to *** percent before decreasing to *** percent). Imports from subject sources as a share of total U.S. imports were *** percentage points higher in interim 2024 than interim 2023 by quantity (*** percent compared to *** percent) and *** percentage points higher by value (*** percent compared to *** percent).^{7 8}

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 \$*** and \$*** per pound as compared to AUVs between \$*** and \$*** per pound for subject imports during the investigation period.⁹ AUVs of imports for all sources increased irregularly from 2021 to 2023 (increasing from \$*** in 2021 to \$*** per pound in 2023 before decreasing to \$*** per pound in 2023). AUVs of imports from subject sources were lower in interim 2024 than interim 2023 (\$*** per pound compared to \$*** per pound)¹⁰ but higher for nonsubject sources (\$*** per pound compared to \$*** per pound).

⁷ U.S. imports from China as a share of total imports decreased irregularly *** percentage points by quantity from 2021 to 2023 (increasing from *** percent to *** percent before decreasing to *** percent). By value, U.S. imports from China as a share of total imports decreased irregularly *** percentage points from 2021 to 2023 (increasing from *** percent to *** percent before decreasing to *** percent). Imports from China as a share of total U.S. imports were *** percentage points higher in interim 2024 than interim 2023 by quantity (*** percent compared to *** percent) and *** percentage points higher by value (*** percent compared to *** percent).

⁸ U.S. imports from India as a share of total imports increased irregularly *** percentage points by quantity from 2021 to 2023 (decreasing from *** percent in 2021 to *** percent in 2022 before increasing to *** percent in 2023). By value, U.S. imports from India decreased *** percentage points irregularly from 2021 to 2023 (decreasing from *** percent to *** percent before increasing to *** percent). Imports from India as a share of total U.S. imports were *** percentage points lower in interim 2024 than interim 2023 by quantity (*** percent compared to *** percent) but *** percentage points higher by value (*** percent compared to *** percent).

⁹ From 2021 to 2023, AUVs of imports from China were between \$*** and \$*** per pound, while AUVs of imports from India were between \$*** and \$*** per pound. AUVs of imports from China increased irregularly from 2021 to 2023, while AUVs of imports from India decreased irregularly from 2021 to 2023.

¹⁰ AUVs of imports were lower in interim 2024 than interim 2023 for China (\$*** per pound compared to \$*** per pound) and India (\$*** per pound compared to \$*** per pound).

Table 4.2 2,4-D: U.S. imports by source and period

Quantity in 1,000 pounds dry weight acid equivalent; value in 1,000 dollars; unit value in dollars per 1,000 pounds DWAE; interim is January to September

Source	Measure	2021	2022	2023	Interim 2023	Interim 2024
China	Quantity	***	***	***	***	***
India	Quantity	***	***	***	***	***
Subject sources	Quantity	***	***	***	***	***
Nonsubject sources	Quantity	***	***	***	***	***
All import sources	Quantity	***	***	***	***	***
China	Value	***	***	***	***	***
India	Value	***	***	***	***	***
Subject sources	Value	***	***	***	***	***
Nonsubject sources	Value	***	***	***	***	***
All import sources	Value	***	***	***	***	***
China	Unit value	***	***	***	***	***
India	Unit value	***	***	***	***	***
Subject sources	Unit value	***	***	***	***	***
Nonsubject sources	Unit value	***	***	***	***	***
All import sources	Unit value	***	***	***	***	***

Table continued.

Table 4.2 (Continued) 2,4-D: Share of U.S. imports by source and period

Share and ratio in percent; interim is January to September

Source	Measure	2021	2022	2023	Interim 2023	Interim 2024
China	Share of quantity	***	***	***	***	***
India	Share of quantity	***	***	***	***	***
Subject sources	Share of quantity	***	***	***	***	***
Nonsubject sources	Share of quantity	***	***	***	***	***
All import sources	Share of quantity	100.0	100.0	100.0	100.0	100.0
China	Share of value	***	***	***	***	***
India	Share of value	***	***	***	***	***
Subject sources	Share of value	***	***	***	***	***
Nonsubject sources	Share of value	***	***	***	***	***
All import sources	Share of value	100.0	100.0	100.0	100.0	100.0
China	Ratio	***	***	***	***	***
India	Ratio	***	***	***	***	***
Subject sources	Ratio	***	***	***	***	***
Nonsubject sources	Ratio	***	***	***	***	***
All import sources	Ratio	***	***	***	***	***

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

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

Figure 4.1 2,4-D: U.S. import quantities and average unit values, by source and period

* * * * *

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

Note: DWAE = dry weight acid equivalent.

Table 4.3 2,4-D: Changes in U.S. imports, by source and period

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

Source	Measure	2021 to 2023	2021 to 2022	2022 to 2023	Interim 2023 to 2024
China	%Δ Quantity	▲ ***	▲ ***	▼ ***	▲ ***
India	%Δ Quantity	▲ ***	▲ ***	▲ ***	▲ ***
Subject sources	%Δ Quantity	▲ ***	▲ ***	▼ ***	▲ ***
Nonsubject sources	%Δ Quantity	▲ ***	▲ ***	▲ ***	▼ ***
All import sources	%Δ Quantity	▲ ***	▲ ***	▼ ***	▲ ***
China	%Δ Value	▲ ***	▲ ***	▼ ***	▲ ***
India	%Δ Value	▲ ***	▲ ***	▼ ***	▼ ***
Subject sources	%Δ Value	▲ ***	▲ ***	▼ ***	▲ ***
Nonsubject sources	%Δ Value	▲ ***	▲ ***	▲ ***	▼ ***
All import sources	%Δ Value	▲ ***	▲ ***	▼ ***	▼ ***
China	%Δ Unit value	▲ ***	▲ ***	▼ ***	▼ ***
India	%Δ Unit value	▼ ***	▲ ***	▼ ***	▼ ***
Subject sources	%Δ Unit value	▲ ***	▲ ***	▼ ***	▼ ***
Nonsubject sources	%Δ Unit value	▲ ***	▲ ***	▲ ***	▲ ***
All import sources	%Δ Unit value	▲ ***	▲ ***	▼ ***	▼ ***
China	ppt Δ Quantity	▼ ***	▲ ***	▼ ***	▲ ***
India	ppt Δ Quantity	▲ ***	▼ ***	▲ ***	▼ ***
Subject sources	ppt Δ Quantity	▼ ***	▲ ***	▼ ***	▲ ***
Nonsubject sources	ppt Δ Quantity	▲ ***	▼ ***	▲ ***	▼ ***
All import sources	ppt Δ Quantity	***	***	***	***
China	ppt Δ Value	▼ ***	▲ ***	▼ ***	▲ ***
India	ppt Δ Value	▼ ***	▼ ***	▲ ***	▲ ***
Subject sources	ppt Δ Value	▼ ***	▲ ***	▼ ***	▲ ***
Nonsubject sources	ppt Δ Value	▲ ***	▼ ***	▲ ***	▼ ***
All import sources	ppt Δ Value	***	***	***	***
China	ppt Δ Ratio	▲ ***	▲ ***	▼ ***	▲ ***
India	ppt Δ Ratio	▲ ***	▲ ***	▲ ***	▲ ***
Subject sources	ppt Δ Ratio	▲ ***	▲ ***	▼ ***	▲ ***
Nonsubject sources	ppt Δ Ratio	▲ ***	▲ ***	▲ ***	▼ ***
All import sources	ppt Δ Ratio	▲ ***	▲ ***	▼ ***	▲ ***

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

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

Negligibility

The statute requires that an investigation be terminated without an injury determination if imports of the subject merchandise are found to be negligible.¹¹ 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.¹²

Based on U.S. importers' questionnaire responses, imports from China accounted for *** percent of total reported imports of 2,4-D by quantity from March 2023 through February 2024 (*** pounds of the *** pounds imported over the period). Imports from India accounted for *** percent of total imports of 2,4-D by quantity from March 2023 through February 2024 (*** pounds of the reported *** pounds imported over the period).

Table 4.4 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 dry weight acid equivalent; share in percent

Source of imports	Quantity	Share of quantity
China	***	***
India	***	***
Nonsubject sources	***	***
All import sources	***	100.0

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

¹¹ 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)).

¹² 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 2. Additional information concerning fungibility, geographical markets, and simultaneous presence in the market is presented as follows.

Fungibility

The Commission requested U.S. producers report their U.S. shipments of 2,4-D and U.S. importers to report their U.S. imports in 2023 by chemical form: 2,4-D acid (“acid”), 2,4-D dimethylamine salt (“salt”), and 2,4-D ethylhexyl ester (“ester”).¹³ Table 4.5 and figure 4.2 present data for these chemical form breakouts with the domestic industry defined as U.S. firm Corteva.¹⁴ U.S. producer Corteva’s 2023 U.S. shipments had the following breakout by chemical form: *** percent salt, *** percent ester, and *** percent acid.¹⁵ U.S. imports from China in 2023 had the following breakout by chemical form: *** percent acid and *** percent ester.¹⁶ U.S. imports from India in 2023 had the following breakout by chemical form: *** percent acid and *** percent ester.¹⁷ U.S. imports from subject sources combined in 2023 had

¹³ 2,4-D acid can be processed into derivative forms of salts or esters.

¹⁴ A table and figure presenting U.S. shipments, by source and chemical form for 2023 which also include U.S. converters are presented in App. D (table D.13 and figure D.2).

¹⁵ ***.

¹⁶ U.S. shipments of imports from China in 2023 were broken out as follows: *** percent internal consumption and *** percent commercial shipments by quantity. ***.

¹⁷ U.S. shipments of imports from India in 2023 were broken out as follows: *** percent commercial shipments and *** percent internal consumption by quantity. ***.

the following breakout by chemical form: *** percent acid and *** percent ester.¹⁸ *** U.S. imports from nonsubject sources in 2023 were in ester form (*** percent ester with *** as acid).¹⁹ U.S. imports from all sources in 2023 had the following breakout by chemical form: *** percent acid and *** percent ester (*** U.S. imports from any import source were reported as being in salt form).²⁰

Table 4.5 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 dry weight acid equivalent

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

Table continued.

Table 4.5. (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 chemical forms
U.S. producer	***	***	***	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.

¹⁸ U.S. shipments of imports from subject sources in 2023 were broken out as follows: *** percent internal consumption and *** percent commercial shipments.

¹⁹ U.S. shipments of imports from nonsubject sources in 2023 were broken out as follows: *** percent internal consumption and *** percent commercial shipments (***).

²⁰ U.S. shipments of imports from all sources in 2023 had the following breakout: *** percent internal consumption and *** percent commercial shipments.

Table 4.5. (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 chemical forms
U.S. producer	***	***	***	***
China	***	***	***	***
India	***	***	***	***
Subject sources	***	***	***	***
Nonsubject sources	***	***	***	***
All import sources	***	***	***	***
All sources	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 4.2 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 4.6 presents U.S. imports of 2,4-D, by source and border of entry in 2023, based on official U.S. import statistics.

U.S. imports of 2,4-D from China and India both principally entered through the Northern border²¹ of entry in 2023 (84.7 and 76.6 percent of total entries of 2,4-D from each source entered through the Northern border in 2023, respectively). The border of entry with the second highest share of U.S. imports of 2,4-D from China was the Southern border²² (10.8 percent of imports of 2,4-D from China in 2023 entered through the Southern border), while the border of entry with the second highest share of U.S. imports of 2,4-D from India was the Eastern border²³ (17.1 percent of imports from India entered through the Eastern border in 2023). According to the official import statistics, 4.5 percent of U.S. imports of 2,4-D from China entered through the Eastern border, while 6.3 percent of U.S. imports of 2,4-D from India entered through the Southern border in 2023. Zero imports were reported from both China and India as having entered through the Western border²⁴ in 2023.

U.S. imports of 2,4-D from nonsubject sources entered entirely through the Southern, Eastern, and Northern borders. Overall, *** percent of imports of 2,4-D from all sources entered through the Northern border, *** percent entered through the Southern border, and *** percent entered through the Eastern border (with zero U.S. imports of 2,4-D entering through the Western border) in 2023.

²¹ 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.

²² 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.

²³ 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 New York, New York; Philadelphia, Pennsylvania; San Juan, Puerto Rico; Charleston, South Carolina; Norfolk, Virginia; and St. Albans, Vermont.

²⁴ 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 4.6 2,4-D: U.S. imports, by source and by border of entry, 2023

Quantity in 1,000 pounds dry weight acid equivalent

Source	East	North	South	West	All borders
China	923	17,499	2,228	—	20,650
India	2,585	11,576	956	—	15,116
Subject sources	3,508	29,075	3,184	—	35,766
Nonsubject sources	***	***	***	—	***
All import sources	***	***	***	—	***

Table continued.

Table 4.6 (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	17.1	76.6	6.3	—	100.0
Subject sources	9.8	81.3	8.9	—	100.0
Nonsubject sources	***	***	***	—	100.0
All import sources	***	***	***	—	100.0

Table continued.

Table 4.6 (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	***	***	***	—	***
India	***	***	***	—	***
Subject sources	***	***	***	—	***
Nonsubject sources	***	***	***	—	***
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 HTS statistical reporting number 2918.99.2010, accessed on March 5, 2025. Imports are based on the imports for consumption data series.

Note: Quantities shown as "0" represent values greater than zero, but less than "1,000" pounds. 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 "—". Data shown is for the primary HTS statistical reporting number and therefore does not include in-scope merchandise under other HTS statistical reporting numbers. Proprietary, Census-edited Customs import records were used to add in the quantity of imports from Austria and the United Kingdom redacted from the public official U.S. import statistics files.

Presence in the market

Table 4.7 and figures 4.3 and 4.4 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 2024. Imports from China were present in 45 of the 48 months of the period (with no reported imports in the months of July and August 2023 or July 2024). Imports from India were present in 44 of the 48 months of the period (with no reported imports in the months of August, September, or October 2023 or October 2024). As such August 2023, was the only month with no imports from either subject source. Imports from nonsubject sources were present in 42 of the 48 months of the period (10 of 12 months in 2021, 10 of 12 months in 2022, 12 of 12 months in 2023, and 10 of 12 months in 2024).

Table 4.7 2,4-D: U.S. imports, by month and source

Quantity in 1,000 pounds dry weight acid equivalent

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

Table continued.

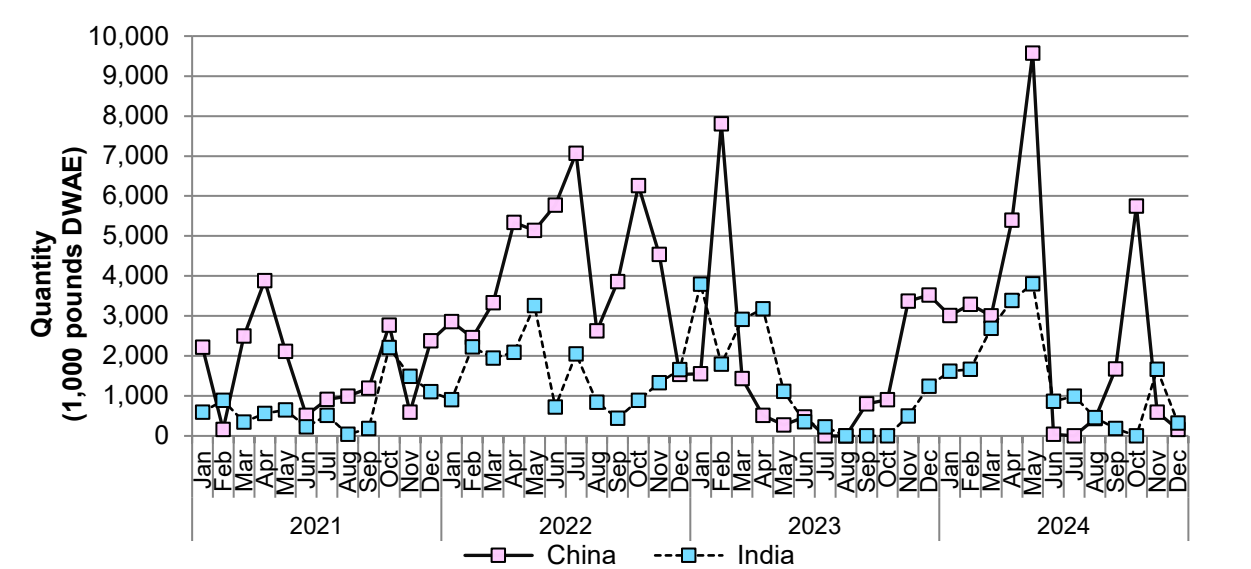
Table 4.7 (Continued) 2,4-D: U.S. imports, by month and source

Year	Month	China	India	Subject sources	Nonsubject sources	All import sources
2023	January	1,550	3,794	5,345	***	***
2023	February	7,808	1,798	9,606	***	***
2023	March	1,436	2,911	4,347	***	***
2023	April	512	3,182	3,695	***	***
2023	May	269	1,111	1,381	***	***
2023	June	475	357	832	***	***
2023	July	—	225	225	***	***
2023	August	—	—	—	***	***
2023	September	801	—	801	***	***
2023	October	905	—	905	***	***
2023	November	3,373	496	3,870	***	***
2023	December	3,521	1,241	4,762	***	***
2024	January	3,012	1,615	4,626	***	***
2024	February	3,287	1,667	4,954	***	***
2024	March	3,005	2,693	5,698	***	***
2024	April	5,395	3,390	8,785	***	***
2024	May	9,575	3,805	13,381	***	***
2024	June	40	862	902	***	***
2024	July	—	992	992	***	***
2024	August	437	460	897	***	***
2024	September	1,672	187	1,859	***	***
2024	October	5,744	—	5,744	***	***
2024	November	591	1,668	2,259	***	***
2024	December	159	325	483	***	***

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 March 5, 2025. Imports are based on the imports for consumption data series.

Note: Quantities shown as "0" represent values greater than zero, but less than "1,000" pounds. Zeroes, null values, and undefined calculations are suppressed and shown as "—". Data shown is for the primary HTS statistical reporting number and therefore does not include in-scope merchandise under other HTS statistical reporting numbers. Proprietary, Census-edited Customs import records were used to add in the quantity of imports from Austria and the United Kingdom redacted from the public official U.S. import statistics files.

Figure 4.3 2,4-D: U.S. imports from individual subject sources, by source and month



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 March 5, 2025. Imports are based on the imports for consumption data series.

Note: DWAE = dry weight acid equivalent. Data shown is for the primary HTS statistical reporting number and therefore does not include in-scope merchandise under other HTS statistical reporting numbers.

Figure 4.4 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 HTS statistical reporting number 2918.99.2010, accessed on March 5, 2025, and from proprietary, Census-edited Customs records using the same statistical reporting number, accessed April 2, 2025. Imports are based on the imports for consumption data series.

Note: DWAE = dry weight acid equivalent. Data shown is for the primary HTS statistical reporting number and therefore does not include in-scope merchandise under other HTS statistical reporting numbers. Proprietary, Census-edited Customs import records were used to add in the quantity of imports from Austria and the United Kingdom redacted from the public official U.S. import statistics files.

Apparent U.S. consumption and market shares

Tables 4.8 through 4.11 and figures 4.5 through 4.8 present data on apparent U.S. consumption and U.S. market shares for 2,4-D defining the U.S. industry as the U.S. producer Corteva. Apparent U.S. consumption and shares tables and figures which also include the data from U.S. converters as part of the domestic industry are presented in appendix D.²⁵

Quantity

Tables 4.8 and 4.9 and figures 4.5 and 4.6 present apparent U.S. consumption and U.S. market shares by quantity for the total and merchant markets.

Total market by quantity

Table 4.8 and figure 4.5 present data on apparent U.S. consumption and U.S. market shares by quantity for 2,4-D for the total market when defining the U.S. industry as the U.S. producer Corteva. Total apparent U.S. consumption by quantity increased *** percent irregularly from 2021 to 2023 (increasing from *** pounds in 2021 to *** pounds in 2022 before decreasing to *** pounds in 2023). Total apparent U.S. consumption by quantity was *** percent higher in interim 2024 than interim 2023 (*** pounds compared to *** pounds).

U.S. producer Corteva's total U.S. shipments decreased *** percent irregularly from 2021 to 2023 (increasing from *** pounds in 2021 to *** pounds in 2022 before decreasing to *** pounds in 2023). Corteva's share of total apparent U.S. consumption by quantity decreased *** percentage points from 2021 to 2023 (decreasing from *** percent in 2021 to *** percent in 2022 and to *** percent in 2023). Corteva's U.S. shipments were *** percent lower in interim 2024 than interim 2023 (*** pounds compared to *** pounds). The company's share of apparent U.S. consumption was *** percentage points lower in interim 2024 than interim 2023 (*** percent compared to *** percent).

²⁵ The four U.S. converters (***) all also submitted U.S. importers' questionnaire responses. Apparent consumption data in Part 4 and App. D include U.S. import data from the U.S. converters.

U.S. shipments of imports from subject sources increased *** percent irregularly from 2021 to 2023 (increasing from *** pounds in 2021 to *** pounds in 2022 before decreasing to *** pounds in 2023).²⁶ Subject imports' share of total apparent U.S. consumption by quantity increased *** percentage points from 2021 to 2023 (from *** percent in 2021 to *** percent in 2022 and 2023).²⁷ Subject import shipments were *** percent higher in interim 2024 than interim 2023 (*** pounds compared to *** pounds).²⁸ Subject imports' share of apparent U.S. consumption was *** percentage points higher in interim 2024 than interim 2023 (*** percent compared to *** percent).²⁹

U.S. shipments of imports from nonsubject sources increased *** percent from 2021 to 2023 (increasing from *** pounds in 2021 to *** pounds in 2022 and to *** pounds in 2023). Nonsubject imports' share of total apparent U.S. consumption by quantity increased *** percentage points from 2021 to 2023 (from *** percent in 2021 to *** percent in 2022 and to *** percent in 2023). Nonsubject import shipments were *** percent lower in interim 2024 than interim 2023 (*** pounds compared to *** pounds). Nonsubject imports' share of apparent U.S. consumption was *** percentage points lower in interim 2024 than interim 2023 (*** percent compared to *** percent).

²⁶ U.S. shipments of imports from China increased *** percent irregularly from 2021 to 2023 (increasing from *** pounds in 2021 to *** pounds in 2022 before decreasing to *** pounds in 2023). U.S. shipments of imports from India increased *** percent from 2021 to 2023 (increasing from *** pounds in 2021 to *** pounds in 2022 and to *** pounds in 2023).

²⁷ U.S. shipments of imports from China's share of total apparent U.S. consumption by quantity increased *** percentage points irregularly from 2021 to 2023 (from *** percent in 2021 to *** percent in 2022 and to *** percent in 2023). U.S. shipments of imports from India's share of total apparent U.S. consumption by quantity increased *** percentage points from 2021 to 2023 (from *** percent in 2021 to *** percent in 2022 and to *** percent in 2023).

²⁸ U.S. shipments of imports from China were *** percent higher in interim 2024 than interim 2023 (*** pounds compared to *** pounds). U.S. shipments of imports from India were *** percent higher in interim 2024 than interim 2023 (*** pounds compared to *** pounds).

²⁹ U.S. shipments of imports from China's share of apparent U.S. consumption was *** percentage points higher in interim 2024 than interim 2023 (*** percent compared to *** percent). U.S. shipments of imports from India's share of apparent U.S. consumption was *** percent higher in interim 2024 than interim 2023 (*** percent compared to *** percent).

Table 4.8 2,4-D: Apparent U.S. consumption and market shares for the total market, defining the U.S. industry as the U.S. producer Corteva, based on quantity data, by source and period

Quantity in 1,000 pounds dry weight acid equivalent; shares in percent; interim is January to September

Source	Measure	2021	2022	2023	Interim 2023	Interim 2024
U.S. producer Corteva	Quantity	***	***	***	***	***
China	Quantity	***	***	***	***	***
India	Quantity	***	***	***	***	***
Subject sources	Quantity	***	***	***	***	***
Nonsubject sources	Quantity	***	***	***	***	***
All import sources	Quantity	***	***	***	***	***
All sources	Quantity	***	***	***	***	***
U.S. producer Corteva	Share	***	***	***	***	***
China	Share	***	***	***	***	***
India	Share	***	***	***	***	***
Subject sources	Share	***	***	***	***	***
Nonsubject sources	Share	***	***	***	***	***
All import sources	Share	***	***	***	***	***
All sources	Share	100.0	100.0	100.0	100.0	100.0

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

Figure 4.5 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.

Note: DWAE = dry weight acid equivalent.

