Ferrovanadium from China

and South Africa

Investigation Nos. 731-TA-986–987 (Fourth Review)

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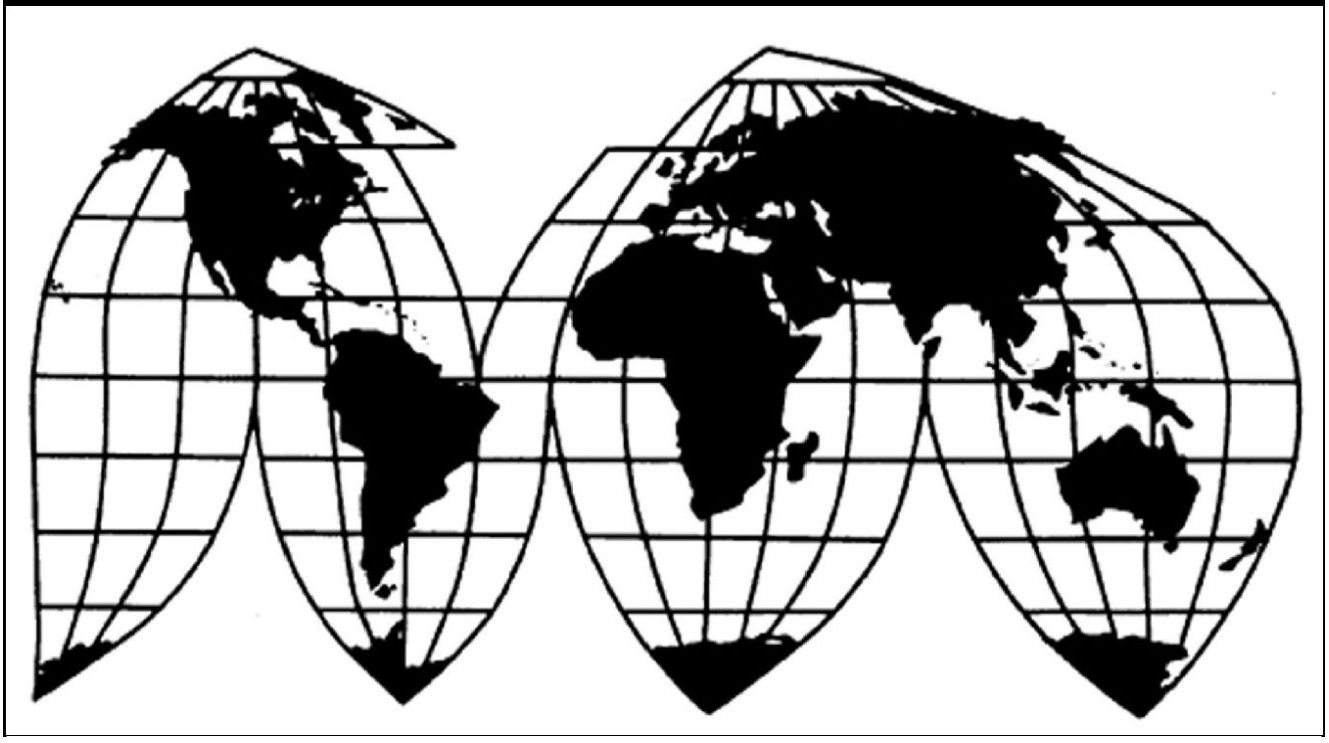

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CONTENTS

Page

Determinations **1**
Views of the Commission **3**
Information obtained in these reviews **1.1**
Background 1.1
The original investigations 1.2
The first five-year reviews 1.2
The second five-year reviews 1.3
The third five-year reviews 1.3
Previous and related investigations 1.4
Commerce's five-year reviews 1.4
The product 1.5
Commerce's scope 1.5
U.S. tariff treatment 1.5
Description and uses 1.8
Manufacturing process 1.9
The industry in the United States 1.12
U.S. producers 1.12
Recent developments 1.13
U.S. producers' trade and financial data 1.15
Definitions of the domestic like product and domestic industry 1.16
U.S. importers 1.17
U.S. imports 1.18
Cumulation considerations 1.20
Apparent U.S. consumption and market shares 1.21
The industry in China 1.23
Producers in China 1.23
Recent developments 1.24
Exports 1.25
The industry in South Africa 1.26
Producers in South Africa 1.26
Recent developments 1.27
Exports 1.28
Third-country trade actions 1.29
The global market 1.30

Appendixes

A. *Federal Register* notices A.1
B. Responses to the notice of institution B.1
C. Summary data compiled in prior proceedings C.1
D. Purchaser questionnaire responses D.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Note.—Information that would reveal confidential operations of individual firms may not be published.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. 731-TA-986–987 (Fourth Review)

Ferrovanadium from China and South Africa

DETERMINATIONS

On the basis of the record[1] developed in the subject five-year reviews, the United States International Trade Commission ("Commission") determines, pursuant to the Tariff Act of 1930 ("the Act"), that revocation of the antidumping duty orders on ferrovanadium from China and South Africa would be likely to lead to continuation or recurrence of material injury to an industry in the United States within a reasonably foreseeable time.