Merchant market by quantity

Table 4.9 and figure 4.6 present data on apparent U.S. consumption and U.S. market shares by quantity for 2,4-D for the merchant market when defining the U.S. industry as the U.S. producer Corteva.³⁰ Merchant market apparent U.S. consumption by quantity increased *** percent irregularly from 2021 to 2023 (increasing from *** pounds in 2021 to *** pounds in 2022 before decreasing to *** pounds in 2023). Total apparent U.S. consumption by quantity was *** percent higher in interim 2024 than interim 2023 (*** pounds compared to *** pounds).

U.S. producer Corteva's U.S. commercial and swap shipments decreased *** percent from 2021 to 2023 (decreasing from *** pounds in 2021 to *** pounds in 2022 and to *** pounds in 2023). Corteva's share of merchant market apparent U.S. consumption by quantity decreased *** percentage points from 2021 to 2023 (decreasing from *** percent in 2021 to *** percent in 2022 and to *** percent in 2023). Corteva's U.S. shipments were *** percent lower in interim 2024 than interim 2023 (*** pounds compared to *** pounds). The company's share of apparent U.S. consumption was *** percentage points lower in interim 2024 than interim 2023 (*** percent compared to *** percent).

Subject imports' share of the value of merchant market apparent U.S. consumption by quantity increased *** percentage points from 2021 to 2023 (from *** percent in 2021 to *** percent in 2022 and 2023).³¹ Subject imports' share of apparent U.S. consumption was *** percentage points higher in interim 2024 than interim 2023 (*** percent compared to *** percent).³² Nonsubject imports' share of apparent U.S. consumption by quantity increased *** percentage points from 2021 to 2023 (from *** percent in 2021 and 2022 and to *** percent in 2023). Nonsubject imports' share of merchant market apparent U.S. consumption was *** percentage points lower in interim 2024 than interim 2023 (*** percent compared to *** percent).

³⁰ ***.

³¹ U.S. shipments of imports from China's share of the value of merchant market apparent U.S. consumption increased *** percentage points irregularly from 2021 to 2023 (from *** percent in 2021 to *** percent in 2022 and to *** percent in 2023). U.S. shipments of imports from India's share of total apparent U.S. consumption by quantity increased *** percentage points from 2021 to 2023 (from *** percent in 2021 to *** percent in 2022 and to *** percent in 2023).

³² U.S. shipments of imports from China's share of apparent U.S. consumption was *** percentage points higher in interim 2024 than interim 2023 (*** percent compared to *** percent). U.S. shipments of imports from India's share of apparent U.S. consumption was *** percentage points higher in interim 2024 than interim 2023 (*** percent compared to *** percent).

Table 4.9 2,4-D: Apparent U.S. consumption and market shares for the merchant market, defining the U.S. industry as the U.S. producer Corteva, based on quantity data, by source and period

Quantity in 1,000 pounds dry weight acid equivalent; shares in percent; interim period is January through September

Source	Measure	2021	2022	2023	Interim 2023	Interim 2024
U.S. producer Corteva	Quantity	***	***	***	***	***
China	Quantity	***	***	***	***	***
India	Quantity	***	***	***	***	***
Subject sources	Quantity	***	***	***	***	***
Nonsubject sources	Quantity	***	***	***	***	***
All import sources	Quantity	***	***	***	***	***
All sources	Quantity	***	***	***	***	***
U.S. producer Corteva	Share	***	***	***	***	***
China	Share	***	***	***	***	***
India	Share	***	***	***	***	***
Subject sources	Share	***	***	***	***	***
Nonsubject sources	Share	***	***	***	***	***
All import sources	Share	***	***	***	***	***
All sources	Share	100.0	100.0	100.0	100.0	100.0

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

Figure 4.6 2,4-D: Apparent U.S. consumption for the merchant market, defining the U.S. industry as the U.S. producer Corteva, based on quantity data, by source and period

* * * * *

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

Note: DWAE = dry weight acid equivalent.

Value

Tables 4.10 and 4.11 and figures 4.7 and 4.8 present apparent U.S. consumption and U.S. market shares by value for the total and merchant markets.

Total market by value

Table 4.10 and figure 4.7 present data on apparent U.S. consumption and U.S. market shares for the total market by value for 2,4-D when defining the U.S. industry as the U.S. producer Corteva. Total apparent U.S. consumption by value increased *** percent irregularly from 2021 to 2023 (increasing from \$*** in 2021 to \$*** in 2022 before decreasing to \$*** in 2023). Total apparent U.S. consumption by value was *** percent lower in interim 2024 than interim 2023 (\$*** compared to \$***).

U.S. producer Corteva's total U.S. shipments decreased *** percent irregularly by value from 2021 to 2023 (increasing from \$*** in 2021 to \$*** in 2022 before decreasing to \$*** in 2023). Corteva's share of total apparent U.S. consumption by value decreased *** percentage points from 2021 to 2023 (decreasing from *** percent in 2021 to *** percent in 2022 and to *** percent in 2023). The value of Corteva's U.S. shipments was *** percent lower in interim 2024 than interim 2023 (\$*** compared to \$***). The company's share of apparent U.S. consumption was *** percentage points lower in interim 2024 than interim 2023 (*** percent compared to *** percent).

The value of U.S. shipments of imports from subject sources increased *** percent irregularly from 2021 to 2023 (increasing from \$*** in 2021 to \$*** in 2022 before decreasing to \$*** in 2023).³³ Subject imports' share of total apparent U.S. consumption by value increased *** percentage points irregularly from 2021 to 2023 (from *** percent in 2021 to *** percent in 2022 and to *** percent in 2023).³⁴ Subject imports were *** percent higher in interim 2024 than interim 2023 (\$*** compared to \$***).³⁵ Subject import shipments' apparent U.S. consumption share was *** percentage points higher in interim 2024 than interim 2023 (*** percent compared to *** percent).³⁶

The value of U.S. shipments of nonsubject imports increased *** percent from 2021 to 2023 (increasing from \$*** in 2021 to \$*** in 2022 and to \$*** in 2023). Nonsubject imports' share of total apparent U.S. consumption by value increased *** percentage points from 2021 to 2023 (from *** percent in 2021 to *** percent in 2022 and to *** percent in 2023). The value of nonsubject import shipments was *** percent lower in interim 2024 than interim 2023 (\$*** compared to \$***). Nonsubject imports' share of apparent U.S. consumption by value was *** percentage points lower in interim 2024 than interim 2023 (*** percent compared to *** percent).

³³ The value of U.S. shipments of imports from China increased *** percent irregularly from 2021 to 2023 (increasing from \$*** in 2021 to \$*** in 2022 before decreasing to \$*** in 2023). U.S. shipments of imports from India increased *** percent irregularly from 2021 to 2023 (increasing from \$*** in 2021 to \$*** in 2022 before decreasing to \$*** in 2023).

³⁴ U.S. shipments of imports from China's share of total apparent U.S. consumption by value increased *** percentage points irregularly from 2021 to 2023 (from *** percent in 2021 to *** percent in 2022 and to *** percent in 2023). U.S. shipments of imports from India's share of total apparent U.S. consumption by value increased *** percentage points from 2021 to 2023 (from *** percent in 2021 to *** percent in 2022 and to *** percent in 2023).

³⁵ U.S. shipments of imports from China were *** percent higher in interim 2024 than interim 2023 (\$*** compared to \$***). U.S. shipments of imports from India were *** percent higher in interim 2024 than interim 2023 (\$*** compared to \$***).

³⁶ U.S. shipments of imports from China's share of apparent U.S. consumption was *** percentage points higher in interim 2024 than interim 2023 (*** percent compared to *** percent). U.S. shipments of imports from India's share of apparent U.S. consumption was *** percentage points higher in interim 2024 than interim 2023 (*** percent compared to *** percent).

Table 4.10 2,4-D: Apparent U.S. consumption and market shares for the total market, defining the U.S. industry as the U.S. producer Corteva, based on value data, by source and period

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

Source	Measure	2021	2022	2023	Interim 2023	Interim 2024
U.S. producer Corteva	Value	***	***	***	***	***
China	Value	***	***	***	***	***
India	Value	***	***	***	***	***
Subject sources	Value	***	***	***	***	***
Nonsubject sources	Value	***	***	***	***	***
All import sources	Value	***	***	***	***	***
All sources	Value	***	***	***	***	***
U.S. producer Corteva	Share	***	***	***	***	***
China	Share	***	***	***	***	***
India	Share	***	***	***	***	***
Subject sources	Share	***	***	***	***	***
Nonsubject sources	Share	***	***	***	***	***
All import sources	Share	***	***	***	***	***
All sources	Share	100.0	100.0	100.0	100.0	100.0

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

Figure 4.7 2,4-D: Apparent U.S. consumption for the total market, defining the U.S. industry as the U.S. producer Corteva, based on value data, by source and period

* * * * *

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

Merchant market by value

Table 4.11 and figure 4.8 present data on apparent U.S. consumption and U.S. market shares for the merchant market by value for 2,4-D when defining the U.S. industry as the U.S. producer Corteva.³⁷ The value of apparent U.S. consumption in the merchant market increased *** percent irregularly from 2021 to 2023 (increasing from \$*** in 2021 to \$*** in 2022 before decreasing to \$*** in 2023). Total apparent U.S. consumption by value was *** percent lower in interim 2024 than interim 2023 (\$*** compared to \$***).

The value of U.S. producer Corteva's U.S. merchant market shipments decreased *** percent from 2021 to 2023 (from \$*** in 2021 to \$*** in 2022 and to \$*** in 2023). Corteva's share of total apparent U.S. consumption by value decreased *** percentage points from 2021 to 2023 (decreasing from *** percent in 2021 to *** percent in 2022 and to *** percent in 2023). The value of Corteva's U.S. merchant market shipments was *** percent lower in interim 2024 than interim 2023 (*** compared to \$***). The company's share of apparent U.S. consumption was *** percentage points lower in interim 2024 than interim 2023 (*** percent compared to *** percent).

Subject imports' share of merchant market apparent U.S. consumption by value increased *** percentage points irregularly from 2021 to 2023 (from *** percent in 2021 to *** percent in 2022 and to *** percent in 2023).³⁸ Subject imports' share of apparent U.S. consumption was *** percentage points higher in interim 2024 than interim 2023 (*** percent compared to *** percent).³⁹ Nonsubject imports' share of merchant market apparent U.S. consumption by value increased *** percentage points irregularly from 2021 to 2023 (decreasing from *** percent in 2021 to *** percent in 2022 before increasing to *** percent in 2023). Nonsubject imports' share of apparent U.S. consumption was *** percentage points lower in interim 2024 than interim 2023 (*** percent compared to *** percent).

³⁷ Merchant market data includes both the U.S. commercial shipments and swap shipments as reported by Corteva.

³⁸ U.S. shipments of imports from China's share of total apparent U.S. consumption by value increased *** percentage points irregularly from 2021 to 2023 (increasing from *** percent in 2021 to *** percent in 2022 before decreasing to *** percent in 2023). U.S. shipments of imports from India's share of total apparent U.S. consumption by value increased *** percentage points from 2021 to 2023 (from *** percent in 2021 to *** percent in 2022 and to *** percent in 2023).

³⁹ U.S. shipments of imports from China's share of apparent U.S. consumption was *** percentage points higher in interim 2024 than interim 2023 (*** percent compared to *** percent). U.S. shipments of imports from India's share of apparent U.S. consumption was *** percentage points higher in interim 2024 than interim 2023 (*** percent compared to ***).

Table 4.11 2,4-D: Apparent U.S. consumption and market shares for the merchant market, defining the U.S. industry as the U.S. producer Corteva, based on value data, by source and period

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

Source	Measure	2021	2022	2023	Interim 2023	Interim 2024
U.S. producer Corteva	Value	***	***	***	***	***
China	Value	***	***	***	***	***
India	Value	***	***	***	***	***
Subject sources	Value	***	***	***	***	***
Nonsubject sources	Value	***	***	***	***	***
All import sources	Value	***	***	***	***	***
All sources	Value	***	***	***	***	***
U.S. producer Corteva	Share	***	***	***	***	***
China	Share	***	***	***	***	***
India	Share	***	***	***	***	***
Subject sources	Share	***	***	***	***	***
Nonsubject sources	Share	***	***	***	***	***
All import sources	Share	***	***	***	***	***
All sources	Share	100.0	100.0	100.0	100.0	100.0

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

Figure 4.8 2,4-D: Apparent U.S. consumption for the merchant market, defining the U.S. industry as the U.S. producer Corteva, based on value data, by source and period

* * * * *

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

Part 5: 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. The petitioner, U.S. producer Corteva, also noted that the cost of chlorine has caused an increase in raw material prices during this period of investigation. Raw materials, as a share of the cost of goods sold (“COGS”), increased from *** percent in 2021 to *** percent in 2023.

U.S. producer Corteva reported that raw material prices ***, while all but two responding U.S. importers reported that raw material prices either fluctuated up or fluctuated down.

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 6.4 percent for India during 2023. These estimates were derived from official import data and represent the transportation and other charges on imports.¹

U.S. inland transportation costs

U.S. producer Corteva reported that it typically *** arrange transportation to its customers. All responding importers reported that they typically arrange transportation to their customers. U.S. producer Corteva reported that its U.S. inland transportation cost was *** percent, and importers reported costs ranging from 3.0 to 10.0 percent.

¹ 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.

Pricing practices

Pricing methods

U.S. producer Corteva reported setting prices using ***. Most importers reported setting prices using transaction-by-transaction negotiations, and two importers using a set price list (table 5.1).²

Table 5.1 2,4-D: Count of the U.S. producer's and importers' reported price setting methods

Method	U.S. producer	Importers
Transaction-by-transaction	***	6
Contract	***	0
Set price list	***	2
Other	***	1
Responding firms	***	8

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

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

U.S. producer Corteva reported selling *** of its 2,4-D pursuant ***. Subject importers reported selling all of their 2,4-D in the spot market (table 5.2).

Table 5.2 2,4-D: U.S. producer's and importers' shares of commercial U.S. shipments by type of sale, 2023

Share in percent

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

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

² One importer, ***, reported “other”, and that its sales are on a purchase-order basis.

U.S. producer Corteva reported ***. Six responding importers reported that typical contract provisions did not apply. One importer reported not renegotiating price, fixing to both price and quantity, and not indexing to raw materials for its short-term contracts. One importer reported not renegotiating price, fixing to price, and not indexing to raw materials for its one year contracts. Eight purchasers purchase monthly, 3 purchase annually, 3 reported another purchasing frequency, 1 purchases weekly, and none reported purchasing daily. Thirteen of 15 responding purchasers reported that their purchasing frequency had not changed since 2021. Purchasers reported contacting between 1 to 7 suppliers, with a plurality of purchasers contact 1 to 2 suppliers before making a purchase.

Sales terms and discounts

U.S. producer Corteva typically quotes prices on ***. All importers typically quote prices on a delivered basis and all but one reported not offering a discount policy.³

Price leadership

Ten purchasers reported that there were price leaders in the 2,4-D market. Five purchasers reported that Corteva was a price leader, three each reported that Albaugh or Sharda were, two reported that PBI-Gordon was, and one each reported that Alligare, CAC (Tianyu), Drexel, and NuFarm were. Purchasers indicating the presence of price leaders reported that Corteva led by being the industry leader upon which others base their prices, establishing the highest pricing, selling material globally, that their Enlist product has no substitutes or competition, and purchasing or swapping material with other producers to supply material requirements in other regions of the world. Purchasers reported that Albaugh was a price leader by delaying price increases until shortly before it delivers product to its warehouse locations and moving pricing up during shortages. One purchaser reported that PBI-Gordon was a price leader because it is usually the first to provide updated pricing. One purchaser, ***, reported that pricing is largely driven by market demand rather than producers, and *** reported that all firms are price leaders because they communicate price changes into the market on new volumes of product that impact the current market price.

³ U.S. importer *** reported offering quantity discounts.

Price and purchase cost data

The Commission requested that the U.S. producer and importers 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 to September 2024. Firms that imported these products from China and India for internal use 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 choline salt, Form: any

Product 3.— 2,4-D non-choline salt, Form: any

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

Price data

U.S. producer Corteva and 8 importers provided usable pricing data for sales of the requested products, although not all firms reported pricing for all products for all quarters.⁴ Pricing data reported by these firms accounted for approximately *** percent of U.S. producer Corteva’s U.S. commercial shipments, *** of U.S. commercial shipments from China, and *** percent of U.S. commercial shipments from India in 2023. Price data for products 1, 2, and 4 are presented in tables 5.3 to 5.5 and figures 5.1 to 5.3. U.S. producer Corteva ***.⁵ No importers reported price data for product 3 from China and products 2 and 3 from India.

⁴ Per-unit pricing data are calculated from total quantity and total value data provided by the U.S. producer and importers. The precision and variation of these figures may be affected by rounding, limited quantities, and producer or importer estimates.

⁵ Corteva’s reported data for pricing product 1 (2,4-D acid, Form: white to brown crystalline solid) made up *** percent of its reported pricing product data by quantity in 2021, *** percent in 2022, and *** percent in 2023. Product 4 (2,4-D 2-ethylhexylester (“EHE”), Form: dark amber liquid) made up *** of Corteva’s pricing product data in 2021, *** percent in 2022, and *** percent in 2023.

Table 5.3 2,4-D: Weighted-average f.o.b. prices and quantities of domestic and imported product 1 and margins of underselling/(overselling), by source and quarter

Price in dollars per pound DWAE, quantity in 1,000 pounds DWAE, margin 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	***	***	***	***	***	***	***	***
2024 Q1	***	***	***	***	***	***	***	***
2024 Q2	***	***	***	***	***	***	***	***
2024 Q3	***	***	***	***	***	***	***	***

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

Note: Product 1: 2,4-D acid, Form: white to brown crystalline solid. DWAE = dry weight acid equivalent.

Note: ***. Staff also excluded U.S. importer ***. U.S. importer ***.

Figure 5.1 2,4-D: Weighted-average f.o.b. prices and quantities of domestic and imported product 1, by source and quarter

Price of product 1

* * * * *

Volume of product 1

* * * * *

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

Note: Product 1: 2,4-D acid, Form: white to brown crystalline solid. DWAE = dry weight acid equivalent.

Table 5.4 2,4-D: Weighted-average f.o.b. prices and quantities of domestic and imported product 2 and margins of underselling/(overselling), by source and quarter

Price in dollars per pound DWAE, quantity in 1,000 pounds DWAE, margin in percent.

Period	China price	China quantity	China margin
2021 Q1	***	***	***
2021 Q2	***	***	***
2021 Q3	***	***	***
2021 Q4	***	***	***
2022 Q1	***	***	***
2022 Q2	***	***	***
2022 Q3	***	***	***
2022 Q4	***	***	***
2023 Q1	***	***	***
2023 Q2	***	***	***
2023 Q3	***	***	***
2023 Q4	***	***	***
2024 Q1	***	***	***
2024 Q2	***	***	***
2024 Q3	***	***	***

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

Note: Product 2: 2,4-D choline salt, Form: any. DWAE = dry weight acid equivalent.

Figure 5.2 2,4-D: Weighted-average f.o.b. prices and quantities of domestic and imported product 2, by source and quarter

Price of product 2

* * * * *

Volume of product 2

* * * * *

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

Note: Product 2: 2,4-D choline salt, Form: any. DWAE = dry weight acid equivalent.

Table 5.5 2,4-D: Weighted-average f.o.b. prices and quantities of domestic and imported product 4 and margins of underselling/(overselling), by source and quarter

Price in dollars per pound DWAE, quantity in 1,000 pounds DWAE, margin 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	***	***	***	***	***	***	***	***
2024 Q1	***	***	***	***	***	***	***	***
2024 Q2	***	***	***	***	***	***	***	***
2024 Q3	***	***	***	***	***	***	***	***

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

Note: Product 4: 2,4-D 2-ethylhexylester ("EHE"), Form: dark amber liquid. DWAE = dry weight acid equivalent.

Figure 5.3 2,4-D: Weighted-average f.o.b. prices and quantities of domestic and imported product 4, by source and quarter

Price of product 4

* * * * *

Volume of product 4

* * * * *

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

Note: Product 4: 2,4-D 2-ethylhexylester ("EHE"), Form: dark amber liquid. DWAE = dry weight acid equivalent.

Import purchase cost data

Four importers reported useable import purchase cost data for product 1. Purchase cost data reported by these firms accounted for *** percent of overall U.S. imports from China and *** percent of overall U.S. imports from India in 2023. Landed duty-paid purchase cost data for imports from China and India are presented in table 5.6, along with U.S. producer Corteva's sales prices.⁶

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

One importer (***) of three reported that it incurred additional costs beyond landed duty-paid costs by importing 2,4-D itself rather than purchasing from a U.S. producer or U.S. importer; it identified the following costs compared to the landed duty-paid value, totaling *** percent: ***, capital costs (**% percent), and an Asian procurement team (**% percent).

*** reported that it compares the costs of importing to the cost of purchasing from the U.S. producer in determining whether to import 2,4-D. It reported that the main benefit is supplier redundancy since Corteva is the only U.S. producer and that it only increased its imports when Corteva decided to stop supplying 2,4-D to its firm.

*** also reported that the import costs (both excluding and including additional costs) of 2,4-D it imported are lower than the price of purchasing 2,4-D from a U.S. producer or importer and estimated that it saved *** percent of the purchase price by importing rather than purchasing from a U.S. producer.

⁶ Landed duty-paid ("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. No purchase cost data were reported for Products 2, 3, or 4.

Table 5.6 2,4-D: Import landed duty-paid purchase costs and domestic prices, quantities of product 1, and price-cost differentials, by quarter

Price and LDP value in dollars per pound DWAE, quantity in 1,000 pounds DWAE, price-cost differential in percent.

Period	U.S. price	U.S. quantity	China LDP unit cost	China quantity	China Price-cost differential	India LDP unit cost	India quantity	India Price-cost differential
2021 Q1	***	***	***	***	***	***	***	***
2021 Q2	***	***	***	***	***	***	***	***
2021 Q3	***	***	***	***	***	***	***	***
2021 Q4	***	***	***	***	***	***	***	***
2022 Q1	***	***	***	***	***	***	***	***
2022 Q2	***	***	***	***	***	***	***	***
2022 Q3	***	***	***	***	***	***	***	***
2022 Q4	***	***	***	***	***	***	***	***
2023 Q1	***	***	***	***	***	***	***	***
2023 Q2	***	***	***	***	***	***	***	***
2023 Q3	***	***	***	***	***	***	***	***
2023 Q4	***	***	***	***	***	***	***	***
2024 Q1	***	***	***	***	***	***	***	***
2024 Q2	***	***	***	***	***	***	***	***
2024 Q3	***	***	***	***	***	***	***	***

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

Note: Product 1: 2,4-D acid, Form: white to brown crystalline solid. DWAE = dry weight acid equivalent.

Note: U.S. producer price data are the same as those presented in table 5.3.

Figure 5.4 2,4-D: U.S. producer prices and import purchase costs, and quantities, of product 1, by source and quarter

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. DWAE = dry weight acid equivalent.

Price and purchase cost trends

In general, subject import prices for Products 1 and 2 were higher in July to September 2024 than in January to March 2021, and prices for Product 4 were lower in July to September 2024 than in January to March 2021. Table 5.7 summarizes the price and import purchase cost trends, by country and by product.

Table 5.7 2,4-D: Summary of price and purchase cost data, by product and source, January 2021 through September 2024

Volume in 1,000 pounds DWAE, price and cost in dollars per pound DWAE

Product	Source	Number of quarters	Volume of shipments	Low price	High price	First quarter price	Last quarter price	Percent change in price over period
Product 1	United States	11	***	***	***	***	***	***
Product 1	China price	13	***	***	***	***	***	***
Product 1	China cost	14	***	***	***	***	***	***
Product 1	India price	14	***	***	***	***	***	***
Product 1	India cost	13	***	***	***	***	***	***
Product 2	China price	2	***	***	***	***	***	***
Product 4	United States	11	***	***	***	***	***	***
Product 4	China price	8	***	***	***	***	***	***
Product 4	India price	6	***	***	***	***	***	***

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

Note: Zeroes, null values, and undefined calculations are suppressed and shown as “—”. Percentage change from the first quarter in which data were available in 2021 to the last quarter in which data were available in 2024. DWAE = dry weight acid equivalent.

Table 5.8 2,4-D: Indexed U.S. producer prices, by quarter and product

Indexed prices in percent; 2021 Q1 = 100.0 percent

Period	Product 1	Product 4
2021 Q1	100.0	100.0
2021 Q2	***	***
2021 Q3	***	***
2021 Q4	***	***
2022 Q1	***	***
2022 Q2	***	***
2022 Q3	***	***
2022 Q4	***	***
2023 Q1	***	***
2023 Q2	***	***
2023 Q3	***	***
2023 Q4	***	***
2024 Q1	***	***
2024 Q2	***	***
2024 Q3	***	***

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

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

Figure 5.5 2,4-D: Indexed U.S. producer prices, by quarter and product

* * * * *

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

Table 5.9 2,4-D: Indexed U.S. importer prices, by quarter and product

Indexed prices in percent; 2021 Q1 = 100.0 percent

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

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

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

Figure 5.6 2,4-D: Indexed U.S. importer prices, by quarter

* * * * *

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

Table 5.10 2,4-D: Indexed U.S. import purchase costs, by quarter

Indexed prices in percent; 2021 Q1 = 100.0 percent

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

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

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

Figure 5.7 2,4-D: Indexed U.S. importer purchase costs, by quarter

* * * * *

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

Price and purchase cost comparisons

Price comparisons

As shown in table 5.12, prices for product imported from China were below those for U.S.-produced product in 5 of 13 instances (** pounds DWAE); margins of underselling ranged from ** percent. In the remaining 8 instances (** pounds DWAE), prices for product from China were between ** percent above prices for the domestic product. Prices for product imported from India were below those for U.S.-produced product in 12 of 16 instances (** pounds DWAE); margins of underselling ranged from ** percent. In the remaining 4 instances (** pounds DWAE), prices for product from India were between ** percent above prices for the domestic product.

Table 5.11 2,4-D: Instances of underselling and overselling and the range and average of margins, by product

Quantity in 1,000 pounds DWAE; margin in percent

Product	Type	Number of quarters	Quantity	Average margin	Min margin	Max margin
Product 1	Underselling	13	**	**	**	**
Product 4	Underselling	4	**	**	**	**
Total	Underselling	17	**	**	**	**
Product 1	Overselling	7	**	**	**	**
Product 4	Overselling	5	**	**	**	**
Total	Overselling	12	**	**	**	**

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. DWAE = dry weight acid equivalent. U.S. producer Corteva **. No importers reported price data for product 3 from China and products 2 and 3 from India.

Table 5.12 2,4-D: Instances of underselling and overselling and the range and average of margins, by source

Quantity in 1,000 pounds DWAE; margin in percent

Source	Type	Number of quarters	Quantity	Average margin	Min margin	Max margin
China	Underselling	5	***	***	***	***
India	Underselling	12	***	***	***	***
Total	Underselling	17	***	***	***	***
China	Overselling	8	***	***	***	***
India	Overselling	4	***	***	***	***
Total	Overselling	12	***	***	***	***

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. DWAE = dry weight acid equivalent.

Table 5.13 2,4-D: Instances of underselling and overselling and the range and average of margins, by year

Quantity in 1,000 pounds DWAE; margin in percent

Year	Type	Number of quarters	Quantity	Average margin	Min margin	Max margin
2021	Underselling	5	***	***	***	***
2022	Underselling	4	***	***	***	***
2023	Underselling	8	***	***	***	***
Total, all years	Underselling	17	***	***	***	***
2021	Overselling	2	***	***	***	***
2022	Overselling	7	***	***	***	***
2023	Overselling	3	***	***	***	***
Total, all years	Overselling	12	***	***	***	***

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. DWAE = dry weight acid equivalent.

Price-cost comparisons

As shown in table 5.15, landed duty-paid costs for 2,4-D imported from China were below the sales price for U.S.-produced product in 8 of 10 instances (** pounds DWAE); price-cost differentials ranged from ** percent. Landed duty-paid costs for 2,4-D imported from India were below the sales price for U.S.-produced product in 1 of 9 instances (** pounds DWAE); the price-cost differential was ** percent.

Table 5.14 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 DWAE; price-cost differential in percent

Product	Type	Number of quarters	Quantity	Average price-cost differential	Min price-cost differential	Max price-cost differential
Product 1	Lower than U.S. price	9	***	***	***	***
Total	Lower than U.S. price	9	***	***	***	***
Product 1	Higher than U.S. price	10	***	***	***	***
Total	Higher than U.S. price	10	***	***	***	***

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. DWAE = dry weight acid equivalent. No purchase cost data were reported for Products 2, 3, or 4.

Table 5.15 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 DWAE; price-cost differential in percent

Source	Type	Number of quarters	Quantity	Average price-cost differential	Min price-cost differential	Max price-cost differential
China	Lower than U.S. price	8	***	***	***	***
India	Lower than U.S. price	1	***	***	***	***
Total	Lower than U.S. price	9	***	***	***	***
China	Higher than U.S. price	2	***	***	***	***
India	Higher than U.S. price	8	***	***	***	***
Total	Higher than U.S. price	10	***	***	***	***

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. DWAE = dry weight acid equivalent.

Table 5.16 2,4-D: Instances of lower and higher import purchase costs and the range and average of price-cost differentials, by year

Quantity in 1,000 pounds DWAE; margin in percent

Year	Type	Number of quarters	Quantity	Average price-cost differential	Min price-cost differential	Max price-cost differential
2021	Lower than U.S. price	5	***	***	***	***
2022	Lower than U.S. price	2	***	***	***	***
2023	Lower than U.S. price	2	***	***	***	***
Total, all years	Lower than U.S. price	9	***	***	***	***
2021	Higher than U.S. price	2	***	***	***	***
2022	Higher than U.S. price	6	***	***	***	***
2023	Higher than U.S. price	2	***	***	***	***
Total, all years	Higher than U.S. price	10	***	***	***	***

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. DWAE = dry weight acid equivalent.

Lost sales and lost revenue

In the preliminary phase of these investigations, the Commission requested that U.S. producer Corteva report purchases with which it experienced instances of lost sales or revenue due to competition from imports of 2,4-D from China during January 2021 to December 2023. U.S. producer Corteva submitted lost sales and lost revenue allegations, identifying ***, and reported that it ***.

Staff contacted 43 purchasers and received responses from 15 purchasers. Responding purchasers reported importing and purchasing *** pounds DWAE of 2,4-D during January 2021 to September 2024 (table 5.17).

Of the 15 purchasers, 6 reported that, since 2021, they had purchased imported 2,4-D from China and 4 reported that they had purchased 2,4-D imported from India instead of U.S.-produced product. Four of these purchasers reported that imports from China were priced lower than U.S.-produced product and 3 reported that imports from India were priced lower than U.S.-produced product. Two of these purchasers reported that price was a primary reason for the decision to purchase 2,4-D imported from China and 1 reported that it was for the decision to purchase from India rather than U.S.-produced product. Two purchasers, ***, estimated the quantity of 2,4-D from China and India purchased instead of domestic product and estimated this quantity at *** pounds DWAE and *** pounds DWAE respectively (table 5.18). Purchasers identified risk mitigation/secondary supply options and Corteva's decision to stop supplying 2,4-D commodities as non-price reasons for purchasing imported rather than U.S.-produced product.

Of the 15 responding purchasers, 2 each (***) reported that the U.S. producer had reduced prices in order to compete with lower-priced imports from China and India; 8 and 9, respectively, reported that they did not know. The reported estimated price reductions were *** percent. In describing the price reductions, *** indicated that it believes the reduction in the U.S. price was the result of reductions in the market price and added that it ***, while *** reported that the price went from approximately *** per gallon for LV6 down to *** per gallon.

Quantity in 1,000 pounds DWAE, share in percent

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

5.23

Table 5.18 2,4-D: Purchasers' responses to purchasing subject imports instead of domestic product, by firm

Quantity in 1,000 pounds DWAE; count in number of firms reporting

Firm	Purchased subject imports instead of domestic	Imports priced lower	Choice based on price	Quantity	Narrative on reasons for purchasing imports
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***

Table continued.

Table 5.18 Continued 2,4-D: Purchasers' responses to purchasing subject imports instead of domestic product, by firm

Quantity in 1,000 pounds DWAE; count in number of firms reporting

Firm	Purchased subject imports instead of domestic	Imports priced lower	Choice based on price	Quantity	Narrative on reasons for purchasing imports
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
All firms	Yes: 6; No: 9	Yes: 5; No: 1	Yes: 2; No: 4	***	NA

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

Note: DWAE = dry weight acid equivalent.

Table 5.19 2,4-D: Purchasers' responses to purchasing subject imports instead of domestic product, by source

Quantity in 1,000 pounds DWAE; count in number of firms reporting

Source	Purchased subject imports instead of domestic	Imports priced lower	Choice based on price	Quantity
China	6	4	2	***
India	4	3	1	***
Subject sources	6	5	2	***

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

Note: DWAE = dry weight acid equivalent.

Part 6: Financial experience of U.S. producers

Background¹

The petitioner, Corteva, is the sole U.S. producer of 2,4-D acid and also produces 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 steadily increased from 2021 to 2023 and accounted for the large majority of Corteva's revenue (***) percent).^{4 5} Commercial sales (including swap transactions) steadily decreased during this period and accounted for *** percent of overall net sales.^{6 7 8}

Operations on 2,4-D

Table 6.1 presents aggregated data on Corteva's 2,4-D operations in the overall market (also referred to as the "total market" elsewhere in this report), while table 6.2 presents

¹ The following abbreviations are used in the tables and/or text of this section: generally accepted accounting principles ("GAAP"), fiscal year ("FY"), fair market value ("FMV"), 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"), return on assets ("ROA"), dry weight acid equivalent ("DWAE"), January 1, 2021 to September 30, 2024 ("period examined"), January 1, 2023 to September 30, 2023 ("interim 2023"), and January 1, 2024 to September 30, 2024 ("interim 2024").

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. Staff conducted a verification of the financial section of Corteva's U.S. producer questionnaire. ***. Staff verification report, Corteva, April 21, 2025.

³ Corteva estimated the shares of 2,4-D sold at its sole production facility in Midland, Michigan plant in 2023 to be: 2,4-D acid form *** percent, 2,4-D ester form *** percent, and 2,4-D salt form *** percent. Corteva's U.S. producer questionnaire, III-5.

⁴ Appendix F presents an alternative of Corteva's financial results using the unit value \$*** of U.S. shipment from all sources in interim 2024 (from table C.1) to approximate FMV in interim 2024 ***.

⁵ ***.

⁶ Swap transactions in this proceeding refer to Corteva's ***. Corteva's U.S. producer questionnaire, III-4 and email from ***, ***, April 24, 2024.

⁷ Tolling arrangements of U.S. producer Corteva accounted for less than *** percent of total production by quantity from 2021 to 2023 ***. *** during the period examined. ***. Corteva's U.S. producer questionnaire, II-4 and staff notes, EDIS Doc. 846174 (March 18, 2025).

⁸ Interim 2024 ***. Staff notes, EDIS Doc. 846174 (March 18, 2025).

corresponding changes in AUVs in the overall market.^{9 10} Table 6.3 presents financial results of Corteva's open market (combined commercial sales and swap transactions), while table 6.4 presents corresponding changes in AUVs in the open market.

⁹ Appendix G presents the expanded U.S. industry's financial results (combining U.S. producer Corteva and four U.S. converters of 2,4-D (***)). *** accounts for *** percent and *** percent of combined net sales quantity and value, respectively, in the overall market from 2021 to interim 2024 (calculated from tables 6.1 and F.1).

¹⁰ *** of 2,4-D reported swap transactions or transfers to related firms during the period examined.

Table 6.1 2,4-D: U.S. producer Corteva's results of operations in the overall market, by item and period

Quantity in 1,000 pounds DWAE; value in 1,000 dollars; ratios in percent; interim is January through September

Item	Measure	2021	2022	2023	Interim 2023	Interim 2024
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	***	***	***	***	***
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 6.1 (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 DWAE; count in number of firms reporting; interim is January through September

Item	Measure	2021	2022	2023	Interim 2023	Interim 2024
COGS: Raw materials	Share	***	***	***	***	***
COGS: Direct labor	Share	***	***	***	***	***
COGS: Other factory	Share	***	***	***	***	***
COGS: Total	Share	100.0	100.0	100.0	100.0	100.0
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: Internal consumption values for 2021, 2022, 2023, and interim 2023 were calculated from ***. Corteva's U.S. producer questionnaire, III-8c. Corteva did not have any commercial sales (non-swap) in interim 2024 and used the average import prices (\$1.16 per pound DWAE, landed duty paid) as the surrogate value for internal consumption in interim 2024. Hearing transcript, p. 38 (Cannistra) and Corteva's posthearing brief, p. 17.

Table 6.2 2,4-D: U.S. producer Corteva's changes in AUVs in the overall market between comparison periods

Changes in percent; interim is January through September

Item	2021-23	2021-22	2022-23	Interim 2023-24
Commercial sales	▼ ***	▲ ***	▼ ***	▲ ***
Swap transactions	▲ ***	▲ ***	▼ ***	▼ ***
Internal consumption	▼ ***	▲ ***	▼ ***	▼ ***
Total net sales	▼ ***	▲ ***	▼ ***	▼ ***
COGS: Raw materials	▲ ***	▲ ***	▲ ***	▼ ***
COGS: Direct labor	▲ ***	▲ ***	▲ ***	▲ ***
COGS: Other factory	▲ ***	▲ ***	▼ ***	▲ ***
COGS: Total	▲ ***	▲ ***	▼ ***	▼ ***

Table continued.

Table 6.2 (Continued) 2,4-D: U.S. producer Corteva's changes in AUVs in the overall market between comparison periods

Changes in dollars per pound DWAE; interim is January through September

Item	2021-23	2021-22	2022-23	Interim 2023-24
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 "0.0" or "0.00" represent values greater than zero, but less than "0.05" or "0.005," respectively. Period changes preceded by a "▲" represent an increase, while period changes preceded by a "▼" represent a decrease.

Table 6.3 2,4-D: U.S. producer Corteva's results of operations in the open market (commercial sales and swap transactions), by item and period

Quantity in 1,000 pounds DWAE; value in 1,000 dollars; ratios in percent; interim is January through September

Item	Measure	2021	2022	2023	Interim 2023	Interim 2024
Commercial sales	Quantity	***	***	***	***	***
Swap transactions	Quantity	***	***	***	***	***
Total net sales	Quantity	***	***	***	***	***
Commercial sales	Value	***	***	***	***	***
Swap transactions	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	***	***	***	***	***
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 6.3 (Continued) 2,4-D: U.S. producer Corteva's results of operations in the open market (commercial sales and swap transactions), by item and period

Shares in percent; unit values in dollars per pound DWAE; count in number of firms reporting; interim is January through September

Item	Measure	2021	2022	2023	Interim 2023	Interim 2024
COGS: Raw materials	Share	***	***	***	***	***
COGS: Direct labor	Share	***	***	***	***	***
COGS: Other factory	Share	***	***	***	***	***
COGS: Total	Share	100.0	100.0	100.0	100.0	100.0
Commercial sales	Unit value	***	***	***	***	***
Swap transactions	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.

Table 6.4 2,4-D: U.S. producer Corteva's changes in AUVs in the open market (commercial sales and swap transactions) between comparison periods

Changes in percent; interim is January through September

Item	2021-23	2021-22	2022-23	Interim 2023-24
Commercial sales	▼ ***	▲ ***	▼ ***	▲ ***
Swap transactions	▲ ***	▲ ***	▼ ***	▼ ***
Total net sales	▲ ***	▲ ***	▼ ***	▲ ***
COGS: Raw materials	▲ ***	▲ ***	▲ ***	▼ ***
COGS: Direct labor	▲ ***	▲ ***	▲ ***	▲ ***
COGS: Other factory	▼ ***	▲ ***	▼ ***	▲ ***
COGS: Total	▲ ***	▲ ***	▼ ***	▲ ***

Table continued.

Table 6.4 (Continued) 2,4-D: U.S. producer Corteva's changes in AUVs in the open market (commercial sales and swap transactions) between comparison periods

Changes in dollars per pound DWAE; interim is January through September

Item	2021-23	2021-22	2022-23	Interim 2023-24
Commercial sales	▼ ***	▲ ***	▼ ***	▲ ***
Swap transactions	▲ ***	▲ ***	▼ ***	▼ ***
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 "0.0" or "0.00" represent values greater than zero, but less than "0.05" or "0.005," respectively. Period changes preceded by a "▲" represent an increase, while period changes preceded by a "▼" represent a decrease.

Net sales

As presented in table 6.1, net sales include commercial sales, internal consumption, and swap transactions.¹¹ In overall operations, net sales quantity and value irregularly decreased from 2021 to 2023; net sales quantity and value were lower in interim 2024 than in interim 2023 (table 6.1). Internal consumption quantity (the largest share of net sales) increased irregularly while the value decreased irregularly from 2021 to 2023; internal consumption quantity was higher while the value was much lower in interim 2024 than in interim 2023.¹² Table 6.3 shows that net sales in the open market (commercial sales and swap transactions) decreased consistently in quantity and value from 2021 to 2023, and were much lower in interim 2024 than in interim 2023.¹³ Differences in net sales sold in the overall market (table 6.1) compared to the open market (table 6.3) were somewhat attributable to differences in product mix, e.g., the three 2,4-D forms (acid, ester, and salt).¹⁴

Net sales AUVs irregularly decreased from 2021 to 2023 in the overall market (table 6.1) while net sales AUVs irregularly increased in the open market (table 6.3). Net sales AUVs were lower in interim 2024 than in interim 2023 in the overall market (table 6.1) but higher in the open market (table 6.3). Internal consumption made up the *** share of sales volume and revenue in Corteva's overall operations, with internal consumption AUVs irregularly declining

¹¹ Internal consumption volume accounted for *** percent in 2021, *** percent in 2022, *** percent in 2023, *** percent in interim 2023, and *** percent in interim 2024 of Corteva's total net sales. Combined commercial sales and swaps volume represented *** percent in 2021, *** percent in 2022, *** percent in 2023, *** percent in interim 2023, and *** percent in interim 2024 of its total net sales. Calculated from data presented in table 6.1.

¹² Internal consumption ***. Corteva's U.S. producer questionnaire, III-8cv. Corteva did not have any commercial sales (non-swap) in interim 2024 and used the average import prices (\$1.16 per pound DWAE, landed duty paid) as the surrogate value for internal consumption in interim 2024. Hearing transcript, p. 38 (Cannistra) and Corteva's posthearing brief, p. 17.

*** per pound DWAE), Corteva's average swap sales value (*** per pound DWAE), interim period changes in Corteva's downstream product value (*** per pound DWAE), and Corteva's *** (*** per pound DWAE). *** Corteva's valuation of internal consumption in interim 2024 from discussion with staff. See EDIS Doc. 848748 (April 15, 2025).

¹³ Corteva ***. ***, ***, April 24, 2024, and staff notes, EDIS Doc. 846174 (March 18, 2025).

¹⁴ Corteva ***. Ibid.

from 2021 to 2023 and also lower in interim 2024 than in interim 2023 (table 6.1).¹⁵ Corteva attributed the declines in sales to ***,¹⁶

Cost of goods sold and gross profit or loss¹⁷

As presented in table 6.1, other factory costs in the overall market accounted for the largest share of total COGS in 2021 (**% percent), 2022 (**% percent), and interim 2024 (**% percent) but accounted for the second largest share of total COGS in 2023 (**% percent).¹⁸ In absolute values, other factory costs irregularly decreased in the overall market (table 6.1) while these costs consistently decreased in the open market (table 6.3) from 2021 to 2023, mostly reflecting Corteva's sales volumes declines; absolute values for other factory costs were higher in interim 2024 than in interim 2023 in both markets. As a ratio to net sales and on a per-unit basis, other factory costs irregularly decreased from 2021 to 2023 in both markets; other factory costs as a ratio to net sales and per unit were higher in interim 2024 than in interim 2023 in both markets (tables 6.1 and 6.3). Corteva explained that *** for increases in other factory costs during the period examined.¹⁹

Raw material costs in the overall market represented the second largest component of total COGS in 2021 (**% percent), 2022 (**% percent), and interim 2024 (**% percent) but accounted for largest share total COGS in 2023 (**% percent).²⁰ In absolute values, raw materials irregularly increased in the overall market (table 6.1) but consistently decreased in the open market (table 6.3) from 2021 to 2023. On a per-unit basis, raw material costs consistently increased in both the overall and open markets (tables 6.1 and 6.3). Absolute and

¹⁵ Commercial sales accounted for the highest AUVs (but the smallest share of sales volume and revenue) in all five periods for which data were collected while swap transactions AUVs were the lowest in all three years examined but not in the two interim periods (table 6.1). As noted earlier, swap transaction quantities and values ***, ***, ***, April 24, 2024 and staff notes, EDIS Doc. 846174 (March 18, 2025).

¹⁶ Corteva's postconference brief, pp. 14-15 and Corteva's U.S. producer questionnaire, III-9g.

¹⁷ Corteva used ***. Corteva's U.S. producer questionnaire, III-8b.

¹⁸ Other factory costs' share of total COGS in the open market was also the largest in four out of five periods for which data were collected, ranging from *** percent of total COGS (table 6.3).

¹⁹ Corteva's U.S. producer questionnaire, III-9g.

²⁰ Raw material costs as a share of total COGS in the open market showed a similar pattern, ranging from *** percent of total COGS (table 6.3).

per unit raw materials were lower in interim 2024 than in interim 2023 in both markets (tables 6.1 and 6.3). As a ratio to net sales, raw materials consistently increased from 2021 to 2023 in both markets and were higher in the overall market but lower in the open market in interim 2024 than in interim 2023. The differing trend of raw materials as a ratio to net sales in the interim data for the open market (table 6.3) is partially attributable to the very low volume of sales (less than *** percent of Corteva’s overall net sales) (table 6.1).²¹ Monochloroacetic acid (“MCAA”) made up the largest share of raw material costs, followed by phenol, caustic soda, then chlorine and hydrochloric acid.²² ²³ Table 6.5 presents Corteva’s raw material cost data, by type.

Table 6.5 2,4-D: U.S. producer Corteva’s raw material costs in 2023

Value in 1,000 dollars; unit values in dollars per pound DWAE; share of value in percent

Item	Value	Unit value	Share of value
Monochloroacetic acid (“MCAA”) costs	***	***	***
Phenol costs	***	***	***
Caustic soda costs	***	***	***
Chlorine costs	***	***	***
Hydrochloric acid costs	***	***	***
All other material input costs	***	***	***
All raw materials	***	***	100.0

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

From 2021 to interim 2024, direct labor costs accounted for the smallest share of total COGS, ranging from *** percent in the overall market (table 6.1) and *** percent in the open market (table 6.3). In absolute values, direct labor costs irregularly increased in the overall market (table 6.1) but irregularly decreased in the open market (table 6.3). As a ratio to net sales and on a per-unit basis, direct labor costs consistently increased in both markets from 2021 to 2023 (tables 6.1 and 6.3). Total direct labor costs, which remained the same per unit, were lower in absolute values, but higher as a ratio to net sales between the two interim periods in the overall market (table 6.1). Corteva explained that direct labor AUV increases were the result of ***.²⁴

²¹ *** net sales in interim 2024 in the open market (table 6.3) is made up of ***. ***. Staff notes, EDIS Doc. 846174 (March 18, 2025).

²² Corteva reported supply chain issues 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 ***, ***, April 24, 2024.

²³ Phenol, chlorine, and caustic soda ***. Corteva’s U.S. producer questionnaire, III-7a and staff notes, EDIS Doc. 846174 (March 18, 2025).

²⁴ ***, ***, April 24, 2024, and staff notes, EDIS Doc. 846174 (March 18, 2025).

Total COGS absolute values irregularly increased from 2021 to 2023 in the overall market (table 6.1) but consistently decreased in the open market (table 6.3). As a ratio to net sales, total COGS consistently increased from 2021 to 2023 in both markets (tables 6.1 and 6.3). The AUVs of total COGS irregularly increased from 2021 to 2023 in both markets, reflecting the previously discussed irregular increases in per-unit raw materials, direct labor, and other factory costs (tables 6.1 and 6.3). Total COGS were lower while the ratio of COGS to net sales were higher in interim 2024 than in interim 2023 in both markets (tables 6.1 and 6.3); AUV of total COGS were lower in the overall market but higher in the open market between the two interim periods.

Gross profit in Corteva's overall market operations consistently declined from *** in 2021 to *** in 2023; gross profit was lower in interim 2024 than in interim 2023 (table 6.1). Gross profits in the open market (combined commercial sales plus swap transactions) irregularly declined from 2021 to 2023 and were lower in interim 2024 than in interim 2023 (table 6.3). Gross margins (total gross profit divided by total net sales) declined from 2021 to 2023 and were lower in interim 2024 than in interim 2023 in both markets (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, Corteva's total SG&A expenses irregularly increased in the overall market (table 6.1) while SG&A expenses irregularly decreased in the open market (table 6.3).²⁵ SG&A expense ratios (i.e., total SG&A expenses divided by net sales) increased from 2021 to 2023 and were higher in interim 2024 than in interim 2023 in both markets (tables 6.1 and 6.3).