BACKGROUND

The Commission instituted these reviews on July 1, 2025 (90 FR 28774) and determined on November 24, 2025, that it would conduct expedited reviews (90 FR 60741, December 29, 2025).

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

Views of the Commission

Based on the record in these five-year reviews, we determine under section 751(c) of the Tariff Act of 1930, as amended ("the Tariff Act"), that revocation of the antidumping duty orders on ferrovanadium from China and South Africa would be likely to lead to continuation or recurrence of material injury to an industry in the United States within a reasonably foreseeable time.

I. Background

Original Investigations. On November 26, 2001, the Ferroalloys Association Vanadium Committee and five of its members filed antidumping duty petitions concerning imports of ferrovanadium from China and South Africa.[1] In January 2003, the Commission determined that a domestic industry was materially injured by reason of dumped imports of ferrovanadium.[2] The U.S. Department of Commerce ("Commerce") issued antidumping duty orders on ferrovanadium from both subject countries on January 28, 2003.[3]

First Reviews. In December 2007, the Commission instituted the first five-year reviews of the antidumping duty orders.[4] After conducting full reviews, the Commission determined that revocation of the orders would be likely to lead to continuation or recurrence of material injury to an industry in the United States within a reasonably foreseeable time.[5] Commerce issued a continuation of the antidumping duty orders effective December 19, 2008.[6]

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[1] *Ferrovanadium from China and South Africa,* Inv. Nos. 731-TA-986-987 (Final), USITC Pub. 3570 at 1 (Jan. 2003) ("*Original Determinations*").

[2] *Original Determinations*, USITC Pub. 3570 at 3.

[3] *Notice of Amended Final Antidumping Duty Determination of Sales at Less Than Fair Value and Antidumping Duty Order: Ferrovanadium From the People's Republic of China*, 68 Fed. Reg. 4168 (Jan. 28, 2003); *Notice of Antidumping Duty Order: Ferrovanadium from the Republic of South Africa*, 68 Fed. Reg. 4169 (Jan. 28, 2003).

[4] *Ferrovanadium From China and South* Africa, 72 Fed. Reg. 67962 (Dec. 3, 2007).

[5] *Ferrovanadium from China and South Africa,* Inv. Nos. 731-TA-986-987 (Review), USITC Pub. 4046 at 1 (Nov. 2008) ("*First Reviews*, USITC Pub. 4046").

[6] *Ferrovanadium from China and South Africa: Continuation of Antidumping Duty Orders*, 73 Fed. Reg. 77609 (Dec. 19, 2008).

Second Reviews. In November 2013, the Commission instituted the second five-year reviews.[7] After conducting full reviews, the Commission determined that revocation of the orders would be likely to lead to continuation or recurrence of material injury to an industry in the United States within a reasonably foreseeable time. [8] Commerce issued a continuation of the orders effective February 18, 2015. [9]

Third Reviews. In January 2020, the Commission instituted the third five-year reviews of the antidumping duty orders.[10] After conducting expedited reviews, the Commission determined that revocation of the orders would be likely to lead to continuation or recurrence of material injury to an industry in the United States within a reasonably foreseeable time.[11] Commerce issued a continuation of the antidumping duty orders effective August 20, 2020.[12]

[7] *Ferrovanadium From China and South Africa; Institution of Five-Year Reviews*, 78 Fed. Reg. 65706 (Nov. 1, 2013).

[8] *Ferrovanadium from China and South Africa*, Inv. Nos. 731-TA-986-987 (Second Review), USITC Pub. 4517 at 3 (Jan. 2015) ("*Second Reviews*").

[9] *Ferrovanadium from China and South Africa: Continuation of Antidumping Duty Orders*, 80 Fed. Reg. 8607 (Feb. 18, 2015).

[10] *Ferrovanadium From China and South Africa; Institution of Five-Year* Reviews, 85 Fed. Reg. 122 (Jan. 2, 2020).

[11] *Ferrovanadium from China and South Africa,* Inv. Nos. 731-TA-986-987 (Third Review), USITC Pub. 5099 at 1 (Aug. 2020) ("*Third Reviews*").

[12] *Ferrovanadium from China and South Africa: Continuation of Antidumping Duty Orders*, 85 Fed. Reg. 51408 (Aug. 20, 2020).