Corteva's operating income consistently decreased in the overall market, from *** in 2021 to *** in 2022 and then to *** in 2023; operating income were lower in interim 2024 than in interim 2023 (table 6.1). Operating income for the open market irregularly decreased from *** in 2021 to *** in 2023 and were lower in interim 2024 than in interim 2023 (table 6.3). Operating margins (i.e., operating income divided by net sales) consistently decreased from 2021 to 2023; operating margins were lower in interim 2024 than in interim 2023 in both markets. The pattern of operating results in the overall market (table 6.1) primarily reflects 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). Corteva's open market (combined commercial sales and swap transactions) showed negative operating results in all three years (table 6.3),

²⁵ Corteva explained that the SG&A expense increases from 2021 to 2022 in the overall market ***. Fluctuations in SG&A expenses on a per-unit basis reflect sales volume declines (i.e., SG&A expenses ***). ***, ***, April 24, 2024, and staff notes, EDIS Doc. 846174 (March 18, 2025).

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 both the overall market (table 6.1) and the open market (commercial sales and swap transactions) (table 6.3).²⁶

²⁶ Corteva informed USITC 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 ***. Corteva's 2023 Form 10-K, pp. 42-43; F-5; and F-6 (as filed); ***, ***, April 24, 2024; and staff notes, EDIS Doc. 846174 (March 18, 2025).

Variance analysis

A variance analysis for the overall market operations of U.S. producer Corteva of 2,4-D is presented in table 6.6.²⁷ The information for this variance analysis is derived from table 6.1 (overall market).

Table 6.6 2,4-D: Variance analysis on the operations of U.S. producer Corteva in the overall market, between comparison periods

Value in 1,000 dollars

Item	2021-23	2021-22	2022-23	Interim 2023-24
Net sales price variance	***	***	***	***
Net sales volume variance	***	***	***	***
Net sales total variance	***	***	***	***
COGS cost variance	***	***	***	***
COGS volume variance	***	***	***	***
COGS total variance	***	***	***	***
Gross profit variance	***	***	***	***
SG&A cost variance	***	***	***	***
SG&A volume variance	***	***	***	***
SG&A total variance	***	***	***	***
Operating income price variance	***	***	***	***
Operating income cost variance	***	***	***	***
Operating income volume variance	***	***	***	***
Operating income total variance	***	***	***	***

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

Note: These data are derived from the data in table 6.1. Unfavorable variances (which are negative) are shown in parentheses, all others are favorable (positive).

²⁷ The Commission's variance analysis is calculated in three parts: Net sales variance, COGS variance, and SG&A expense variance. Each part consists of a price variance (in the case of the net sales variance) or a cost or expense variance (in the case of the COGS and SG&A expense variance), and a volume variance. The sales or cost/expense variances are calculated as the change in unit price or per-unit cost/expense, respectively, times the new volume, while the volume variance is calculated as the change in volume times the old unit price or per-unit cost/expense. Summarized at the bottom of the table, the operating income price variance is from sales; the operating income cost/expense variance is the sum of the cost components in the COGS and SG&A expense variances, and the operating income volume variance is the sum of the volume components of the net sales, COGS, and SG&A expense variances.

Capital expenditures, R&D expenses, assets, and ROA

Table 6.7 presents U.S. producer Corteva's capital expenditures, R&D expenses, total assets, and ROA. Table 6.8 presents Corteva's narrative explanations of the nature, focus, and significance of its capital expenditures, R&D expenses, and explanations on its major asset categories and any significant changes in asset levels over time.

Table 6.7 2,4-D: U.S. producer Corteva's capital expenditures, R&D expenses, total assets, and ROA, by period

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

Item	Measure	2021	2022	2023	Interim 2023	Interim 2024
Capital expenditures	Value	***	***	***	***	***
R&D expenses	Value	***	***	***	***	***
Total assets	Value	***	***	***	***	***
ROA	Ratio	***	***	***	***	***

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

Table 6.8 2,4-D: U.S. producer Corteva's narrative descriptions of its capital expenditures, R&D expenses, and total assets

Item	Narrative
Capital expenditures	***
R&D expenses	***
Total assets	***

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

Capital and investment

The Commission requested U.S. producer Corteva to describe any actual or potential negative effects of imports of 2,4-D from China and India on its growth, investment, ability to raise capital, development and production efforts, or the scale of capital investments. Table 6.9 presents Corteva's reporting of an impact in each category and table 6.10 provides Corteva's narrative responses.

Table 6.9 2,4-D: U.S. producer Corteva's indications of actual and anticipated negative effects of imports from subject sources on investment, growth, and development since January 1, 2021, by effect

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

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

Table 6.10 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

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 7: Threat considerations and information on nonsubject countries

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

In determining whether an industry in the United States is threatened with material injury by reason of imports (or sales for importation) of the subject merchandise, the Commission shall consider, among other relevant economic 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 subsidies was presented earlier in this report; information on the volume and pricing of imports of the subject merchandise was presented in Parts 4 and 5; and information on the effects of imports of the subject merchandise on U.S. producers' existing development and production efforts was presented in Part 6. Information on inventories of the subject merchandise; foreign producers' operations, including the potential for "product-shifting;" any other threat indicators, if applicable; and any dumping in third-country markets, follows. Also presented in this section of the report is information obtained for consideration by the Commission on nonsubject countries.

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

Subject countries

The Commission issued foreign producers' or exporters' questionnaires to 14 firms in China and 4 firms in India believed to produce and/or export 2,4-D.³ Usable responses to the Commission's questionnaire were received from three firms in China: exporter Thai Harvest Ltd. and its producer affiliate Jiangxi Tianyu Chemical Co., Ltd ("Thai Harvest/Jiangxi Tianyu") and resellers Sharda Cropchem ("Sharda Cropchem") and Nufarm Services (Singapore) ("Nufarm Services"). Additionally, all four firms in India provided questionnaire responses: producers Agrow Allied Ventures Private Ltd. ("Agrow Allied"), Atul Ltd. ("Atul"), and Meghmani Organics Ltd. ("Meghmani") and reseller Sharda Cropchem.

Table 7.1 presents the number of producers/exporters in each subject country that responded to the Commission's questionnaire, their exports to the United States as a share of U.S. imports by each subject country in 2023, and their estimated share of total production of 2,4-D by subject country during 2023. The exports to the United States of the responding producers and resellers in China accounted for *** percent of U.S. imports of 2,4-D from China in 2023, while the exports to the United States of the responding producers and resellers in India accounted for *** percent of U.S. imports of 2,4-D from India in 2023 under the primary HTS statistical reporting number of 2918.99.2010.

Table 7.1 2,4-D: Number of responding producers/exporters, approximate share of production, and exports to the United States as a share of U.S. imports, by subject foreign industry, 2023

Country	Number of responding firms	Approximate share of production (percent)	Exports as a share of U.S. imports from subject country (percent)
China	3	***	***
India	4	***	***

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 March 5, 2025. Imports are based on the imports for consumption data series.

Note: "Approximate share of production" reflects the responding producers' estimates of their production as a share of total country production of 2,4-D in 2023. Since not all firms have perfect knowledge of the industry in their home market, different firms might use different denominators in estimating their firm's share of the total requested. Approximate shares are rounded to the nearest whole number. "Exports as a share of U.S. imports" reflects a comparison of export data reported by subject producers and resellers in response to the Commission's foreign producer/exporter questionnaire with official Commerce import statistics using primary HTS statistical reporting number 2918.99.2010, accessed March 5, 2025.

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

Tables 7.2 and 7.4 present information on the 2,4-D operations of the responding producers by firm and subject foreign industry, respectively, and include breakouts by production, production shares, exports to the United States, exports to the United States shares, total shipments, and shares of firm's total shipments exported to the United States. Table 7.3 presents summary information on the responding resellers of subject 2,4-D.

Table 7.2 2,4-D: Summary data for subject foreign producers, by firm, 2023

Production, exports and total shipments in 1,000 pounds dry weight acid equivalent; Shares in percent

Subject foreign industry: Producer	Production	Production share	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: Thai Harvest/Jiangxi Tianyu	***	***	***	***	***	***
India: Agrow Allied	***	***	***	***	***	***
India: Atul	***	***	***	***	***	***
India: Meghmani	***	***	***	***	***	***
All producers	***	100.0	***	100.0	***	***

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

Table 7.3 2,4-D: Summary data for subject foreign resellers, by firm, 2023

Resale exports in 1,000 pounds dry weight acid equivalent; Shares in percent

Subject foreign industry: Reseller name	Resales exported to the United States	Share of resales exported to the United States
China: Nufarm Services	***	***
China: Sharda Cropchem	***	***
India: Sharda Cropchem	***	***
All individual resellers	***	100.0

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

Table 7.4 2,4-D: Summary data for subject foreign producers, by subject foreign industry, 2023

Production, exports and total shipments in 1,000 pounds dry weight acid equivalent; Shares in percent

Subject foreign industry	Production	Production share	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	***	100.0	***	100.0	***	***

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

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 during the investigation period. Three of the seven responding producers/exporters indicated that they had experienced such changes: one producer reported an expansion, one reported production curtailments, and one reported production process optimizations. Additionally, subject producers/exporters were asked whether the COVID-19 pandemic or any government actions taken to contain the spread of the COVID-19 virus resulted in changes to the firm's supply chain arrangements, production, or shipments (including exports to the United States) relating to 2,4-D during the period of investigation and to describe any such impacts. One firm described operational impacts from COVID-19. Table 7.5 presents the operational changes identified by these producers/exporters.

Table 7.5 2,4-D: Reported changes in operations and impact of COVID-19 in the subject countries since January 1, 2021, by change, subject foreign industry, and firm

Item	Firm name (subject foreign industry) and accompanying narrative response regarding changes in operations
COVID-19	***
Expansions	***
Production curtailments	***
Other	***

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

Firms were also asked to describe any anticipated changes to the character or nature of their operations relating to the production of 2,4-D in the near future, but none of the firms reported any anticipated operational changes.

Installed and practical overall capacity

The Commission asked foreign producers to report their installed overall, practical overall, and practical 2,4-D capacities.⁴ Table 7.6 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 *** percent from 2021 to 2023 (from *** pounds in 2021 to *** pounds in 2022 and *** pounds in 2023).⁵ Installed capacity was *** pounds higher across the interim periods (*** pounds in interim 2024 compared to *** pounds in interim 2023).⁶

Practical capacity increased irregularly *** percent from 2021 to 2023 (decreasing from *** pounds in 2021 to *** pounds in 2022 before increasing to *** pounds in 2023).⁷ Practical capacity was *** percent higher in interim 2024 than interim 2023 (*** pounds compared to *** pounds). Subject producers' 2,4-D production decreased irregularly by *** percent from 2021 to 2023 (decreasing from *** pounds in 2021 to *** pounds in 2022 before increasing to *** pounds in 2023). Subject producers' 2,4-D production was *** percent higher in interim 2024 than interim 2023 (*** pounds compared to *** pounds). Resultingly, subject producers' practical capacity utilization ratio decreased *** percentage points from 2021 to 2023 (decreasing from *** percent in 2021 to *** percent in 2022 and

⁴ 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.

⁵ ***.

⁶ ***.

⁷ As detailed further in table 7.7, subject producers' reported conditions related to maintenance, repairs, and labor availability that constrained their abilities for practical capacity to reach installed capacity.

to *** percent in 2023). Subject producers' practical capacity utilization ratio was *** percentage points higher in interim 2024 than interim 2023 (*** percent compared to *** percent).

Table 7.6 2,4-D: Subject producers' installed and practical capacity and production on the same equipment as in-scope production, by period

Capacity and production in 1,000 pounds dry weight acid equivalent; Utilization in percent; Interim period is January through September

Item	Measure	2021	2022	2023	Interim 2023	Interim 2024
Installed overall	Capacity	***	***	***	***	***
Installed overall	Production	***	***	***	***	***
Installed overall	Utilization	***	***	***	***	***
Practical overall	Capacity	***	***	***	***	***
Practical overall	Production	***	***	***	***	***
Practical overall	Utilization	***	***	***	***	***
Practical 2,4-D	Capacity	***	***	***	***	***
Practical 2,4-D	Production	***	***	***	***	***
Practical 2,4-D	Utilization	***	***	***	***	***

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

Constraints on capacity

Table 7.7 presents subject producers' reported constraints on achieving reported overall capacity levels during the investigation period. All four responding subject producers reported capacity constraints. The reported constraints related to production bottlenecks, labor force, and maintenance/repair.

Table 7.7 2,4-D: Subject producers' reported practical overall capacity constraints since January 1, 2021, by constraint and firm

Type of constraint	Subject foreign industry, firm name, and narrative response on constraints to practical overall capacity
Production bottlenecks	***
Existing labor force	***
Other constraints	***
Other constraints	***
Other constraints	***

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

Operations on 2,4-D

Aggregate 2,4-D operations in the subject countries

Table 7.8 presents information on the 2,4-D operations of the responding subject producers and exporters. As previously described with table 7.6, subject foreign producers' practical capacity increased irregularly by *** percent while production decreased irregularly by *** percent from 2021 to 2023. Practical capacity was *** percent higher in interim 2024 than interim 2023 (*** pounds compared to *** pounds), while production increased *** percent across the interim periods (*** pounds compared to *** pounds). The subject producers projected that capacity would increase *** percent in 2024 compared to 2023 to *** pounds and then decrease *** percent in 2025 compared to 2024 to *** pounds. The producers' projected that production would increase *** percent in 2024 compared to 2023 to *** pounds and then decrease *** percent in 2025 compared to 2024 to *** pounds.

Subject producers' total shipments decreased irregularly by *** percent from 2021 to 2023 (decreasing from *** pounds in 2021 to *** pounds in 2022 before increasing to *** pounds in 2023). Total shipments were *** percent higher in interim 2024 than interim 2023 (*** pounds compared to *** pounds). Subject producers projected their total shipments would be *** percent higher in 2024 than 2023 at *** pounds but would decrease *** percent in 2025 as compared to 2024 to *** pounds.

Exports represented the majority of the subject producers' total shipments in all periods (between *** and *** percent of subject producers' total shipments were exports in the full year and interim periods). Home market shipments represented the remainder of the subject producers' total shipments in the full year and interim periods (between *** and *** percent of total shipments).⁸ The firms' total exports decreased irregularly *** percent from 2021 to 2023 (increasing from *** pounds in 2021 to *** pounds in 2022 before decreasing to *** pounds in 2023). Subject producers' total exports were *** percent higher in interim 2024 than interim 2023 (*** pounds compared to *** pounds). The firms projected that their total exports would be *** percent higher in 2024 than 2023 at *** pounds but *** percent lower in 2025 compared to 2024 at *** pounds.

⁸ In the full year and interim periods, internal consumption and transfers represented between *** and *** percent of subject firms' total shipments while commercial home market shipments represented between *** and *** percent of foreign producers' total shipments.

As a share of total shipments, the subject producers' exports to the United States represented between *** and *** percent of the firm's total shipments in the full year and interim periods. The subject producers' exports to all other markets represented between *** and *** percent of the firm's total shipments in the full year and interim periods. Subject producers' exports to the United States decreased *** percent irregularly from 2021 to 2023 (increasing from *** pounds in 2021 to *** pounds in 2022 before decreasing to *** pounds in 2023). Subject producers' exports to the United States were *** percent higher in interim 2024 than interim 2023 (*** pounds compared to *** pounds). The subject producers projected that their exports to the United States would be *** percent higher in 2024 than 2023 at *** pounds but then would decrease *** percent in 2025 compared to 2024 at *** pounds.

Subject producers' exports to all other markets decreased *** percent from 2021 to 2023 (from *** pounds in 2021, to *** pounds in 2022, and to *** pounds in 2023). Subject producers' exports to all other markets were *** percent higher in interim 2024 than interim 2023 (*** pounds compared to *** pounds). Subject producers' home market shipments increased irregularly by *** percent from 2021 to 2023 (decreasing from *** pounds in 2021 to *** pounds in 2022 before increasing to *** pounds in 2023).

As noted, questionnaire responses were received from both subject foreign producers as well as subject resellers. Subject resellers reported exports to the United States decreased *** percent irregularly from 2021 to 2023 (increasing from *** pounds in 2021 to *** pounds in 2022 before decreasing to *** pounds in 2023). Subject resellers exports to the United States were *** percent higher across the interim periods (*** pounds in interim 2024 compared to *** pounds in interim 2023). Resellers projected that their exports to the United States would increase *** percent in 2024 compared to 2023 to *** pounds but would decrease *** percent in 2025 compared to 2024 to *** pounds.

Resultingly, total reported exports to the United States as reported by both subject producers and resellers decreased *** percent irregularly from 2021 to 2023 (increasing from *** pounds in 2021 to *** pounds in 2022 before decreasing to *** pounds in 2023). The producers and resellers collectively projected that their total exports to the United States would be *** percent higher in 2024 than 2023 at *** pounds but would decrease *** percent in 2025 compared to 2024 to be *** pounds. As a share of total reported exports to the United States, foreign producers reported a greater share of the exports to the United States than reported by the resellers in all periods

(between *** and *** percent of total reported exports to the United States were reported by producers with the resellers reporting the remainder of exports to the United States).

Table 7.8 2,4-D: Data on subject foreign industries, by item and period

Quantity in 1,000 pounds dry weight acid equivalent

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

Table continued.

Table 7.8 (Continued) 2,4-D: Data on subject foreign industries, by item and period

Quantity in 1,000 pounds dry weight acid equivalent; Interim period is January through September

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

Table continued.

Table 7.8 (Continued) 2,4-D: Data on subject foreign industries, by item and period

Shares and ratios in percent

Item	2021	2022	2023
Capacity utilization ratio	***	***	***
Inventory ratio to production	***	***	***
Inventory ratio to total shipments	***	***	***
Internal consumption share	***	***	***
Commercial home market shipments share	***	***	***
Home market shipments share	***	***	***
Exports to the United States share	***	***	***
Exports to all other markets share	***	***	***
Export shipments share	***	***	***
Total shipments share	100.0	100.0	100.0
Producers' share of total exports to the United States	***	***	***
Resellers' share of total exports to the United States	***	***	***
Adjusted exports to the United States share	***	***	***

Table continued.

Table 7.8 (Continued) 2,4-D: Data on subject foreign industries, by item and period

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

Item	Interim 2023	Interim 2024	Projection 2024	Projection 2025
Capacity utilization ratio	***	***	***	***
Inventory ratio to production	***	***	***	***
Inventory ratio to total shipments	***	***	***	***
Internal consumption share	***	***	***	***
Commercial home market shipments share	***	***	***	***
Home market shipments share	***	***	***	***
Exports to the United States share	***	***	***	***
Exports to all other markets share	***	***	***	***
Export shipments share	***	***	***	***
Total shipments share	100.0	100.0	100.0	100.0
Producers' share of total exports to the United States	***	***	***	***
Resellers' share of total exports to the United States	***	***	***	***
Adjusted exports to the United States share	***	***	***	***

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

Practical 2,4-D capacity and production by subject foreign industry

Table 7.9 presents information on subject producers' production, capacity, and capacity utilization by subject country. As a share of production, production in China represented between *** and *** percent of total subject production between 2021 and 2023 and across the interim periods, with production in India representing the remainder of reported subject production over those periods (between *** and *** percent).

As noted, practical capacity increased irregularly by *** percent from 2021 to 2023 with capacity *** percent higher in interim 2024 than interim 2023. By country, Jiangxi Tianyu Chemical reported all the data for China, and the company's practical capacity increased *** percent irregularly from 2021 to 2023 (decreasing from *** pounds in 2021 to *** pounds in 2022 before increasing to *** pounds in 2023). The company reported its practical capacity was *** percent higher in interim 2024 than interim 2023 (*** pounds compared to *** pounds). It projected its capacity would be *** percent higher in 2024 than 2023 at *** pounds but would be *** percent lower in 2025 compared to 2024 at *** pounds.

The three Indian producers (Agrow Allied, Atul, and Meghmani) collective practical capacity increased *** percent from 2021 to 2023 (from *** pounds in 2021 to *** pounds in 2022 and *** pounds in 2023).⁹ The practical capacity of the Indian producers was unchanged across the interim periods at *** pounds. The collective practical capacity for 2024 and 2025 were also projected by the responding Indian producers to remain *** from 2023 capacity.

Subject production decreased irregularly *** percent from 2021 to 2023 (decreasing from *** pounds in 2021 to *** pounds in 2022 before increasing to *** pounds in 2023). Subject production was *** percent higher across the interim periods (*** pounds compared to *** pounds).

Production reported by the subject producer in China (Jiangxi Tianyu) increased *** percent from 2021 to 2023 (decreasing from *** pounds in 2021 to *** pounds in 2022 before increasing to *** pounds in 2023). The company's production was *** percent higher across the interim periods (*** pounds compared to *** pounds). The company projected its production would increase *** percent in 2024 compared to 2023 at *** pounds and then decrease *** percent in 2025 compared to 2024 at *** pounds.

⁹ ***.

Subject production in India decreased *** percent irregularly from 2021 to 2023 (increasing from *** pounds in 2021 to *** pounds in 2022 before decreasing to *** pounds in 2023).¹⁰ Subject production in India was *** percent higher across the interim periods (*** pounds compared to *** pounds).¹¹ Subject producers in India projected that their production would increase *** percent in 2024 compared to 2023 at *** pounds and then decrease *** percent in 2025 compared to 2024 to *** pounds.¹²

Jiangxi Tianyu Chemical reported ***. The Indian producers capacity utilization ratios decreased from *** percent in 2021 to *** percent in 2022 and to *** percent in 2023, a decrease of *** percentage points from 2021 to 2023.¹³ Subject producers in India collectively had a higher utilization ratio in interim 2024 than interim 2023 (*** percent compared to *** percent, an increase of *** percentage points).¹⁴ The Indian producers projected their collective capacity utilization would increase compared to 2023 to *** percent in 2024 and to *** percent 2025.¹⁵

¹⁰ Agrow Allied reported its production increased *** pounds from 2021 to 2023 (from *** pounds in 2021 to *** pounds in 2023, an increase of *** percent). Atul reported that its production decreased by *** pounds from 2021 to 2023 (from *** pounds in 2021 to *** pounds in 2023, a decrease of *** percent). Meghmani reported that its production decreased by *** pounds from 2021 to 2023 (from *** pounds in 2021 to *** pounds in 2023, a decrease of *** percent).

¹¹ All three subject producers in India reported higher production in interim 2024 than interim 2023. Across the interim periods, Agrow Allied reported *** percent higher production, Atul reported *** percent higher production, and Meghmani reported *** percent higher production.

¹² Agrow Allied projected its production would *** in 2024 and 2025 compared to 2023. Atul projected its production would increase *** percent in 2024 and 2025 as compared to 2023. Meghmani projected its production would increase *** percent in 2024 compared to 2023 and then decrease *** percent in 2025 compared to its 2024 projection.

¹³ *** Indian producers reported lower utilization ratios in 2023 as compared to 2021.

¹⁴ *** Indian producers reported higher utilization ratios in interim 2024 as compared to interim 2023.

¹⁵ *** Indian producers projected that their utilization ratios would be higher in 2024 and 2025 compared to 2023.

Table 7.9 2,4-D: Subject producers' output: Practical capacity, by source and period**Practical capacity**

Quantity in 1,000 pounds dry weight acid equivalent; Interim period is January through September

Subject foreign industry	2021	2022	2023	Interim 2023	Interim 2024	Projection 2024	Projection 2025
China	***	***	***	***	***	***	***
India	***	***	***	***	***	***	***
All	***	***	***	***	***	***	***

Table continued.

Table 7.9 (Continued) 2,4-D: Subject producers' output: Production, by source and period**Production**

Quantity in 1,000 pounds dry weight acid equivalent; Interim period is January through September

Subject foreign industry	2021	2022	2023	Interim 2023	Interim 2024	Projection 2024	Projection 2025
China	***	***	***	***	***	***	***
India	***	***	***	***	***	***	***
All	***	***	***	***	***	***	***

Table continued.

Table 7.9 (Continued) 2,4-D: Subject producers' output: Capacity utilization, by source and period**Capacity utilization**

Quantity in 1,000 pounds dry weight acid equivalent; Interim period is January through September

Subject foreign industry	2021	2022	2023	Interim 2023	Interim 2024	Projection 2024	Projection 2025
China	***	***	***	***	***	***	***
India	***	***	***	***	***	***	***
All	***	***	***	***	***	***	***

Table continued.

Table 7.9 (Continued) 2,4-D: Subject producers' output: Share of production, by source and period**Share of production**

Quantity in 1,000 pounds dry weight acid equivalent; Interim period is January through September

Subject foreign industry	2021	2022	2023	Interim 2023	Interim 2024	Projection 2024	Projection 2025
China	***	***	***	***	***	***	***
India	***	***	***	***	***	***	***
All	100.0	100.0	100.0	100.0	100.0	100.0	100.0

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

2,4-D exports, by subject country

Table 7.10 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 to 2023 by *** percent (from *** pounds in 2021 and increasing to *** pounds in 2022 before decreasing to *** pounds in 2023).

By subject foreign industry, exports from China to the United States by producers and resellers decreased *** percent irregularly from 2021 to 2023 (increasing from *** pounds in 2021 to *** pounds in 2022 before decreasing to *** pounds in 2023). Exports from China to the United States were *** percent higher in interim 2024 than interim 2023 (*** pounds compared to *** pounds). The producers and resellers projected that their exports to the United States would be *** percent higher in 2024 than 2023 at *** pounds but would decrease *** percent in 2025 compared to the 2024 projection at *** pounds.

Exports from India to the United States by producers and resellers increased *** percent irregularly from 2021 to 2023 (increasing from *** pounds in 2021 to *** pounds in 2022 before decreasing to *** pounds in 2023). Total exports from India were *** percent higher in interim 2024 than interim 2023 (*** pounds compared to *** pounds). The producers and resellers in India projected that their exports to the United States would be *** percent higher in 2024 than 2023 at *** pounds but would decrease *** percent in 2025 compared to the 2024 projection at *** pounds.

Exports from China to all markets by producers and resellers decreased *** percent irregularly from 2021 to 2023 (increasing from *** pounds in 2021 to *** pounds in 2022 before decreasing to *** pounds in 2023). Total exports from China were *** percent higher in interim 2024 than interim 2023 (*** pounds compared to *** pounds). The producers and resellers projected that their total exports would be *** percent higher in 2024 than 2023 at *** pounds but would decrease *** percent in 2025 compared to the 2024 projection at *** pounds.

Exports from India by producers and resellers to all markets decreased *** percent irregularly from 2021 to 2023 (increasing from *** pounds in 2021 to *** pounds in 2022 before decreasing to *** pounds in 2023). Total exports from India were *** percent higher in interim 2024 than interim 2023 (*** pounds compared

to *** pounds). The producers and resellers projected that their total exports would be *** percent higher in 2024 than 2023 at *** pounds and would increase an additional *** percent in 2025 to *** pounds.

Resultingly, total exports by subject producers and resellers to all markets decreased irregularly by *** percent from 2021 to 2023 (increasing from *** pounds in 2021 to *** pounds in 2022 before decreasing to *** pounds in 2023). Total subject exports were *** percent higher in interim 2024 than interim 2023 (*** pounds compared to *** pounds). The producers and resellers projected that their total exports would be *** percent higher in 2024 than 2023 at *** pounds but would decrease *** percent in 2025 compared to the 2024 projection to *** pounds.

Chinese producers' and resellers' total exports to the United States represented *** percent of adjusted¹⁶ 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. Resultingly, all subject producers' and resellers' exports to the United States represented *** percent of total adjusted subject shipments, while subject producers' and resellers' exports to all destination markets represented *** percent of total shipments from India in 2023.

¹⁶ Foreign exporter *** reported resale exports from China to the United States from ***. Since questionnaire responses were not received from those firms, the adjusted share of total shipments exported to the United States includes these resales in the sum of total shipments. Additionally, *** reported resale exports from China to the United States from ***. The Commission received a foreign producer response from *** but not from ***. Because the quantities of resale exports for the two companies were not broken out by ***, the adjusted share of total shipments exported to the United States does not include the resales reported by *** in the sum of total shipments to avoid double counting resales from ***.

Table 7.10 2,4-D: Subject producers' and resellers' exports: Exports to the United States, by source and period

Exports to the United States

Quantity in 1,000 pounds dry weight acid equivalent; Interim period is January through September

Subject foreign industry	2021	2022	2023	Interim 2023	Interim 2024	Projection 2024	Projection 2025
China	***	***	***	***	***	***	***
India	***	***	***	***	***	***	***
All	***	***	***	***	***	***	***

Table continued.

Table 7.10 (Continued) 2,4-D: Subject producers' and resellers' exports: Share of total shipments exported to the United States, by source and period

Share of total shipments exported to the United States

Shares in percent; Interim period is January through September

Subject foreign industry	2021	2022	2023	Interim 2023	Interim 2024	Projection 2024	Projection 2025
China	***	***	***	***	***	***	***
India	***	***	***	***	***	***	***
All	***	***	***	***	***	***	***

Table continued.

Table 7.10 (Continued) 2,4-D: Subject producers' and resellers' exports: Exports to all destination markets, by source and period

Total exports

Quantity in 1,000 pounds dry weight acid equivalent; Interim period is January through September

Subject foreign industry	2021	2022	2023	Interim 2023	Interim 2024	Projection 2024	Projection 2025
China	***	***	***	***	***	***	***
India	***	***	***	***	***	***	***
All	***	***	***	***	***	***	***

Table continued.

Table 7.10 (Continued) 2,4-D: Subject producers' (and resellers') exports: Share of total shipments exported to all destinations, by source and period

Share of total shipments exported

Shares in percent; Interim period is January through September

Subject foreign industry	2021	2022	2023	Interim 2023	Interim 2024	Projection 2024	Projection 2025
China	***	***	***	***	***	***	***
India	***	***	***	***	***	***	***
All	***	***	***	***	***	***	***

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

Note: Foreign exporter *** reported resale exports from China to the United States from ***. Since questionnaire responses were not received from those firms, the adjusted share of total shipments exported to the United States includes these resales in the sum of total shipments. Additionally, *** reported resale exports from China to the United States from ***. The Commission received a foreign producer response from *** but not from ***. Because the quantities of resale exports for the two companies were not broken out by ***, the adjusted share of total shipments exported to the United States does not include the resales reported by *** in the sum of total shipments to avoid double counting resales from ***.

2,4-D inventories, by subject foreign industry

Table 7.11 presents information on ending inventory of the responding producers by subject foreign industry. End-of-year 2,4-D inventories of the producer in China decreased irregularly by *** percent from 2021 to 2023 (decreasing from *** pounds at year-end 2021 to *** pounds at year-end 2022 and 2023). Ending inventories of the producer in China were *** percent higher at the end of interim 2024 than at the end of interim 2023 (*** pounds compared to *** pounds). The producer in China projected that its year-end 2024 and 2025 inventories would be lower than its year-end 2023 inventory at *** pounds.

End-of-year 2,4-D inventories of the producers in India decreased irregularly by *** percent from 2021 to 2023 (increasing from *** pounds at year-end 2021 to *** pounds at year-end 2022 before decreasing to *** pounds at year-end 2023).¹⁷ Ending inventories of the producers in India were *** percent higher at the end of interim 2024 than the end of interim 2023 (*** pounds compared to *** pounds).¹⁸ The producers in India projected that their collective year-end 2024 inventories would be greater than their collective year-end 2023 inventories at *** pounds and would increase further to *** pounds for year-end 2025.¹⁹

Resultingly, end-of-year 2,4-D inventories of all subject producers decreased irregularly by *** percent from 2021 to 2023 (increasing from *** pounds at year-end 2021 to *** pounds at year-end 2022 before decreasing to *** pounds at year-end 2023). Ending inventories all subject producers were *** percent higher at the end of interim 2024 than at the end of interim 2023 (*** pounds compared to *** pounds).

¹⁷ ***.

¹⁸ ***.

¹⁹ ***.

Subject producers projected that their collective year-end 2024 and 2025 inventories would be greater than their collective year-end 2023 inventories at *** pounds at year-end 2024 and *** pounds at year-end 2025.

The ratio of the producer in China's year-end inventories to total shipments were between *** and *** percent in the full year and interim periods. The ratio of the producers in India's year-end inventories to total shipments were between *** and *** percent in the full year and interim periods. The ratio of the subject producers' total year-end inventories to total shipments were between *** and *** percent in the full year and interim periods.

Table 7.11. 2,4-D: Subject foreign industries' ending inventories: Ending inventories, by source and period

Quantity in 1,000 pounds dry weight acid equivalent; Interim period is January through September

Subject foreign industry	2021	2022	2023	Interim 2023	Interim 2024	Projection 2024	Projection 2025
China	***	***	***	***	***	***	***
India	***	***	***	***	***	***	***
All	***	***	***	***	***	***	***

Table continued.

Table 7.11 (Continued) 2,4-D: Subject foreign industries' ending inventories: Ratio of ending inventories to total shipments, by source and period

Ratios in percent; Interim period is January through September

Subject foreign industry	2021	2022	2023	Interim 2023	Interim 2024	Projection 2024	Projection 2025
China	***	***	***	***	***	***	***
India	***	***	***	***	***	***	***
All	***	***	***	***	***	***	***

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

Alternative products

None of the responding producers in China or India reported any production of alternative products using the same equipment and/or labor as used to produce 2,4-D during the investigation period. Additionally, no subject firms reported the ability to switch production to produce alternative products using the same equipment and/or labor as used to produce 2,4-D.

Exports

Table 7.12 presents Global Trade Atlas (“GTA”) data for exports of carboxylic acids with additional oxygen function and their anhydrides, halides, peroxides and peroxyacids (“carboxylic acids”), a category which includes 2,4-D acid and its salts and esters, from the subject countries to the United States and to all destination markets.

Exports of carboxylic acids from China to the United States decreased irregularly by 36.3 percent from 2021 to 2023 (increasing from 57.5 million pounds in 2021 to 93.8 million pounds in 2022 before decreasing to 36.6 million pounds in 2023). Exports of carboxylic acids from India to the United States increased irregularly by 40.6 percent from 2021 to 2023 (increasing from 25.8 million pounds in 2021 to 47.2 million pounds in 2022 before decreasing to 36.3 million pounds in 2023). Resultingly, exports of carboxylic acids from the two subject source combined to the United States decreased irregularly by 12.5 percent from 2021 to 2023 (increasing from 83.3 million pounds in 2021 to 141.0 million pounds in 2022 before decreasing to 72.9 million pounds in 2023).

Exports of carboxylic acids from China to all destination markets decreased irregularly by 12.8 percent from 2021 to 2023 (increasing from 239.9 million pounds in 2021 to 305.7 million pounds in 2022 before decreasing to 209.3 million pounds in 2023). Exports of carboxylic acids from India to all destination markets increased by 3.9 percent irregularly from 2021 to 2023 (increasing from 91.3 million pounds in 2021 to 109.1 million pounds in 2022 before decreasing to 94.8 million pounds in 2023). Resultingly, exports of carboxylic acids from the two subject sources combined to all destination markets decreased irregularly by 8.2 percent from 2021 to 2023 (increasing from 331.2 million pounds in 2021 to 414.8 million pounds in 2022 before decreasing to 304.1 million pounds in 2023).

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 2918.99 were 38.3 percent of India’s total exports under this subheading. Resultingly, exports from the subject sources combined to the United States under subheading 2918.99 were 24.0 percent of total exports from the subject sources under this subheading in 2023.

Table 7.12 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	93,751	36,629
India	Quantity	25,829	47,201	36,315
Subject exporters	Quantity	83,332	140,952	72,945

Table continued.

Table 7.12 (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	239,947	305,713	209,302
India	Quantity	91,254	109,055	94,827
Subject exporters	Quantity	331,202	414,768	304,129

Table continued.

Table 7.12 (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

Share in percent

Exporter	Measure	2021	2022	2023
China	Share	24.0	30.7	17.5
India	Share	28.3	43.3	38.3
Subject exporters	Share	25.2	34.0	24.0

Source: Official exports statistics as reported by China Customs and official imports statistics of imports from India (constructed export statistics for India) under HS subheading 2918.99 as reported by various national statistical authorities in the Global Trade Atlas Suite database, accessed February 12, 2025.

Note: Shares represent the shares of quantity exported to the United States out of all destination markets.

U.S. inventories of imported merchandise

Table 7.13 presents data on U.S. importers' reported end-of-period inventories of imported 2,4-D.

Inventories of U.S. imports from China increased *** percent irregularly from 2021 to 2023 (increasing from *** pounds at year-end 2021 to *** pounds at year-end 2022 before decreasing to *** pounds at year-end 2023). Ending inventories of U.S. imports from China were *** percent higher at the end of interim 2024 than at the end of interim 2023 (*** pounds compared to *** pounds). Ratios of inventories of U.S. imports from China to U.S. imports from China by period were between *** and *** percent during the investigation period. Ratios of inventories of U.S. imports from China to U.S. shipments of U.S. imports from China by period were between *** and *** percent during the investigation period. Ratios of inventories of U.S. imports from China to U.S. shipments of total imports by period were between *** and *** percent during the investigation period. All three of these China inventory ratios peaked in 2022.

Inventories of U.S. imports from India increased *** percent from 2021 to 2023 (increasing from *** pounds at year-end 2021 to *** pounds at year-end 2022 and to *** pounds at year-end 2023). Ending inventories of U.S. imports from India were *** percent lower at the end of interim 2024 than at the end of interim 2023 (*** pounds compared to *** pounds). Ratios of inventories of U.S. imports from India to U.S. imports from India by period were between *** and *** percent during the investigation period. Ratios of inventories of U.S. imports from India to U.S. shipments of U.S. imports from India by period were between *** and *** percent during the investigation period. Ratios of inventories of U.S. imports from India to U.S. shipments of total imports by period were between *** and *** percent during the investigation period.

Resultingly, inventories of U.S. imports from the subject sources combined increased irregularly by *** percent from 2021 to 2023 (increasing from *** pounds at year-end 2021 to *** pounds at year-end 2022 before decreasing to *** pounds at year-end 2023). Ending inventories of U.S. imports from subject sources were *** percent higher at the end of interim 2024 than at the end of interim 2023 (*** pounds compared to *** pounds). Ratios of inventories of U.S. imports from subject sources to U.S. imports from subject sources by period were between *** and *** percent during the investigation period. Ratios of inventories of U.S. imports from subject sources to U.S. shipments of U.S. imports from subject sources by period were between *** and *** percent during the investigation period. Ratios of inventories of U.S. imports from subject

sources to U.S. shipments of total imports by period were between *** and *** percent during the investigation period. All three of these subject inventory ratios peaked in 2022.

Inventories of U.S. imports from nonsubject sources increased *** percent from 2021 to 2023 (increasing from *** pounds at year-end 2021 to *** pounds at year-end 2022 and to *** pounds at year-end 2023). Ending inventories of U.S. imports from nonsubject sources were *** percent lower at the end of interim 2024 than at the end of interim 2023 (*** pounds compared to *** pounds). Ratios of inventories of U.S. imports from nonsubject sources to U.S. imports from nonsubject sources by period were between *** and *** percent during the investigation period. Ratios of inventories of U.S. imports from nonsubject sources to U.S. shipments of U.S. imports from nonsubject sources by period were between *** and *** percent during the investigation period. Ratios of inventories of U.S. imports from nonsubject sources to U.S. shipments of total imports by period were between *** and *** percent during the investigation period. All three of these nonsubject inventory ratios peaked in interim 2024.

Resultingly, inventories of U.S. imports from all sources increased irregularly *** percent from 2021 to 2023 (increasing from *** pounds at year-end 2021 to *** pounds at year-end 2022 before decreasing to *** pounds at year-end 2023). Ending inventories of U.S. imports from all sources were *** percent higher at the end of interim 2024 than at the end of interim 2023 (*** pounds compared to *** pounds). Ratios of inventories of U.S. imports from all sources to U.S. imports from all sources by period were between *** and *** percent during the investigation period. Ratios of inventories of U.S. imports from all sources to U.S. shipments of U.S. imports from all sources by period were between *** and *** percent during the investigation period. Ratios of inventories of U.S. imports from all sources to U.S. shipments of total imports by period were between *** and *** percent during the investigation period. All three of these total import inventory ratios peaked in 2022.

Table 7.13. 2,4-D: U.S. importers' inventories and their ratio to select items, by source and period

Quantity in 1,000 pounds dry weight acid equivalent; Ratios in percent; Interim period is January through September

Measure	Source	2021	2022	2023	Interim 2023	Interim 2024
Inventories quantity	China	***	***	***	***	***
Ratio to imports	China	***	***	***	***	***
Ratio to U.S. shipments of imports	China	***	***	***	***	***
Ratio to total shipments of imports	China	***	***	***	***	***
Inventories quantity	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 September 30, 2024. Their reported data are presented in table 7.14. Importers reported having arranged the following import quantities by source for the final quarter of 2024 and the first three quarters of 2025: *** pounds from China, *** pounds from India, *** pounds from the subject sources combined, *** pounds from nonsubject sources, and *** pounds in total arranged imports.

Table 7.14 2,4-D: U.S. importers' arranged imports, by source and period

Quantity in 1,000 pounds dry weight acid equivalent

Source	Q4 2024	Q1 2025	Q2 2025	Q3 2025	Total
China	***	***	***	***	***
India	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***

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

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 2018.²⁰ In 2022, an investigation was completed, and the orders were continued beginning March 25, 2023, and are set to expire March 24, 2028.^{21 22}

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 7.15. The largest two global exporters by quantity in 2023 were the subject countries, China and India—China with a 45.4 percent share of quantity (209.3 million pounds), followed by India with a 20.6 percent share (94.8 million pounds). For the three largest nonsubject countries in 2023, Germany had a 9.6 percent share of quantity (44.4 million pounds), followed by South Korea with a 3.3 percent share (15.0 million pounds), followed by the United Kingdom with a 2.8 percent share (12.7 million pounds).

²⁰ 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/adcp/public-record/604 - 002 - notice - adn 2022-034 - initiation of a continuation inquiry.pdf>.

²¹ 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/adcp/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/adcp/public-record/604 - adn 2022-121 - findings of continuation enquiry.pdf>.

²² 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 7.15 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 dry weight acid equivalent; value in 1,000 dollars

Exporting country	Measure	2021	2022	2023
United States	Quantity	39,124	31,968	32,302
China	Quantity	239,947	305,713	209,302
India	Quantity	91,254	109,055	94,827
Subject exporters	Quantity	331,202	414,768	304,129
Germany	Quantity	47,681	44,591	44,371
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	15,427	10,564
Poland	Quantity	42,265	33,969	8,194
Belgium	Quantity	6,764	5,000	4,729
Switzerland	Quantity	4,426	4,334	3,475
Australia	Quantity	4,455	2,914	2,752
Singapore	Quantity	2,025	3,123	2,504
All other exporters	Quantity	24,499	17,963	9,686
All reporting exporters	Quantity	577,421	624,400	461,241
United States	Value	81,517	81,120	74,539
China	Value	723,930	900,550	513,866
India	Value	437,335	545,118	434,333
Subject exporters	Value	1,161,265	1,445,668	948,200
Germany	Value	112,025	127,785	133,855
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	71,177	39,275
Poland	Value	56,779	55,142	18,895
Belgium	Value	22,588	17,361	21,269
Switzerland	Value	94,250	93,789	96,806
Australia	Value	5,998	6,196	4,101
Singapore	Value	8,817	15,706	12,011
All other exporters	Value	167,194	123,534	126,362
All reporting exporters	Value	1,954,180	2,201,480	1,610,138

Table continued.

Table 7.15 (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; shares in percent

Exporting country	Measure	2021	2022	2023
United States	Unit value	2.08	2.54	2.31
China	Unit value	3.02	2.95	2.46
India	Unit value	4.79	5.00	4.58
Subject exporters	Unit value	3.51	3.49	3.12
Germany	Unit value	2.35	2.87	3.02
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	3.72
Poland	Unit value	1.34	1.62	2.31
Belgium	Unit value	3.34	3.47	4.50
Switzerland	Unit value	21.29	21.64	27.86
Australia	Unit value	1.35	2.13	1.49
Singapore	Unit value	4.35	5.03	4.80
All other exporters	Unit value	6.82	6.88	13.05
All reporting exporters	Unit value	3.38	3.53	3.49
United States	Share of quantity	6.8	5.1	7.0
China	Share of quantity	41.6	49.0	45.4
India	Share of quantity	15.8	17.5	20.6
Subject exporters	Share of quantity	57.4	66.4	65.9
Germany	Share of quantity	8.3	7.1	9.6
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	2.3
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
Singapore	Share of quantity	0.4	0.5	0.5
All other exporters	Share of quantity	4.2	2.9	2.1
All reporting exporters	Share of quantity	100.0	100.0	100.0

Source: Source: Official exports statistics and official imports statistics of imports from India (constructed export statistics for India) under HS subheading 2918.99 as reported by various national statistical authorities in the Global Trade Atlas Suite database, accessed February 12, 2025.

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/ontology/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/ontology/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/ontology/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/ontology/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/ontology/pkg/FR-2024-04-30/pdf/2024-09270.pdf
89 FR 45923, May 24, 2024	<i>2,4-Dichlorophenoxyacetic Acid (“2,4-D”) From China and India Determinations</i>	https://www.govinfo.gov/ontology/pkg/FR-2024-05-24/pdf/2024-11409.pdf
89 FR 74908, September 13, 2024	<i>2,4-Dichlorophenoxyacetic Acid From India: Preliminary Affirmative Countervailing Duty Determination and Alignment of Final Determination With Final Antidumping Duty Determination</i>	https://www.govinfo.gov/ontology/pkg/FR-2024-09-13/pdf/2024-20861.pdf

Citation	Title	Link
89 FR 89963, November 14, 2024	<i>2,4-Dichlorophenoxyacetic Acid From the People's Republic of China: Preliminary Affirmative Determination of Sales at Less Than Fair Value, Postponement of Final Determination, and Extension of Provisional Measures</i>	https://www.govinfo.gov/content/pkg/FR-2024-11-14/pdf/2024-26458.pdf
89 FR 89949, November 14, 2024	<i>2,4-Dichlorophenoxyacetic Acid From India: Preliminary Affirmative Determination of Sales at Less Than Fair Value, Postponement of Final Determination, and Extension of Provisional Measures</i>	https://www.govinfo.gov/content/pkg/FR-2024-11-14/pdf/2024-26457.pdf
89 FR 93339, November 26, 2024	<i>2,4-Dichlorophenoxyacetic Acid (2,4-D) From China and India; Scheduling of the Final Phase of Countervailing Duty and Antidumping Duty Investigations</i>	https://www.govinfo.gov/content/pkg/FR-2024-11-26/pdf/2024-27687.pdf
90 FR 14957, April 7, 2025	<i>2,4-Dichlorophenoxyacetic Acid From the People's Republic of China: Final Affirmative Countervailing Duty Determination</i>	https://www.govinfo.gov/content/pkg/FR-2025-04-07/pdf/2025-05887.pdf
90 FR 14961, April 7, 2025	<i>2,4-Dichlorophenoxyacetic Acid From India: Final Affirmative Countervailing Duty Determination</i>	https://www.govinfo.gov/content/pkg/FR-2025-04-07/pdf/2025-05885.pdf
90 FR 14964, April 7, 2025	<i>2,4-Dichlorophenoxyacetic Acid From the People's Republic of China: Final Affirmative Determination of Sales at Less Than Fair Value</i>	https://www.govinfo.gov/content/pkg/FR-2025-04-07/pdf/2025-05886.pdf
90 FR 14969, April 7, 2025	<i>2,4-Dichlorophenoxyacetic Acid From India: Final Affirmative Determination of Sales at Less Than Fair Value</i>	https://www.govinfo.gov/content/pkg/FR-2025-04-07/pdf/2025-05888.pdf

APPENDIX B

LIST OF HEARING WITNESSES

CALENDAR OF PUBLIC HEARING

Those listed below appeared in the United States International Trade Commission's hearing:

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

Inv. Nos.: 701-TA-710-711 and 731-TA-1673-1674 (Final)

Date and Time: April 1, 2025 - 9:30 a.m.

Sessions were held in connection with these 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 PC)

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

Crowell & Moring LLP
Washington, DC
on behalf of

Corteva Agriscience LLC

Cynthia Ericson, Vice President, Weed Control Segment, Corteva Agriscience

Patrick Brown, Segment Technology Advisor, Weed Control, Corteva Agriscience

Elizabeth Little, Commercial Counsel, Corteva Agriscience

Jason Moulin, Marketing Director, Corteva Agriscience

Daniel Cannistra)
Weronika Bukowski) – OF COUNSEL
Amy Symonds)

**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
American Soybean Association

Caleb Ragland, President of the Executive Committee,
American Soybean Association

Kenneth Hartman, Jr., President of the Corn Board,
National Corn Growers Association

Jared R. Wessel)
Michael G. Jacobson) – OF COUNSEL
Lorea Mendiguren)

Polsinelli PC
Washington, DC
on behalf of

Drexel Chemical Company (“Drexel”)

Stanley Bernard, Vice President, Growth and Development, Drexel

Deanna Tanner Okun)
Lydia C. Pardini) – OF COUNSEL
Jane C. Dempsey)

Pillsbury Winthrop Shaw Pitman
Washington, DC
on behalf of

Nufarm Americas Inc. (“Nufarm”)

Kenneth Barham, Regional General Manager, North America, Crop Protection,
Nufarm Americas, Inc.