The Current Reviews. On July 1, 2025, the Commission instituted these fourth five-year reviews of the antidumping duty orders.[13] The Commission received a single response to its notice of institution, filed by the Vanadium Producers and Reclaimers Association ("VPRA" or "domestic interested parties"), a trade association whose members produce and/or wholesale domestically produced ferrovanadium, and two VPRA members -- AMG Vanadium LLC ("AMG V"), a domestic producer of ferrovanadium, and U.S. Vanadium, a whole seller of domestically produced ferrovanadium. No respondent interested party responded to the notice of institution or otherwise participated in these reviews. On November 24, 2025, the Commission determined that the domestic interested party group response to its notice of institution was adequate, and that the respondent interested party group response was inadequate.[14] Finding no other circumstances that would warrant conducting full reviews, the Commission determined that it would conduct expedited reviews pursuant to section 751(c)(3) of the Tariff Act.[15] VPRA filed comments pursuant to 19 C.F.R. § 207.61(d) arguing that the Commission should reach affirmative determinations in these expedited reviews.[16]

U.S. industry data in these reviews are based on information supplied by AMG V in its response to the notice of institution. AMG V is estimated to have accounted for *** percent of domestic production of ferrovanadium in 2024.[17] U.S. import data and related information are based on Commerce's official import statistics.[18] Foreign industry data are based on information from the original investigations and prior reviews, information submitted by the domestic interested party in these expedited reviews, and publicly available information compiled by the Commission.[19] Additionally, four firms, ***, identified by AMG V as top U.S. purchasers of ferrovanadium, responded to the Commission's adequacy phase questionnaire.[20]

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[13] Confidential Report, Memorandum INV-XX-130 (Sept. 24, 2025) ("CR"), Public Report, *Ferrovanadium from China and South Africa*, Inv. Nos. 731-TA-986-987 (Fourth Review), USITC Pub. 5710 (Feb. 2025) ("PR") at 1.1, Table 1.1; *Ferrovanadium From China and South Africa; Institution of Five-Year Reviews*, 90 Fed. Reg. 28774, July 1, 2025.

[14] Explanation of Commission Determination on Adequacy, EDIS Doc. No. 865473 (Dec. 3, 2025).

[15] *Ferrovanadium From China and South Africa; Scheduling of Expedited Five-Year Reviews*, 90 Fed. Reg. 60741 (Dec. 29, 2025).

[16] VPRA Final Comments, EDIS Doc. No. 871529 (Feb. 4, 2026) at 1.

[17] VPRA Response to Notice of Institution, EDIS Doc. 858227 (July 31, 2025) ("VPRA Resp.") at 63.

[18] CR/PR at Table 1.6. Import data are compiled from official Commerce statistics for HTS statistical reporting number 7202.92.0000. *Id.*

[19] CR/PR at 1.23-1.28.

[20] CR/PR at D-3-D-4.

II. Domestic Like Product and Industry

A. Domestic Like Product

In making its determination under section 751(c) of the Tariff Act, the Commission defines the "domestic like product" and the "industry."[21] 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 under this subtitle."[22] The Commission's practice in five-year reviews is to examine the domestic like product definition from the original investigation and consider whether the record indicates any reason to revisit the prior findings.[23]

Commerce has defined the imported merchandise within the scope of the orders under review as follows:

> . . . all ferrovanadium regardless of grade, chemistry, form, shape, or size. Ferrovanadium is an alloy of iron and vanadium that is used chiefly as an additive in the manufacture of steel. The merchandise is commercially and scientifically identified as vanadium. It specifically excludes vanadium additives other than ferrovanadium, such as nitride vanadium, vanadium-aluminum master alloys, vanadium chemicals, vanadium oxides, vanadium waste and scrap, and vanadium-bearing raw materials such as slag, boiler residues and fly ash. Merchandise under the following Harmonized Tariff Schedule of the United States (HTSUS) item numbers 2850.00.2000, 8112.40.3000, and 8112.40.6000 are specifically excluded.[24]

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[21] 19 U.S.C. § 1677(4)(A).

[22] 19 U.S.C. § 1677(10); *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); *Timken Co. v. United States*, 913 F. Supp. 580, 584 (Ct. Int'l Trade 1996); *Torrington Co. v. United States*, 747 F. Supp. 744, 748-49 (Ct. Int'l Trade 1990), *aff'd*, 938 F.2d 1278 (Fed. Cir. 1991); *see also* S. Rep. No. 249, 96th Cong., 1st Sess. 90-91 (1979).

[23] *See*, *e.g.*, *Internal Combustion Industrial Forklift Trucks from Japan*, Inv. No. 731-TA-377 (Second Review), USITC Pub. 3831 at 8-9 (Dec. 2005); *Crawfish Tail Meat from China*, Inv. No. 731-TA-752 (Review), USITC Pub. 3614 at 4 (July 2003); *Steel Concrete Reinforcing Bar from Turkey*, Inv. No. 731-TA-745 (Review), USITC Pub. 3577 at 4 (Feb. 2003).