Thomas Ryan, Associate General Counsel, Nufarm Americas, Inc.

Daniel L. Porter)
) – OF COUNSEL
William C. Sjoberg)

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

Steptoe LLP
Washington, DC
on behalf of

PBI-Gordon Corporation ("PBI-Gordon")

Dr. Gary Wolf, Vice President of Operations, PBI-Gordon

Robert Horner, Director of Procurement, PBI-Gordon

Eric C. Emerson)	
)	– OF COUNSEL
Mert E. Arkan)	

REBUTTAL/CLOSING REMARKS:

In Support of Imposition (**Daniel Cannistra**, Crowell & Moring LLP)

In Opposition to Imposition (**Eric C. Emerson**, Steptoe LLP
and **Daniel L. Porter**, Pillsbury Winthrop Shaw Pitman)

APPENDIX C

SUMMARY DATA

Table C.1:	
2,4-D: Summary data concerning the total U.S. market (Corteva).....	C.3

Table C.2:	
2,4-D: Summary data concerning the merchant U.S. market (Corteva)	C.5

Table C.3:	
2,4-D: Summary data concerning the total U.S. market, including U.S. converters	C.7

Table C.4:	
2,4-D: Summary data concerning the merchant U.S. market, including U.S. converters	C.10

Total market: U.S. producer Corteva only

Table C.1

2,4-D: Summary data concerning the U.S. total market defining the domestic industry to be U.S. producer Corteva only, by item and period

Quantity=1,000 pounds dry weight acid equivalent; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per pound DWAE; Period changes=percent—exceptions noted; Interim period is January through September

Item	Reported data					Period change comparisons			
	Calendar year		2023	Interim		Calendar year		2022–23	Interim
	2021	2022		2023	2024	2021–23	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. shipments of U.S. imports from:									
China:									
Quantity.....	***	***	***	***	***	▲***	▲***	▼***	▲***
Value.....	***	***	***	***	***	▲***	▲***	▼***	▲***
Unit value.....	***	***	***	***	***	▲***	▲***	▼***	▼***
Ending inventory quantity.....	***	***	***	***	***	▲***	▲***	▼***	▲***
India:									
Quantity.....	***	***	***	***	***	▲***	▲***	▲***	▲***
Value.....	***	***	***	***	***	▲***	▲***	▼***	▲***
Unit value.....	***	***	***	***	***	▲***	▲***	▼***	▼***
Ending inventory quantity.....	***	***	***	***	***	▲***	▲***	▲***	▼***
Subject sources:									
Quantity.....	***	***	***	***	***	▲***	▲***	▼***	▲***
Value.....	***	***	***	***	***	▲***	▲***	▼***	▲***
Unit value.....	***	***	***	***	***	▲***	▲***	▼***	▼***
Ending inventory quantity.....	***	***	***	***	***	▲***	▲***	▼***	▲***
Nonsubject sources:									
Quantity.....	***	***	***	***	***	▲***	▲***	▲***	▼***
Value.....	***	***	***	***	***	▲***	▲***	▲***	▼***
Unit value.....	***	***	***	***	***	▲***	▲***	▼***	▼***
Ending inventory quantity.....	***	***	***	***	***	▲***	▲***	▲***	▼***
All import sources:									
Quantity.....	***	***	***	***	***	▲***	▲***	▼***	▲***
Value.....	***	***	***	***	***	▲***	▲***	▼***	▼***
Unit value.....	***	***	***	***	***	▲***	▲***	▼***	▼***
Ending inventory quantity.....	***	***	***	***	***	▲***	▲***	▼***	▲***

Table continued.

Table C.1 Continued

2.4-D: Summary data concerning the U.S. total market defining the domestic industry to be U.S. producer Corteva only, by item and period

Quantity=1,000 pounds dry weight acid equivalent; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per pound DWAE; Productivity=pounds DWAE per hour; Period changes=percent—exceptions noted; Interim period is January through September

Item	Reported data					Period change comparisons			
	2021	2022	2023	2023	2024	2021–23	2022–23	2022–23	2023–24
U.S. producer Corteva's:									
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 (fn3).....	***	***	***	***	***	▼***	▲***	▼***	***
Hours worked (1,000s) (fn3).....	***	***	***	***	***	▲***	▲***	▼***	▼***
Wages paid (\$1,000) (fn3).....	***	***	***	***	***	▲***	▲***	▼***	▼***
Hourly wages (dollars per hour) (fn3).....	***	***	***	***	***	▲***	▲***	▼***	▲***
Productivity (fn3).....	***	***	***	***	***	▼***	▼***	▼***	▼***
Unit labor costs (fn3).....	***	***	***	***	***	▲***	▲***	▲***	▲***
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 email from ***. 508-compliant tables for these data are contained in parts 3, 4, 6, and 7 of this report.

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

fn1.—Reported data are in percent and period changes are in percentage points.

fn2.—Percent changes only calculated when both comparison values represent profits; the directional change in profitability is provided when one or both comparison values represent a loss.

fn3.—Employment related information for U.S. producer Corteva covers both its Midland and Freeport facility.

Merchant market: U.S. producer Corteva only

Table C.2

2,4-D: Summary data concerning the U.S. merchant market, defining the domestic industry as U.S. producer Corteva only, by item and period

Quantity=1,000 pounds dry weight acid equivalent; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per pound DWAE; Period changes=percent—exceptions noted; Interim period is January through September

Item	Reported data					Period change comparisons			
	Calendar year			Interim		Calendar year			Interim
	2021	2022	2023	2023	2024	2021–23	2022–23	2022–23	2023–24
U.S. merchant market consumption quantity:									
Amount.....	***	***	***	***	***	▲***	▲***	▼***	▲***
Producers' share (fn1).....	***	***	***	***	***	▼***	▼***	▼***	▼***
Importers' share (fn1):									
China.....	***	***	***	***	***	▲***	▲***	▼***	▲***
India.....	***	***	***	***	***	▲***	▲***	▲***	▲***
Subject sources.....	***	***	***	***	***	▲***	▲***	▲***	▲***
Nonsubject sources.....	***	***	***	***	***	▲***	▼***	▲***	▼***
All import sources.....	***	***	***	***	***	▲***	▲***	▲***	▲***
U.S. merchant market consumption value:									
Amount.....	***	***	***	***	***	▲***	▲***	▼***	▼***
Producers' share (fn1).....	***	***	***	***	***	▼***	▼***	▼***	▼***
Importers' share (fn1):									
China.....	***	***	***	***	***	▲***	▲***	▼***	▲***
India.....	***	***	***	***	***	▲***	▲***	▲***	▲***
Subject sources.....	***	***	***	***	***	▲***	▲***	▼***	▲***
Nonsubject sources.....	***	***	***	***	***	▲***	▼***	▲***	▼***
All import sources.....	***	***	***	***	***	▲***	▲***	▲***	▲***
U.S. shipments of U.S. imports from:									
China:									
Quantity.....	***	***	***	***	***	▲***	▲***	▼***	▲***
Value.....	***	***	***	***	***	▲***	▲***	▼***	▲***
Unit value.....	***	***	***	***	***	▲***	▲***	▼***	▼***
Ending inventory quantity.....	***	***	***	***	***	▲***	▲***	▼***	▲***
India:									
Quantity.....	***	***	***	***	***	▲***	▲***	▲***	▲***
Value.....	***	***	***	***	***	▲***	▲***	▼***	▲***
Unit value.....	***	***	***	***	***	▲***	▲***	▼***	▼***
Ending inventory quantity.....	***	***	***	***	***	▲***	▲***	▲***	▼***
Subject sources:									
Quantity.....	***	***	***	***	***	▲***	▲***	▼***	▲***
Value.....	***	***	***	***	***	▲***	▲***	▼***	▲***
Unit value.....	***	***	***	***	***	▲***	▲***	▼***	▼***
Ending inventory quantity.....	***	***	***	***	***	▲***	▲***	▼***	▲***
Nonsubject sources:									
Quantity.....	***	***	***	***	***	▲***	▲***	▲***	▼***
Value.....	***	***	***	***	***	▲***	▲***	▲***	▼***
Unit value.....	***	***	***	***	***	▲***	▲***	▼***	▼***
Ending inventory quantity.....	***	***	***	***	***	▲***	▲***	▲***	▼***
All import sources:									
Quantity.....	***	***	***	***	***	▲***	▲***	▼***	▲***
Value.....	***	***	***	***	***	▲***	▲***	▼***	▼***
Unit value.....	***	***	***	***	***	▲***	▲***	▼***	▼***
Ending inventory quantity.....	***	***	***	***	***	▲***	▲***	▼***	▲***

Table continued.

Table C.2 Continued

2.4-D: Summary data concerning the U.S. merchant market, defining the domestic industry as U.S. producer Corteva's, by item and period

Quantity=1,000 pounds dry weight acid equivalent; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per pound DWAE; Period changes=percent—exceptions noted; Interim period is January through September

Item	Reported data					Period change comparisons			
	2021	2022	2023	2023	2024	2021–23	2022–23	2022–23	2023–24
U.S. producer Corteva's:									
Commercial U.S. shipments & swap shipments:									
Quantity.....	***	***	***	***	***	▼***	▼***	▼***	▼***
Value.....	***	***	***	***	***	▼***	▼***	▼***	▼***
Unit value.....	***	***	***	***	***	▲***	▲***	▼***	▼***
Open market sales:									
Quantity.....	***	***	***	***	***	▼***	▼***	▼***	▼***
Value.....	***	***	***	***	***	▼***	▼***	▼***	▼***
Unit value.....	***	***	***	***	***	▲***	▲***	▼***	▲***
Cost of goods sold (COGS).....	***	***	***	***	***	▼***	▼***	▼***	▼***
Gross profit or (loss) (fn2).....	***	***	***	***	***	▼***	▼***	▲***	▼***
SG&A expenses.....	***	***	***	***	***	▼***	▲***	▼***	▼***
Operating income or (loss) (fn2).....	***	***	***	***	***	▼***	▼***	▲***	▼***
Net income or (loss) (fn2).....	***	***	***	***	***	▼***	▼***	▲***	▼***
Unit COGS.....	***	***	***	***	***	▲***	▲***	▼***	▲***
Unit SG&A expenses.....	***	***	***	***	***	▲***	▲***	▼***	▲***
Unit operating income or (loss) (fn2).....	***	***	***	***	***	▼***	▼***	▼***	▼***
Unit net income or (loss) (fn2).....	***	***	***	***	***	▼***	▼***	▼***	▼***
COGS/sales (fn1).....	***	***	***	***	***	▲***	▲***	▲***	▲***
Operating income or (loss)/sales (fn1)....	***	***	***	***	***	▼***	▼***	▼***	▼***
Net income or (loss)/sales (fn1).....	***	***	***	***	***	▼***	▼***	▼***	▼***

Source: Compiled from data submitted in response to Commission questionnaires. 508-compliant tables for these data are contained in parts 3, 4, 6, and 7 of this report.

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

fn1.—Reported data are in percent and period changes are in percentage points.

fn2.—Percent changes only calculated when both comparison values represent profits; the directional change in profitability is provided when one or both comparison values represent a loss.

Total market: U.S. producer Corteva and all U.S. converters

Table C.3

2.4-D: Summary data concerning the U.S. total market defining the domestic industry to be U.S. producer Corteva and all reporting downstream U.S. salt and ester converters, by item and period

Quantity=1,000 pounds dry weight acid equivalent; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per pound DWAE; Period changes=percent—exceptions noted; Interim period is January through September

Item	Reported data					Period change comparisons			
	Calendar year			Interim		Calendar year		Interim	
	2021	2022	2023	2023	2024	2021–23	2022–23	2022–23	2023–24
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.....	***	***	***	***	***	▼***	▼***	▲***	▼***
Incremental value added to imports....	***	***	***	***	***	▲***	▲***	▼***	▲***
Total value.....	***	***	***	***	***	▼***	▼***	▼***	▼***
Importers' share (fn1):									
China.....	***	***	***	***	***	▲***	▲***	▼***	▲***
India.....	***	***	***	***	***	▲***	▲***	▲***	▲***
Subject sources.....	***	***	***	***	***	▲***	▲***	▲***	▲***
Nonsubject sources.....	***	***	***	***	***	▲***	▲***	▲***	▼***
All import sources.....	***	***	***	***	***	▲***	▲***	▲***	▲***
U.S. shipments of U.S. imports from:									
China:									
Quantity.....	***	***	***	***	***	▲***	▲***	▼***	▲***
Value.....	***	***	***	***	***	▲***	▲***	▼***	▲***
Unit value.....	***	***	***	***	***	▲***	▲***	▼***	▼***
Ending inventory quantity.....	***	***	***	***	***	▲***	▲***	▼***	▲***
India:									
Quantity.....	***	***	***	***	***	▲***	▲***	▲***	▲***
Value.....	***	***	***	***	***	▲***	▲***	▼***	▲***
Unit value.....	***	***	***	***	***	▲***	▲***	▼***	▼***
Ending inventory quantity.....	***	***	***	***	***	▲***	▲***	▲***	▼***
Subject sources:									
Quantity.....	***	***	***	***	***	▲***	▲***	▼***	▲***
Value.....	***	***	***	***	***	▲***	▲***	▼***	▲***
Unit value.....	***	***	***	***	***	▲***	▲***	▼***	▼***
Ending inventory quantity.....	***	***	***	***	***	▲***	▲***	▼***	▲***
Nonsubject sources:									
Quantity.....	***	***	***	***	***	▲***	▲***	▲***	▼***
Value.....	***	***	***	***	***	▲***	▲***	▲***	▼***
Unit value.....	***	***	***	***	***	▲***	▲***	▼***	▼***
Ending inventory quantity.....	***	***	***	***	***	▲***	▲***	▲***	▼***
All import sources:									
Quantity.....	***	***	***	***	***	▲***	▲***	▼***	▲***
Value.....	***	***	***	***	***	▲***	▲***	▼***	▼***
Unit value.....	***	***	***	***	***	▲***	▲***	▼***	▼***
Ending inventory quantity.....	***	***	***	***	***	▲***	▲***	▼***	▲***

Table continued.

Table C.3 Continued

2.4-D: Summary data concerning the U.S. total market defining the domestic industry to be U.S. producer Corteva and all reporting downstream U.S. salt and ester converters, by item and period

Quantity=1,000 pounds dry weight acid equivalent; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per pound DWAE; Productivity=pounds DWAE per hour; Period changes=percent—exceptions noted; Interim period is January through September

Item	Reported data					Period change comparisons			
	2021	2022	2023	Interim 2023	2024	2021–23	2022–23	2022–23	Interim 2023–24
U.S. producer's and U.S. converters':									
Producer: Practical capacity quantity.....	***	***	***	***	***	▲***	▼***	▲***	***
Producer: Production quantity.....	***	***	***	***	***	▼***	▲***	▼***	▼***
Producer: Capacity utilization (fn1).....	***	***	***	***	***	▼***	▲***	▼***	▼***
Converters: Practical capacity quantity...	***	***	***	***	***	▼***	▲***	▼***	▲***
Converters: Production quantity.....	***	***	***	***	***	▼***	▲***	▼***	▲***
Converters: Capacity utilization (fn1).....	***	***	***	***	***	▼***	▲***	▼***	▲***
U.S. shipments (fn2):									
Quantity.....	***	***	***	***	***	▼***	▲***	▼***	▼***
Value:									
Fully domestic value.....	***	***	***	***	***	▼***	▲***	▼***	▼***
Incremental value added to imports	***	***	***	***	***	▲***	▲***	▼***	▼***
Total value.....	***	***	***	***	***	▼***	▲***	▼***	▼***
Unit value.....	***	***	***	***	***	▼***	▲***	▼***	▼***
Export shipments:									
Quantity.....	***	***	***	***	***	▼***	▼***	▼***	▼***
Value.....	***	***	***	***	***	▼***	▼***	▼***	▼***
Unit value.....	***	***	***	***	***	▲***	▲***	▲***	▲***
Producer: Ending inventory quantity.....	***	***	***	***	***	▼***	▼***	▼***	▼***
Producer: Inv./total shipments (fn1).....	***	***	***	***	***	▼***	▼***	▼***	▼***
Converters: Ending inventory quantity.....	***	***	***	***	***	▲***	▲***	▲***	▲***
Converters: Inv./total shipments (fn1).....	***	***	***	***	***	▲***	▲***	▲***	▲***
Production workers (fn3).....	***	***	***	***	***	▲***	▲***	▼***	▲***
Hours worked (1,000s) (fn3).....	***	***	***	***	***	▲***	▲***	▲***	▼***
Wages paid (\$1,000) (fn3).....	***	***	***	***	***	▲***	▲***	▼***	▼***
Hourly wages (dollars per hour) (fn3).....	***	***	***	***	***	▲***	▲***	▼***	▲***
Producer: Productivity (fn3).....	***	***	***	***	***	▼***	▼***	▼***	▼***
Producer: Unit labor costs (fn3).....	***	***	***	***	***	▲***	▲***	▲***	▲***
Converters: Productivity.....	***	***	***	***	***	▼***	▲***	▼***	▲***
Converters: Unit labor costs.....	***	***	***	***	***	▲***	▲***	▲***	▼***
U.S. producer's:									
Net sales:									
Quantity.....	***	***	***	***	***	▼***	▲***	▼***	▼***
Value.....	***	***	***	***	***	▼***	▲***	▼***	▼***
Unit value.....	***	***	***	***	***	▼***	▲***	▼***	▼***
Cost of goods sold (COGS).....	***	***	***	***	***	▲***	▲***	▼***	▼***
Gross profit or (loss) (fn4).....	***	***	***	***	***	▼***	▼***	▼***	▼***
SG&A expenses.....	***	***	***	***	***	▲***	▲***	▼***	▲***
Operating income or (loss) (fn4).....	***	***	***	***	***	▼***	▼***	▼***	▼***
Net income or (loss) (fn4).....	***	***	***	***	***	▼***	▼***	▼***	▼***
Unit COGS.....	***	***	***	***	***	▲***	▲***	▼***	▼***
Unit SG&A expenses.....	***	***	***	***	***	▲***	▲***	▲***	▲***
Unit operating income or (loss) (fn4).....	***	***	***	***	***	▼***	▼***	▼***	▼***
Unit net income or (loss) (fn4).....	***	***	***	***	***	▼***	▼***	▼***	▼***
COGS/sales (fn1).....	***	***	***	***	***	▲***	▲***	▲***	▲***
Operating income or (loss)/sales (fn1)....	***	***	***	***	***	▼***	▼***	▼***	▼***
Net income or (loss)/sales (fn1).....	***	***	***	***	***	▼***	▼***	▼***	▼***
Capital expenditures.....	***	***	***	***	***	▲***	▲***	▼***	▼***
Research and development expenses....	***	***	***	***	***	***	***	***	***
Total assets.....	***	***	***	***	***	▼***	▼***	▼***	***

Table continued.

Table C.3 Continued

2,4-D: Summary data concerning the U.S. total market defining the domestic industry to be U.S. producer Corteva and all reporting downstream U.S. salt and ester converters, by item and period

Quantity=1,000 pounds dry weight acid equivalent; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per pound DWAE; Period changes=percent—exceptions noted; Interim period is January through September

Item	Reported data					Period change comparisons			
	2021	2022	2023	Interim 2023	2024	2021–23	Calendar year 2022–23	2022–23	Interim 2023–24
U.S. converters':									
Net sales:									
Quantity.....	***	***	***	***	***	▼***	▲***	▼***	▲***
Value.....	***	***	***	***	***	▲***	▲***	▼***	▼***
Unit value.....	***	***	***	***	***	▲***	▲***	▼***	▼***
Cost of goods sold (COGS).....	***	***	***	***	***	▲***	▲***	▼***	▼***
Gross profit or (loss) (fn4).....	***	***	***	***	***	▲***	▲***	▼***	▼***
SG&A expenses.....	***	***	***	***	***	▼***	▲***	▼***	▼***
Operating income or (loss) (fn4).....	***	***	***	***	***	▼***	▲***	▼***	▼***
Net income or (loss) (fn4).....	***	***	***	***	***	▼***	▲***	▼***	▼***
Unit COGS.....	***	***	***	***	***	▲***	▲***	▲***	▼***
Unit SG&A expenses.....	***	***	***	***	***	▲***	▲***	▲***	▼***
Unit operating income or (loss) (fn4).....	***	***	***	***	***	▼***	▲***	▼***	▼***
Unit net income or (loss) (fn4).....	***	***	***	***	***	▼***	▲***	▼***	▼***
COGS/sales (fn1).....	***	***	***	***	***	▲***	▼***	▲***	▲***
Operating income or (loss)/sales (fn1)....	***	***	***	***	***	▼***	▲***	▼***	▼***
Net income or (loss)/sales (fn1).....	***	***	***	***	***	▼***	▲***	▼***	▼***
Capital expenditures.....	***	***	***	***	***	▲***	▼***	▲***	▲***
Research and development expenses....	***	***	***	***	***	▼***	▼***	▲***	▲***
Total assets.....	***	***	***	***	***	▲***	▲***	▼***	***
U.S. producer's and U.S. converters':									
Net sales:									
Quantity.....	***	***	***	***	***	▼***	▲***	▼***	▲***
Value.....	***	***	***	***	***	▼***	▲***	▼***	▼***
Unit value.....	***	***	***	***	***	▲***	▲***	▼***	▼***
Cost of goods sold (COGS).....	***	***	***	***	***	▲***	▲***	▼***	▼***
Gross profit or (loss) (fn4).....	***	***	***	***	***	▼***	▲***	▼***	▼***
SG&A expenses.....	***	***	***	***	***	▲***	▲***	▼***	▼***
Operating income or (loss) (fn4).....	***	***	***	***	***	▼***	▲***	▼***	▼***
Net income or (loss) (fn4).....	***	***	***	***	***	▼***	▲***	▼***	▼***
Unit COGS.....	***	***	***	***	***	▲***	▲***	▼***	▼***
Unit SG&A expenses.....	***	***	***	***	***	▲***	▲***	▲***	▼***
Unit operating income or (loss) (fn4).....	***	***	***	***	***	▼***	▲***	▼***	▼***
Unit net income or (loss) (fn4).....	***	***	***	***	***	▼***	▲***	▼***	▼***
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 email from ***. 508-compliant tables for these data are contained in parts 3, 4, 6, and 7 of this report.

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

fn1.—Reported data are in percent and period changes are in percentage points.

fn2.—Quantity for U.S. producers' U.S. shipments reflects U.S. producer Corteva'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 additional 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 reflects the fully domestic value.

fn3.—Employment related information for U.S. producer Corteva covers both its Midland and Freeport facility.

fn4.—Percent changes only calculated when both comparison values represent profits; the directional change in profitability is provided when one or both comparison values represent a loss.

Merchant market: U.S. producer Corteva and all U.S. converters

Table C.4

2.4-D: Summary data concerning the U.S. merchant market defining the domestic industry to be U.S. producer Corteva and all reporting downstream U.S. salt and ester converters, by item and period

Quantity=1,000 pounds dry weight acid equivalent; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per pound DWAE; Period changes=percent—exceptions noted; Interim period is January through September

Item	Reported data					Period change comparisons			
	Calendar year			Interim		Calendar year		Interim	
	2021	2022	2023	2023	2024	2021–23	2022–23	2022–23	2023–24
U.S. merchant market consumption quantity:									
Amount.....	***	***	***	***	***	▲***	▲***	▼***	▲***
Producers' share (fn1).....	***	***	***	***	***	▼***	▼***	▼***	▼***
Importers' share (fn1):									
China.....	***	***	***	***	***	▲***	▲***	▼***	▲***
India.....	***	***	***	***	***	▲***	▲***	▲***	▲***
Subject sources.....	***	***	***	***	***	▲***	▲***	▲***	▲***
Nonsubject sources.....	***	***	***	***	***	▲***	▼***	▲***	▼***
All import sources.....	***	***	***	***	***	▲***	▲***	▲***	▲***
U.S. merchant market consumption value:									
Amount.....	***	***	***	***	***	▲***	▲***	▼***	▼***
Producers' share (fn1):									
Fully domestic value.....	***	***	***	***	***	▼***	▼***	▼***	▼***
Incremental value added to imports....	***	***	***	***	***	▼***	▼***	▲***	▲***
Total value.....	***	***	***	***	***	▼***	▼***	▼***	▼***
Importers' share (fn1):									
China.....	***	***	***	***	***	▲***	▲***	▼***	▲***
India.....	***	***	***	***	***	▲***	▲***	▲***	▲***
Subject sources.....	***	***	***	***	***	▲***	▲***	▼***	▲***
Nonsubject sources.....	***	***	***	***	***	▲***	▼***	▲***	▼***
All import sources.....	***	***	***	***	***	▲***	▲***	▲***	▲***
U.S. shipments of U.S. imports from:									
China:									
Quantity.....	***	***	***	***	***	▲***	▲***	▼***	▲***
Value.....	***	***	***	***	***	▲***	▲***	▼***	▲***
Unit value.....	***	***	***	***	***	▲***	▲***	▼***	▼***
Ending inventory quantity.....	***	***	***	***	***	▲***	▲***	▼***	▲***
India:									
Quantity.....	***	***	***	***	***	▲***	▲***	▲***	▲***
Value.....	***	***	***	***	***	▲***	▲***	▼***	▲***
Unit value.....	***	***	***	***	***	▲***	▲***	▼***	▼***
Ending inventory quantity.....	***	***	***	***	***	▲***	▲***	▲***	▼***
Subject sources:									
Quantity.....	***	***	***	***	***	▲***	▲***	▼***	▲***
Value.....	***	***	***	***	***	▲***	▲***	▼***	▲***
Unit value.....	***	***	***	***	***	▲***	▲***	▼***	▼***
Ending inventory quantity.....	***	***	***	***	***	▲***	▲***	▼***	▲***
Nonsubject sources:									
Quantity.....	***	***	***	***	***	▲***	▲***	▲***	▼***
Value.....	***	***	***	***	***	▲***	▲***	▲***	▼***
Unit value.....	***	***	***	***	***	▲***	▲***	▼***	▼***
Ending inventory quantity.....	***	***	***	***	***	▲***	▲***	▲***	▼***
All import sources:									
Quantity.....	***	***	***	***	***	▲***	▲***	▼***	▲***
Value.....	***	***	***	***	***	▲***	▲***	▼***	▼***
Unit value.....	***	***	***	***	***	▲***	▲***	▼***	▼***
Ending inventory quantity.....	***	***	***	***	***	▲***	▲***	▼***	▲***

Table continued.

Table C.4 Continued

2.4-D: Summary data concerning the U.S. merchant market defining the domestic industry to be U.S. producer Corteva and all reporting downstream U.S. salt and ester converters, by item and period

Quantity=1,000 pounds dry weight acid equivalent; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per pound DWAE; Period changes=percent—exceptions noted; Interim period is January through September

Item	Reported data					Period change comparisons			
	Calendar year			Interim		Calendar year		Interim	
	2021	2022	2023	2023	2024	2021–23	2022–23	2022–23	2023–24
U.S. producer's and U.S. converters':									
Commercial U.S. shipments and swap transactions (fn2):									
Quantity.....	***	***	***	***	***	▼***	▼***	▼***	▼***
Value:									
Fully domestic value.....	***	***	***	***	***	▼***	▼***	▼***	▼***
Incremental value added to imports	***	***	***	***	***	▲***	▼***	▲***	▲***
Total value.....	***	***	***	***	***	▼***	▼***	▼***	▼***
Unit value.....	***	***	***	***	***	▲***	▲***	▼***	▲***
U.S. producer's:									
Open market 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).....	***	***	***	***	***	▼***	▼***	▼***	▼***
U.S. converters':									
Open market 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).....	***	***	***	***	***	▼***	▲***	▼***	▼***

Table continued.

Table C.4 Continued

2,4-D: Summary data concerning the U.S. merchant market defining the domestic industry to be U.S. producer Corteva and all reporting downstream U.S. salt and ester converters, by item and period

Quantity=1,000 pounds dry weight acid equivalent; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per pound DWAE; Period changes=percent—exceptions noted; Interim period is January through September

Item	Reported data					Period change comparisons			
	Calendar year		2023	Interim		Calendar year		2022–23	Interim
	2021	2022		2023	2024	2021–23	2022–23		
U.S. producer's and U.S. converters':									
Open market 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. 508-compliant tables for these data are contained in appendices 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 U.S. producer Corteva'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 additional 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 reflects the fully domestic value.

fn3.—Percent changes only calculated when both comparison values represent profits; the directional change in profitability is provided when one or both comparison values represent a loss.

APPENDIX D

TRADE DATA INCLUDING U.S. CONVERTERS

Table D.1 2,4-D: Position on petition, production location, and shares	D.3
Table D.2 2,4-D: Ownership, related and/or affiliated firms.....	D.3
Table D.3 2,4-D: Changes in operations.....	D.3
Table D.4 2,4-D: Domestic operations	D.4
Table D.5 2,4-D: Domestic operations, by factor.....	D.5
Table D.6 2,4-D: Domestic operations, by factor.....	D.10
Table D.7 2,4-D: Complexity and importance of operations	D.12
Table D.8 2,4-D: Capacity, production, and utilization, by period	D.13
Table D.9 2,4-D: Practical capacity, by firm and period	D.14
Table D.10 2,4-D: U.S. converters' production, by source and period	D.16
Table D.11 2,4-D: Total shipments, by destination and period	D.16
Table D.12 2,4-D: U.S. shipments, by type and period	D.17
Table D.13 2,4-D: Production used in downstream products	D.17
Table D.14 2,4-D: Contribution to downstream product, by material input.....	D.18
Table D.15 2,4-D: U.S. shipments, by source and chemical form, 2023.....	D.19
Table D.16 2,4-D: U.S. shipments for use in apparent consumption, by period	D.21
Table D.17 2,4-D: Inventories and their ratio to select items, by period	D.21
Table D.18 2,4-D: ***'s business model	D.22
Table D.19 2,4-D: ***'s U.S. production, U.S. imports, and ratios	D.23
Table D.20 2,4-D: ***'s business model	D.24
Table D.21 2,4-D: ***'s U.S. production, U.S. imports, and ratios	D.25
Table D.22 2,4-D: ***'s business model	D.26
Table D.23 2,4-D: ***'s U.S. production, U.S. imports, and ratios	D.27
Table D.24 2,4-D: ***'s business model	D.28
Table D.25 2,4-D: ***'s U.S. production, U.S. imports, and ratios	D.29
Table D.26 2,4-D: Reasons for imports, by firm.....	D.29
Table D.27 2,4-D: Employment related information	D.30
Table D.28 2,4-D: Apparent U.S. consumption/market shares, total market, quantity	D.30
Table D.29 2,4-D: Apparent U.S. consumption/market shares, merchant market, quantity ...	D.31
Table D.30 2,4-D: Apparent U.S. consumption/market shares, total market, value	D.32
Table D.31 2,4-D: Apparent U.S. consumption/market shares, merchant market, value	D.33
Figure D.1 2,4-D: Capacity, production, and capacity utilization, by period	D.15
Figure D.2 2,4-D: U.S. shipments, by source and chemical form, 2023	D.20

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 locations	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 and impact of COVID-19, since January 1, 2021

Item	Firm name and narrative response on changes in operations
***	***
***	***
***	***
***	***

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 operations

Firm	Narrative response on domestic operations
Albaugh	***
Corteva	***
Drexel	***
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 operations, by factor

Item	Firm name and narrative response on changes in operations
Capital investments	***
Capital investments	***

Item	Firm name and narrative response on changes in operations
Capital investments	***

Item	Firm name and narrative response on changes in operations
Capital investments	***
Capital investments	***
Technical expertise	***
Technical expertise	***
Technical expertise	***
Technical expertise	***

Item	Firm name and narrative response on changes in operations
Technical expertise	***
Value added	***
Value added	***
Value added	***
Value added	***
Value added	***
Employment	***
Employment	***
Employment	***
Employment	***
Employment	***
Quantity, type, and source of parts	***
Quantity, type, and source of parts	***

Item	Firm name and narrative response on changes in operations
Quantity, type, and source of parts	***
Quantity, type, and source of parts	***
Quantity, type, and source of parts	***
Costs and activities	***
Costs and activities	***
Costs and activities	***
Costs and activities	***
Costs and activities	***

Table D.6 2,4-D: U.S. producers', including U.S. converters, reported domestic operations, by factor

Value as noted in the table; value added in percent; employment in average number of PRWs

Item	Albaugh	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
Employment	*** PRWs	*** PRWs	*** PRWs	*** PRWs
Quantity, type, and source of parts	***	***	***	***

Table continued.

Table D.6 (Continued) 2,4-D: U.S. producers', including U.S. converters, reported domestic operations, by factor

Value as noted in the table; value added in percent; employment in average number of PRWs

Item	Corteva	All U.S. converters
Capital investments: Greenfield	***	***
Capital investments: Assets	***	***
Capital investments: Capital expenditures	***	***
Technical expertise: R&D expenses	***	***
Value added	*** percent	*** percent
Employment	*** 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 of conversion costs (direct labor and other factory costs) out of cost of goods sold (COGS). Ranges cover full calendar years.

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	***	***
Nufarm	***	***
PBI-Gordon	***	***

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

Note: The four U.S. converters' average rating was 4.5. The average rating for U.S. converters and Corteva was 4.6.

Table D.8 2,4-D: U.S. converters' capacity, production, and utilization, by period

Capacity and production in 1,000 pounds; utilization in percent; interim period is January through September

Item	2021	2022	2023	Interim 2023	Interim 2024
Capacity	***	***	***	***	***
Production	***	***	***	***	***
Utilization	***	***	***	***	***

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

Table D.9 2,4-D: U.S. converters' output: Practical capacity, by firm and period

Capacity in 1,000 pounds dry weight acid equivalent; interim period is January through September

Firm	2021	2022	2023	Interim 2023	Interim 2024
Albaugh	***	***	***	***	***
Drexel	***	***	***	***	***
Nufarm	***	***	***	***	***
PBI-Gordon	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table D.9 (Continued) 2,4-D: U.S. converters' output: Production, by firm and period

Production in 1,000 pounds dry weight acid equivalent; interim period is January through September

Firm	2021	2022	2023	Interim 2023	Interim 2024
Albaugh	***	***	***	***	***
Drexel	***	***	***	***	***
Nufarm	***	***	***	***	***
PBI-Gordon	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table D.9 (Continued) 2,4-D: U.S. converters' output: Capacity utilization, by firm and period

Capacity utilization ratios in percent; Interim period is January through September

Firm	2021	2022	2023	Interim 2023	Interim 2024
Albaugh	***	***	***	***	***
Drexel	***	***	***	***	***
Nufarm	***	***	***	***	***
PBI-Gordon	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table D.9 (Continued) 2,4-D: U.S. converters' output: Share of production, by firm and period

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

Firm	2021	2022	2023	Interim 2023	Interim 2024
Albaugh	***	***	***	***	***
Drexel	***	***	***	***	***
Nufarm	***	***	***	***	***
PBI-Gordon	***	***	***	***	***
All firms	100.0	100.0	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 Corteva may be used as an input for production from U.S. converters.

Figure D.1 2,4-D: U.S. converters' capacity, production, and capacity utilization, by period

* * * * *

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

Note: DWAE = dry weight acid equivalent.

Table D.10 2,4-D: U.S. converters' production, by source and period

Quantity in 1,000 pounds dry weight acid equivalent; Shares in percent; Interim period is January through September

Source	Measure	2021	2022	2023	Interim 2023	Interim 2024
United States	Quantity	***	***	***	***	***
Subject	Quantity	***	***	***	***	***
Nonsubject	Quantity	***	***	***	***	***
All import sources	Quantity	***	***	***	***	***
All sources	Quantity	***	***	***	***	***
United States	Share	***	***	***	***	***
Subject	Share	***	***	***	***	***
Nonsubject	Share	***	***	***	***	***
All import sources	Share	***	***	***	***	***
All sources	Share	100.0	100.0	100.0	100.0	100.0

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

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.11 2,4-D: U.S. converters' total shipments, by destination and period

Quantity in 1,000 pounds dry weight acid equivalent; value in 1,000 dollars; unit values in dollars per pounds DWAE; shares in percent; interim period is January through September

Item	Measure	2021	2022	2023	Interim 2023	Interim 2024
U.S. shipments	Quantity	***	***	***	***	***
Export shipments	Quantity	***	***	***	***	***
Total shipments	Quantity	***	***	***	***	***
U.S. shipments	Value	***	***	***	***	***
Export shipments	Value	***	***	***	***	***
Total shipments	Value	***	***	***	***	***
U.S. shipments	Unit value	***	***	***	***	***
Export shipments	Unit value	***	***	***	***	***
Total shipments	Unit value	***	***	***	***	***
U.S. shipments	Share of quantity	***	***	***	***	***
Export shipments	Share of quantity	***	***	***	***	***
Total shipments	Share of quantity	100.0	100.0	100.0	100.0	100.0
U.S. shipments	Share of value	***	***	***	***	***
Export shipments	Share of value	***	***	***	***	***
Total shipments	Share of value	100.0	100.0	100.0	100.0	100.0

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

Note: Zeroes, null values, and undefined calculations are suppressed and shown as "—". 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. converters' U.S. shipments, by type and period

Quantity in 1,000 pounds dry weight acid equivalent; value in 1,000 dollars; unit values in dollars per pounds DWAE; shares in percent; interim period is January through September

Item	Measure	2021	2022	2023	Interim 2023	Interim 2024
Commercial U.S. shipments	Quantity	***	***	***	***	***
Internal consumption	Quantity	***	***	***	***	***
Transfers to related firms	Quantity	***	***	***	***	***
U.S. shipments	Quantity	***	***	***	***	***
Commercial U.S. shipments	Value	***	***	***	***	***
Internal consumption	Value	***	***	***	***	***
Transfers to related firms	Value	***	***	***	***	***
U.S. shipments	Value	***	***	***	***	***
Commercial U.S. shipments	Unit value	***	***	***	***	***
Internal consumption	Unit value	***	***	***	***	***
Transfers to related firms	Unit value	***	***	***	***	***
U.S. shipments	Unit value	***	***	***	***	***
Commercial U.S. shipments	Share of quantity	***	***	***	***	***
Internal consumption	Share of quantity	***	***	***	***	***
Transfers to related firms	Share of quantity	***	***	***	***	***
U.S. shipments	Share of quantity	100.0	100.0	100.0	100.0	100.0
Commercial U.S. shipments	Share of value	***	***	***	***	***
Internal consumption	Share of value	***	***	***	***	***
Transfers to related firms	Share of value	***	***	***	***	***
U.S. shipments	Share of value	100.0	100.0	100.0	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 “—”. 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. converters' production used in downstream products, by type of consumption and period

Quantity in 1,000 pounds dry weight acid equivalent; Shares in percent; Interim period is January through September

Item	Measure	2021	2022	2023	Interim 2023	Interim 2024
Internal consumption: Sold as is	Quantity	***	***	***	***	***
Internal consumption: Processed into downstream products	Quantity	***	***	***	***	***
Internal consumption: Total	Quantity	***	***	***	***	***
Internal consumption: Sold as is	Share	***	***	***	***	***
Internal consumption: Processed into downstream products	Share	***	***	***	***	***
Internal consumption: Total	Share	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 “—”. ***.

Table D.14 2,4-D: U.S. converters' 2,4-D contribution to downstream product, by material input, 2023

Shares 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.

Table D.15 2,4-D: U.S. producers', including U.S. converters, and U.S. importers' U.S. shipments, by source and chemical form, 2023

Quantity in 1,000 pounds dry weight acid equivalent

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

Table continued.

Table D.15 (Continued) 2,4-D: U.S. producers', including U.S. converters, and U.S. importers' U.S. shipments, by source and chemical form, 2023

Share across in percent

Source	Acid	Salt	Ester	All chemical forms
U.S. producers	***	***	***	100.0
U.S. converters	***	***	***	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 D.15 (Continued) 2,4-D: U.S. producers', including U.S. converters, and U.S. importers' U.S. shipments, by source and chemical form, 2023

Share down in percent

Source	Acid	Salt	Ester	All chemical forms
U.S. producers	***	***	***	***
U.S. converters	***	***	***	***
China	***	***	***	***
India	***	***	***	***
Subject sources	***	***	***	***
Nonsubject sources	***	***	***	***
All import sources	***	***	***	***
All sources	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 “—”. U.S. converters input 2,4-D from U.S. producers and U.S. imports sources and therefore their data are not included in the “all chemical forms” total to avoid double counting.

Figure D.2 2,4-D: U.S. converters' and U.S. importers' U.S. shipments, by source and chemical form, 2023

* * * * *

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

Table D.16 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 dry weight acid equivalent; value in 1,000 dollars; interim period is January through September

Item	Measure	2021	2022	2023	Interim 2023	Interim 2024
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.17 2,4-D: U.S. converters' inventories and their ratio to select items, by period

Quantity in 1,000 pounds dry weight acid equivalent; ratios in percent; interim period is January through September

Item	2021	2022	2023	Interim 2023	Interim 2024
End-of-period inventory quantity	***	***	***	***	***
Inventory ratio to U.S. production	***	***	***	***	***
Inventory ratio to U.S. shipments	***	***	***	***	***
Inventory ratio to total shipments	***	***	***	***	***

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

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.18 2,4-D: *'s business model for U.S. production of formulated 2,4-D products, by sources of 2,4-D input into production and period**

Production in 1,000 pounds dry weight acid equivalent; acid input costs in 1,000 dollars; shares in percent; unit values in dollars per pounds DWAE; interim period is January through September

Source	Measure	2021	2022	2023	Interim 2023	Interim 2024
Domestic	Production	***	***	***	***	***
Subject	Production	***	***	***	***	***
Nonsubject	Production	***	***	***	***	***
All sources into domestic synthesizing	Production	***	***	***	***	***
Domestic	Share of production	***	***	***	***	***
Subject	Share of production	***	***	***	***	***
Nonsubject	Share of production	***	***	***	***	***
All sources into domestic synthesizing	Share of production	100.0	100.0	100.0	100.0	100.0
Domestic	Acid input costs	***	***	***	***	***
Subject	Acid input costs	***	***	***	***	***
Nonsubject	Acid input costs	***	***	***	***	***
All sources into domestic synthesizing	Acid input costs	***	***	***	***	***
Domestic	Share of costs	***	***	***	***	***
Subject	Share of costs	***	***	***	***	***
Nonsubject	Share of costs	***	***	***	***	***
All sources into domestic synthesizing	Share of costs	100.0	100.0	100.0	100.0	100.0
*** commercial U.S. shipments of 2,4-D	Unit value	***	***	***	***	***
***'s subject 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 “—”. 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.19 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 dry weight acid equivalent; ratios in percent; interim period is January through September

Item	Measure	2021	2022	2023	Interim 2023	Interim 2024
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.20 2,4-D: *'s business model for U.S. production of formulated 2,4-D products, by sources of 2,4-D input into production and period**

Production in 1,000 pounds dry weight acid equivalent; acid input costs in 1,000 dollars; shares in percent; unit values in dollars per pounds DWAE; interim period is January through September

Source	Measure	2021	2022	2023	Interim 2023	Interim 2024
Domestic	Production	***	***	***	***	***
Subject	Production	***	***	***	***	***
Nonsubject	Production	***	***	***	***	***
All sources into domestic synthesizing	Production	***	***	***	***	***
Domestic	Share of production	***	***	***	***	***
Subject	Share of production	***	***	***	***	***
Nonsubject	Share of production	***	***	***	***	***
All sources into domestic synthesizing	Share of production	100.0	100.0	100.0	100.0	100.0
Domestic	Acid input costs	***	***	***	***	***
Subject	Acid input costs	***	***	***	***	***
Nonsubject	Acid input costs	***	***	***	***	***
All sources into domestic synthesizing	Acid input costs	***	***	***	***	***
Domestic	Share of costs	***	***	***	***	***
Subject	Share of costs	***	***	***	***	***
Nonsubject	Share of costs	***	***	***	***	***
All sources into domestic synthesizing	Share of costs	100.0	100.0	100.0	100.0	100.0
*** commercial U.S. shipments of 2,4-D	Unit value	***	***	***	***	***
***'s subject 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 “—”. 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.21 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 dry weight acid equivalent; ratios in percent; interim period is January through September

Item	Measure	2021	2022	2023	Interim 2023	Interim 2024
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.22 2,4-D: *'s business model for U.S. production of formulated 2,4-D products, by sources of 2,4-D input into production and period**

Production in 1,000 pounds dry weight acid equivalent; acid input costs in 1,000 dollars; shares in percent; unit values in dollars per pounds DWAE; interim period is January through September

Source	Measure	2021	2022	2023	Interim 2023	Interim 2024
Domestic	Production	***	***	***	***	***
Subject	Production	***	***	***	***	***
Nonsubject	Production	***	***	***	***	***
All sources into domestic synthesizing	Production	***	***	***	***	***
Domestic	Share of production	***	***	***	***	***
Subject	Share of production	***	***	***	***	***
Nonsubject	Share of production	***	***	***	***	***
All sources into domestic synthesizing	Share of production	100.0	100.0	100.0	100.0	100.0
Domestic	Acid input costs	***	***	***	***	***
Subject	Acid input costs	***	***	***	***	***
Nonsubject	Acid input costs	***	***	***	***	***
All sources into domestic synthesizing	Acid input costs	***	***	***	***	***
Domestic	Share of costs	***	***	***	***	***
Subject	Share of costs	***	***	***	***	***
Nonsubject	Share of costs	***	***	***	***	***
All sources into domestic synthesizing	Share of costs	100.0	100.0	100.0	100.0	100.0
*** commercial U.S. shipments of 2,4-D	Unit value	***	***	***	***	***
***'s subject 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 “—”. 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.23 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 dry weight acid equivalent; ratios in percent; interim period is January through September

Item	Measure	2021	2022	2023	Interim 2023	Interim 2024
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.24 2,4-D: *'s business model for U.S. production of formulated 2,4-D products, by sources of 2,4-D input into production and period**

Production in 1,000 pounds dry weight acid equivalent; acid input costs in 1,000 dollars; shares in percent; Unit values in dollars per pounds DWAE; interim period is January through September

Source	Measure	2021	2022	2023	Interim 2023	Interim 2024
Domestic	Production	***	***	***	***	***
Subject	Production	***	***	***	***	***
Nonsubject	Production	***	***	***	***	***
All sources into domestic synthesizing	Production	***	***	***	***	***
Domestic	Share of production	***	***	***	***	***
Subject	Share of production	***	***	***	***	***
Nonsubject	Share of production	***	***	***	***	***
All sources into domestic synthesizing	Share of production	100.0	100.0	100.0	100.0	100.0
Domestic	Acid input costs	***	***	***	***	***
Subject	Acid input costs	***	***	***	***	***
Nonsubject	Acid input costs	***	***	***	***	***
All sources into domestic synthesizing	Acid input costs	***	***	***	***	***
Domestic	Share of costs	***	***	***	***	***
Subject	Share of costs	***	***	***	***	***
Nonsubject	Share of costs	***	***	***	***	***
All sources into domestic synthesizing	Share of costs	100.0	100.0	100.0	100.0	100.0
*** commercial U.S. shipments of 2,4-D	Unit value	***	***	***	***	***
***'s subject 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 “—”. 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.25 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 dry weight acid equivalent; ratios in percent; Interim period is January through September

Item	Measure	2021	2022	2023	Interim 2023	Interim 2024
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.26 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.27 2,4-D: U.S. converters' employment related information, by item and period

Item	2021	2022	2023	Interim 2023	Interim 2024
Production and related workers (PRWs) (number)	***	***	***	***	***
Total hours worked (1,000 hours)	***	***	***	***	***
Hours worked per PRW (hours)	***	***	***	***	***
Wages paid (\$1,000)	***	***	***	***	***
Hourly wages (dollars per hour)	***	***	***	***	***
Productivity (pounds DWAE per hour)	***	***	***	***	***
Unit labor costs (dollars per pound DWAE)	***	***	***	***	***

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

Note: DWAE = dry weight acid equivalent. Interim period is January through September.

Table D.28 2,4-D: Apparent U.S. consumption and market shares for the total market, including U.S. converters, based on quantity data, by source and period

Quantity in 1,000 pounds dry weight acid equivalent; shares in percent; interim period is January through September

Source	Measure	2021	2022	2023	Interim 2023	Interim 2024
All U.S. producers	Quantity	***	***	***	***	***
China	Quantity	***	***	***	***	***
India	Quantity	***	***	***	***	***
Subject sources	Quantity	***	***	***	***	***
Nonsubject sources	Quantity	***	***	***	***	***
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	100.0	100.0

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.