[24] *Ferrovanadium From the Republic of South Africa and the People's Republic of China: Final Results of the Expedited Fourth Sunset Reviews of the Antidumping Duty Orders*, 91 Fed. Reg. 682 (Jan. 8, 2026) and accompanying Issues and Decision Memorandum at 2-3, Case Nos. A-570-873, A-791-815, EDIS Doc. 868408 (Jan. 8, 2026). The scope of these expedited fourth reviews is unchanged from the scope of the original investigations and the prior reviews.

Ferrovanadium is used in high-strength low-alloy steels (also known as micro-alloy steels) for high-performance long-distance oil and gas pipelines, concrete reinforcing bars, structural shapes and plate for construction, and automobile components.[25] When vanadium combines with carbon and nitrogen in steel, it creates stable carbides and nitrides that improve the finished product's wear resistance, strength, and toughness.[26] Ferrovanadium is commonly produced in grades having a vanadium content of 40-60 percent or 75-85 percent.[27] Regardless of grade, commercial practice is to quote the price of ferrovanadium on the basis of the contained vanadium content.[28] Ferrovanadium is typically sold in the United States in containers of 25 pounds of a specified content of contained vanadium ("pounds" hereafter refers to "pounds contained vanadium").[29]

In the original investigations and prior reviews, the Commission defined a single domestic like product consisting of all ferrovanadium regardless of grade, corresponding to Commerce's scope.[30] The definition of the domestic like product was not disputed in the prior reviews.[31]

In these expedited fourth reviews, VPRA agrees with the Commission's definition of the domestic like product from the prior proceedings.[32] The record does not contain any new information suggesting that the pertinent product characteristics and uses of ferrovanadium have changed since the prior proceedings.[33] Accordingly, we again define a single domestic like product consisting of all ferrovanadium regardless of grade, coextensive with the scope of the orders under review.

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[25] CR/PR at 1.8.

[26] CR/PR at 1.8.

[27] CR/PR at 1.8.

[28] CR/PR at 1.8.

[29] CR/PR at 1.8.

[30] *Original Determinations*, USITC Pub. 3570 at 9; *First Reviews*, USITC Pub. 4046 at 7; *Second Reviews*, USITC Pub. 4517 at 5-6; *Third Reviews*, USITC Pub. 5099 at 7. In the original investigations, respondents urged the Commission to define two domestic like products consisting of 45-percent and 80-percent grade ferrovanadium, but the Commission found that the traditional six domestic like product factors did not indicate a clear dividing line that would warrant a finding of separate like products. *Original Determinations*, USITC Pub. 3570 at 9.

[31] *See First Reviews*, USITC Pub. 4046 at 7; *Second Reviews*, USITC Pub. 4517 at 6; *Third Reviews*, USITC Pub. 5099 at 7.

[32] VPRA Resp. at 66.

[33] *See* generally CR/PR at 1.8-1.11.

B. Domestic Industry

Section 771(4)(A) of the Tariff Act defines the relevant industry 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."[34] 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.

In the prior proceedings, the Commission found that tollees that produced vanadium pentoxide, a key intermediate product for producing ferrovanadium, were not domestic producers of the domestic like product because they did not produce ferrovanadium themselves; accordingly, the Commission defined the domestic industry to include all domestic producers of ferrovanadium and did not include tollees in the domestic industry.[35] Nonetheless, in the prior proceedings, the Commission considered the information provided by tollees in its impact analysis to measure U.S. shipments, U.S. consumption, inventories, and pricing of the domestic like product.[36] In the original investigations and prior reviews, the Commission found that no domestic producers of ferrovanadium were related parties.[37]

In the current reviews, VPRA agrees with the definition of the domestic industry from the prior proceedings, but asks that the Commission continue to consider the information related to the domestic industry's tolling operations.[38] As in our prior determinations, we do not consider the tollees to be domestic producers because they are not actually producing the domestic like product, but an intermediate product. Thus, we do not include tollees in the domestic industry definition.[39] However, as in the original investigations and previous reviews, we have considered the information pertaining to the domestic industry's tolling operations, to the extent relevant to these reviews.[40]

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[34] 19 U.S.C. § 1677(4)(A). The definitions in 19 U.S.C. § 1677 are applicable to the entire subtitle containing the antidumping and countervailing duty laws, including 19 U.S.C. §§ 1675 and 1675a. *See* 19 U.S.C. § 1677.

[35] *Original Determinations*, USITC Pub. 3570 at 10-11; *First Reviews,* USITC Pub. 4046 at 8-10; *Second Reviews*, USITC Pub. 4517 at 7; *Third Reviews*, USITC Pub. 5099 at 8.

[36] *Original Determinations*, USITC