Table D.29 2,4-D: Apparent U.S. consumption and market shares for the merchant market, defining the U.S. industry as the U.S. producer * and U.S. converters, by source and period**

Quantity in 1,000 pounds dry weight acid equivalent; shares in percent; interim period is January through September

Source	Measure	2021	2022	2023	Interim 2023	Interim 2024
All U.S. producers	Quantity	***	***	***	***	***
China	Quantity	***	***	***	***	***
India	Quantity	***	***	***	***	***
Subject sources	Quantity	***	***	***	***	***
Nonsubject sources	Quantity	***	***	***	***	***
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	100.0	100.0

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

Note: Quantity for U.S. producers' commercial U.S. shipments and swap transactions reflects integrated producer's commercial U.S. shipment and swap transaction quantities.

Table D.30 2,4-D: Apparent U.S. consumption and market shares for the total market, including U.S. converters, based on value data, by source and period

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

Source	Measure	2021	2022	2023	Interim 2023	Interim 2024
U.S. producer and converters: Fully domestic value	Value	***	***	***	***	***
U.S. producer and converters: Value added to imports	Value	***	***	***	***	***
U.S. producer and converters: Total value	Value	***	***	***	***	***
China	Value	***	***	***	***	***
India	Value	***	***	***	***	***
Subject sources	Value	***	***	***	***	***
Nonsubject sources	Value	***	***	***	***	***
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	100.0	100.0

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

Note: Value for U.S. producers' U.S. shipments reflect 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.31 2,4-D: Apparent U.S. consumption and market shares for the merchant market, defining the U.S. industry as the U.S. producer * and downstream U.S. converters, by source and period**

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

Source	Measure	2021	2022	2023	Interim 2023	Interim 2024
U.S. producer and converters: Fully domestic value	Value	***	***	***	***	***
U.S. producer and converters: Value added to imports	Value	***	***	***	***	***
U.S. producer and converters: Total value	Value	***	***	***	***	***
China	Value	***	***	***	***	***
India	Value	***	***	***	***	***
Subject sources	Value	***	***	***	***	***
Nonsubject sources	Value	***	***	***	***	***
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	100.0	100.0

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

Note: Value for U.S. producers' commercial U.S. shipments and swap transactions 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

DOWNSTREAM FORMULATED PRODUCT SHIPMENT DATA

Table E.1 2,4-D: U.S. producer Corteva’s total shipments of downstream 2,4-D formulated products, by brand type and period

Quantities, values, and unit values as noted in table; Shares and ratios in percent; Interim period is January through September

Measure or calculation	Type	2021	2022	2023	Interim 2023	Interim 2024
1,000 gallons	Patented	***	***	***	***	***
1,000 pounds DWAE	Patented	***	***	***	***	***
Total value in 1,000 dollars	Patented	***	***	***	***	***
Contained acid value in 1,000 dollars	Patented	***	***	***	***	***
Dollars per gallon, total formulation value	Patented	***	***	***	***	***
Dollars per gallon, contained acid value	Patented	***	***	***	***	***
Dollars per pound DWAE, total formulation value	Patented	***	***	***	***	***
Dollars per pound DWAE, contained acid value	Patented	***	***	***	***	***
Ratio of pounds DWAE per gallon	Patented	***	***	***	***	***
Share of contained acid value out of total value	Patented	***	***	***	***	***
1,000 gallons	Generic	***	***	***	***	***
1,000 pounds DWAE	Generic	***	***	***	***	***
Total value in 1,000 dollars	Generic	***	***	***	***	***
Contained acid value in 1,000 dollars	Generic	***	***	***	***	***
Dollars per gallon, total formulation value	Generic	***	***	***	***	***
Dollars per gallon, contained acid value	Generic	***	***	***	***	***
Dollars per pound DWAE, total formulation value	Generic	***	***	***	***	***
Dollars per pound DWAE, contained acid value	Generic	***	***	***	***	***
Ratio of pounds DWAE per gallon	Generic	***	***	***	***	***
Share of contained acid value out of total value	Generic	***	***	***	***	***

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

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

Figure E.1 2,4-D: U.S. producer Corteva's average unit values for its total value and contained acid value of its total shipments of downstream 2,4-D formulated products, by type and period

* * * * *

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

Note: DWAE = dry weight acid equivalent. Labels show the percent difference between the average unit values.

Table E.2 2,4-D: U.S. converters' total shipments of downstream 2,4-D formulated products, by brand type and period

Quantities, values, and unit values as noted in table; Shares and ratios in percent; Interim period is January through September

Measure or calculation	Type	2021	2022	2023	Interim 2023	Interim 2024
1,000 gallons	Patented	***	***	***	***	***
1,000 pounds DWAE	Patented	***	***	***	***	***
Total value in 1,000 dollars	Patented	***	***	***	***	***
Contained acid value in 1,000 dollars	Patented	***	***	***	***	***
Dollars per gallon, total formulation value	Patented	***	***	***	***	***
Dollars per gallon, contained acid value	Patented	***	***	***	***	***
Dollars per pound DWAE, total formulation value	Patented	***	***	***	***	***
Dollars per pound DWAE, contained acid value	Patented	***	***	***	***	***
Ratio of pounds DWAE per gallon	Patented	***	***	***	***	***
Share of contained acid value out of total value	Patented	***	***	***	***	***
1,000 gallons	Generic	***	***	***	***	***
1,000 pounds DWAE	Generic	***	***	***	***	***
Total value in 1,000 dollars	Generic	***	***	***	***	***
Contained acid value in 1,000 dollars	Generic	***	***	***	***	***
Dollars per gallon, total formulation value	Generic	***	***	***	***	***
Dollars per gallon, contained acid value	Generic	***	***	***	***	***
Dollars per pound DWAE, total formulation value	Generic	***	***	***	***	***
Dollars per pound DWAE, contained acid value	Generic	***	***	***	***	***
Ratio of pounds DWAE per gallon	Generic	***	***	***	***	***
Share of contained acid value out of total value	Generic	***	***	***	***	***

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

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

Figure E.2 2,4-D: U.S. converters' average unit values for their total value and contained acid value of their total shipments of downstream 2,4-D formulated products, by type and period

* * * * *

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

Note: DWAE = dry weight acid equivalent. Labels show the percent difference between the average unit values.

APPENDIX F

ALTERNATIVE FINANCIAL RESULTS OF CORTEVA

Table F.1 2,4-D: U.S. producer Corteva's alternate results of operations in the overall market using the AUVs of U.S. importers' U.S. shipments of imports from all sources to estimate the fair market value in interim 2024, by item and period

Quantity in 1,000 pounds dry weight acid equivalent ("DWAE"); value in 1,000 dollars; ratios in percent; interim is January through September

Item	Measure	2021	2022	2023	Interim 2023	Interim 2024
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	***	***	***	***	***
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. producer Corteva's alternate results of operations in the overall market using the AUVs of U.S. importers' U.S. shipments of imports from all sources to estimate the fair market value in interim 2024, by item and period

Shares in percent; unit values in dollars per pound DWAE; count in number of firms reporting; interim is January through September

Item	Measure	2021	2022	2023	Interim 2023	Interim 2024
COGS: Raw materials	Share	***	***	***	***	***
COGS: Direct labor	Share	***	***	***	***	***
COGS: Other factory	Share	***	***	***	***	***
COGS: Total	Share	100.0	100.0	100.0	100.0	100.0
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.

Table F.2 2,4-D: U.S. producer Corteva's and U.S. converters' changes in AUVs in the overall market between comparison periods

Changes in percent; interim is January through September

Item	2021-23	2021-22	2022-23	Interim 2023-24
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: U.S. producer Corteva's and U.S. converters' changes in AUVs in the overall market between comparison periods

Changes in dollars per pound DWAE; interim is January through September

Item	2021-23	2021-22	2022-23	Interim 2023-24
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: Changes shown as "0.0" or "0.00" represent absolute values greater than zero, but less than "0.05" percent or "0.005" dollars per pound DWAE. Period changes preceded by a "▲" represent an increase, while period changes preceded by a "▼" represent a decrease.

Figure F.1 2,4-D: U.S. producer Corteva's alternate results of operations in the overall market using the AUVs of U.S. importers' U.S. shipments of imports from all sources to estimate the fair market value in interim 2024, by item and period

* * * * *

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

APPENDIX G

EXPANDED U.S. INDUSTRY FINANCIAL DATA

Figure G.1 2,4-D: U.S. producer Corteva's and 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 G.1 2,4-D: U.S. producer Corteva’s and U.S. converters’ results of operations in the overall market, by item and period

Quantity in 1,000 pounds dry weight acid equivalent (“DWAE”); Value in 1,000 dollars; ratios in percent;
Interim period is January through September

Item	Measure	2021	2022	2023	Interim 2023	Interim 2024
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 interest expense or (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 G.1 (Continued) 2,4-D: U.S. producer Corteva's and U.S. converters' results of operations in the overall market, by item and period

Shares in percent; unit values in dollars per pound DWAE; count in number of firms reporting; interim is January through September

Item	Measure	2021	2022	2023	Interim 2023	Interim 2024
COGS: Raw materials	Share	***	***	***	***	***
COGS: Direct labor	Share	***	***	***	***	***
COGS: Other factory	Share	***	***	***	***	***
COGS: Total	Share	100.0	100.0	100.0	100.0	100.0
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.

Table G.2 2,4-D: U.S. producer Corteva’s and U.S. converters’ changes in AUVs in the overall market between comparison periods

Changes in percent; interim is January through September

Item	2021–23	2021–22	2022–23	Interim 2023–24
Commercial sales	▼ ***	▲ ***	▼ ***	▼ ***
Swap transactions	▲ ***	▲ ***	▼ ***	▼ ***
Internal consumption	▲ ***	▲ ***	▼ ***	▼ ***
Total net sales	▲ ***	▲ ***	▼ ***	▼ ***
COGS: Raw materials	▲ ***	▲ ***	▲ ***	▼ ***
COGS: Direct labor	▲ ***	▲ ***	▲ ***	▼ ***
COGS: Other factory	▲ ***	▲ ***	▼ ***	▼ ***
COGS: Total	▲ ***	▲ ***	▼ ***	▼ ***

Table continued.

Table G.2 (Continued) 2,4-D: U.S. producer Corteva’s and U.S. converters’ changes in AUVs in the overall market between comparison periods

Changes in dollars per pound DWAE; interim is January through September

Item	2021–23	2021–22	2022–23	Interim 2023–24
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 G.3 2,4-D: U.S. producer Corteva's and U.S. converters' results of operations for commercial sales (including Corteva's swap transactions), by item and period

Quantity in 1,000 pounds DWAE; value in 1,000 dollars; ratios in percent; interim is January through September

Item	Measure	2021	2022	2023	Interim 2023	Interim 2024
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 interest expense or (income)	Value	***	***	***	***	***
Net income or (loss)	Value	***	***	***	***	***
COGS: Raw materials	Ratio to CS	***	***	***	***	***
COGS: Direct labor	Ratio to CS	***	***	***	***	***
COGS: Other factory	Ratio to CS	***	***	***	***	***
COGS: Total	Ratio to CS	***	***	***	***	***
Gross profit	Ratio to CS	***	***	***	***	***
SG&A expense	Ratio to CS	***	***	***	***	***
Operating income or (loss)	Ratio to CS	***	***	***	***	***
Net income or (loss)	Ratio to CS	***	***	***	***	***

Table continued.

Table G.3 (Continued) 2,4-D: U.S. producer Corteva's and U.S. converters' results of operations for commercial sales (including Corteva's swap transactions), by item and period

Shares in percent; unit values in dollars per pound DWAE; count in number of firms reporting; interim is January through September

Item	Measure	2021	2022	2023	Interim 2023	Interim 2024
COGS: Raw materials	Share	***	***	***	***	***
COGS: Direct labor	Share	***	***	***	***	***
COGS: Other factory	Share	***	***	***	***	***
COGS: Total	Share	100.0	100.0	100.0	100.0	100.0
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 G.4 2,4-D: U.S. producer Corteva’s and U.S. converters’ changes in AUVs for commercial sales (including Corteva’s swap transactions) between comparison periods

Changes in percent; interim is January through September

Item	2021–23	2021–22	2022–23	Interim 2023–24
Commercial sales & swap transactions	▲ ***	▲ ***	▼ ***	▼ ***
COGS: Raw materials	▲ ***	▲ ***	▲ ***	▼ ***
COGS: Direct labor	▲ ***	▲ ***	▲ ***	▲ ***
COGS: Other factory	▼ ***	▲ ***	▼ ***	▲ ***
COGS: Total	▲ ***	▲ ***	▼ ***	▲ ***

Table continued.

Table G.4 (Continued) 2,4-D: U.S. producer Corteva’s and U.S. converters’ changes in AUVs for commercial sales (including Corteva’s swap transactions) between comparison periods

Changes in dollars per pound DWAE; interim is January through September

Item	2021–23	2021–22	2022–23	Interim 2023–24
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 G.5 2,4-D: U.S. producer Corteva's and U.S. converters' sales, costs/expenses, and profitability, by firm and period

Net sales quantity

Quantity in 1,000 pounds DWAE; interim is January through September

Firm	2021	2022	2023	Interim 2023	Interim 2024
Albaugh	***	***	***	***	***
Corteva	***	***	***	***	***
Drexel	***	***	***	***	***
Nufarm	***	***	***	***	***
PBI-Gordon	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table G.5 (Continued) 2,4-D: U.S. producer Corteva's and U.S. converters' sales, costs/expenses, and profitability, by firm and period

Net sales value

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

Firm	2021	2022	2023	Interim 2023	Interim 2024
Albaugh	***	***	***	***	***
Corteva	***	***	***	***	***
Drexel	***	***	***	***	***
Nufarm	***	***	***	***	***
PBI-Gordon	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table G.5 (Continued) 2,4-D: U.S. producer Corteva's and U.S. converters' sales, costs/expenses, and profitability, by firm and period

COGS

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

Firm	2021	2022	2023	Interim 2023	Interim 2024
Albaugh	***	***	***	***	***
Corteva	***	***	***	***	***
Drexel	***	***	***	***	***
Nufarm	***	***	***	***	***
PBI-Gordon	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table G.5 (Continued) 2,4-D: U.S. producer Corteva's and U.S. converters' sales, costs/expenses, and profitability, by firm and period

Gross profit or (loss)

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

Firm	2021	2022	2023	Interim 2023	Interim 2024
Albaugh	***	***	***	***	***
Corteva	***	***	***	***	***
Drexel	***	***	***	***	***
Nufarm	***	***	***	***	***
PBI-Gordon	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table G.5 (Continued) 2,4-D: U.S. producer Corteva's and U.S. converters' sales, costs/expenses, and profitability, by firm and period

SG&A expenses

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

Firm	2021	2022	2023	Interim 2023	Interim 2024
Albaugh	***	***	***	***	***
Corteva	***	***	***	***	***
Drexel	***	***	***	***	***
Nufarm	***	***	***	***	***
PBI-Gordon	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table G.5 (Continued) 2,4-D: U.S. producer Corteva's and U.S. converters' sales, costs/expenses, and profitability, by firm and period

Operating income or (loss)

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

Firm	2021	2022	2023	Interim 2023	Interim 2024
Albaugh	***	***	***	***	***
Corteva	***	***	***	***	***
Drexel	***	***	***	***	***
Nufarm	***	***	***	***	***
PBI-Gordon	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table G.5 (Continued) 2,4-D: U.S. producer Corteva's and U.S. converters' sales, costs/expenses, and profitability, by firm and period

Net income or (loss)

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

Firm	2021	2022	2023	Interim 2023	Interim 2024
Albaugh	***	***	***	***	***
Corteva	***	***	***	***	***
Drexel	***	***	***	***	***
Nufarm	***	***	***	***	***
PBI-Gordon	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table G.5 (Continued) 2,4-D: U.S. producer Corteva's and U.S. converters' sales, costs/expenses, and profitability, by firm and period

COGS to net sales ratio

Ratios in percent; interim is January through September

Firm	2021	2022	2023	Interim 2023	Interim 2024
Albaugh	***	***	***	***	***
Corteva	***	***	***	***	***
Drexel	***	***	***	***	***
Nufarm	***	***	***	***	***
PBI-Gordon	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table G.5 (Continued) 2,4-D: U.S. producer Corteva's and U.S. converters' sales, costs/expenses, and profitability, by firm and period

Gross profit or (loss) to net sales ratio

Ratios in percent; interim is January through September

Firm	2021	2022	2023	Interim 2023	Interim 2024
Albaugh	***	***	***	***	***
Corteva	***	***	***	***	***
Drexel	***	***	***	***	***
Nufarm	***	***	***	***	***
PBI-Gordon	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table G.5 (Continued) 2,4-D: U.S. producer Corteva's and U.S. converters' sales, costs/expenses, and profitability, by firm and period

SG&A expenses to net sales ratio

Ratios in percent; interim is January through September

Firm	2021	2022	2023	Interim 2023	Interim 2024
Albaugh	***	***	***	***	***
Corteva	***	***	***	***	***
Drexel	***	***	***	***	***
Nufarm	***	***	***	***	***
PBI-Gordon	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table G.5 (Continued) 2,4-D: U.S. producer Corteva's and U.S. converters' sales, costs/expenses, and profitability, by firm and period

Operating income or (loss) to net sales ratio

Ratios in percent; interim is January through September

Firm	2021	2022	2023	Interim 2023	Interim 2024
Albaugh	***	***	***	***	***
Corteva	***	***	***	***	***
Drexel	***	***	***	***	***
Nufarm	***	***	***	***	***
PBI-Gordon	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table G.5 (Continued) 2,4-D: U.S. producer Corteva's and U.S. converters' sales, costs/expenses, and profitability, by firm and period

Net income or (loss) to net sales ratio

Ratios in percent; interim is January through September

Firm	2021	2022	2023	Interim 2023	Interim 2024
Albaugh	***	***	***	***	***
Corteva	***	***	***	***	***
Drexel	***	***	***	***	***
Nufarm	***	***	***	***	***
PBI-Gordon	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table G.5 (Continued) 2,4-D: U.S. producer Corteva's and U.S. converters' sales, costs/expenses, and profitability, by firm and period

Unit net sales value

Unit values in dollars per pound DWAE; interim is January through September

Firm	2021	2022	2023	Interim 2023	Interim 2024
Albaugh	***	***	***	***	***
Corteva	***	***	***	***	***
Drexel	***	***	***	***	***
Nufarm	***	***	***	***	***
PBI-Gordon	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table G.5 (Continued) 2,4-D: U.S. producer Corteva's and U.S. converters' sales, costs/expenses, and profitability, by firm and period

Unit raw material costs

Unit values in dollars per pound DWAE; interim is January through September

Firm	2021	2022	2023	Interim 2023	Interim 2024
Albaugh	***	***	***	***	***
Corteva	***	***	***	***	***
Drexel	***	***	***	***	***
Nufarm	***	***	***	***	***
PBI-Gordon	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table G.5 (Continued) 2,4-D: U.S. producer Corteva's and U.S. converters' sales, costs/expenses, and profitability, by firm and period

Unit direct labor costs

Unit values in dollars per pound DWAE; interim is January through September

Firm	2021	2022	2023	Interim 2023	Interim 2024
Albaugh	***	***	***	***	***
Corteva	***	***	***	***	***
Drexel	***	***	***	***	***
Nufarm	***	***	***	***	***
PBI-Gordon	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table G.5 (Continued) 2,4-D: U.S. producer Corteva's and U.S. converters' sales, costs/expenses, and profitability, by firm and period

Unit other factory costs

Unit values in dollars per pound DWAE; interim is January through September

Firm	2021	2022	2023	Interim 2023	Interim 2024
Albaugh	***	***	***	***	***
Corteva	***	***	***	***	***
Drexel	***	***	***	***	***
Nufarm	***	***	***	***	***
PBI-Gordon	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table G.5 (Continued) 2,4-D: U.S. producer Corteva's and U.S. converters' sales, costs/expenses, and profitability, by firm and period

Unit COGS

Unit values in dollars per pound DWAE; interim is January through September

Firm	2021	2022	2023	Interim 2023	Interim 2024
Albaugh	***	***	***	***	***
Corteva	***	***	***	***	***
Drexel	***	***	***	***	***
Nufarm	***	***	***	***	***
PBI-Gordon	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table G.5 (Continued) 2,4-D: U.S. producer Corteva's and U.S. converters' sales, costs/expenses, and profitability, by firm and period

Unit gross profit or (loss)

Unit values in dollars per pound DWAE; interim is January through September

Firm	2021	2022	2023	Interim 2023	Interim 2024
Albaugh	***	***	***	***	***
Corteva	***	***	***	***	***
Drexel	***	***	***	***	***
Nufarm	***	***	***	***	***
PBI-Gordon	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table G.5 (Continued) 2,4-D: U.S. producer Corteva's and U.S. converters' sales, costs/expenses, and profitability, by firm and period

Unit SG&A expenses

Unit values in dollars per pound DWAE; interim is January through September

Firm	2021	2022	2023	Interim 2023	Interim 2024
Albaugh	***	***	***	***	***
Corteva	***	***	***	***	***
Drexel	***	***	***	***	***
Nufarm	***	***	***	***	***
PBI-Gordon	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table G.5 (Continued) 2,4-D: U.S. producer Corteva's and U.S. converters' sales, costs/expenses, and profitability, by firm and period

Unit operating income or (loss)

Unit values in dollars per pound DWAE; interim is January through September

Firm	2021	2022	2023	Interim 2023	Interim 2024
Albaugh	***	***	***	***	***
Corteva	***	***	***	***	***
Drexel	***	***	***	***	***
Nufarm	***	***	***	***	***
PBI-Gordon	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table G.5 (Continued) 2,4-D: U.S. producer Corteva's and U.S. converters' sales, costs/expenses, and profitability, by firm and period

Unit net income or (loss)

Unit values in dollars per pound DWAE; interim is January through September

Firm	2021	2022	2023	Interim 2023	Interim 2024
Albaugh	***	***	***	***	***
Corteva	***	***	***	***	***
Drexel	***	***	***	***	***
Nufarm	***	***	***	***	***
PBI-Gordon	***	***	***	***	***
All firms	***	***	***	***	***

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

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

Table G.6 2,4-D: U.S. producer Corteva's and U.S. converters' sales raw material costs in 2023, by item and firm type

Value in 1,000 dollars; share of value in percent

Item	Firm type	Value	Share of value
Corteva's raw material costs (see table 6.5 for more details)	Producer	***	***
2,4-D acid: domestically produced	Converters	***	***
2,4-D acid: purchased/ imported from subject	Converters	***	***
2,4-D acid: purchased/ imported from nonsubject	Converters	***	***
Total 2,4-D acid cost of U.S. converters	Converters	***	***
Other material inputs of U.S. converters	Converters	***	***
All raw materials inputs of U.S. converters	Converters	***	***
Total raw materials inputs	Producer and converters	***	100.0

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

Note: Zeroes, null values, and undefined calculations are suppressed and shown as “—”. Total raw material inputs share of value adds the share of “Corteva's raw material costs” and “All raw materials inputs of U.S. converters.”

Table G.7 2,4-D: U.S. producer Corteva's and U.S. converters' capital expenditures, by firm and period

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

Firm	2021	2022	2023	Interim 2023	Interim 2024
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 G.8 2,4-D: U.S. producer Corteva’s and 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 G.9 2,4-D: U.S. producer Corteva’s and U.S. converters’ R&D expenses, by firm and period

Value in 1,000 dollars

Firm	2021	2022	2023	Interim 2023	Interim 2024
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 G.10 2,4-D: U.S. producer Corteva’s and U.S. converters’ narrative descriptions of their R&D expenses, by firm

Firm	Narrative on R&D expenses
Albaugh	***
Corteva	***
Drexel	***

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

Table G.11 2,4-D: U.S. producer Corteva's and 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 G.12 2,4-D: U.S. producer Corteva's and 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 G.13 2,4-D: U.S. producer Corteva's and U.S. converters' narrative descriptions of their total net assets, by firm

Firm	Narrative on assets
Albaugh	***
Corteva	***
Nufarm	***
PBI-Gordon	***

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

Table G.14 2,4-D: Count of firms (U.S. producer Corteva and U.S. converters) 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 G.15 2,4-D: U.S. producer Corteva's and 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	***
Cancellation, postponement, or rejection of expansion projects	***
Other effects on growth and development	***
Return on specific investments negatively impacted	***
Other investment effects	***
Other growth and development effects	***
Anticipated effects of imports	***
Anticipated effects of imports	***

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

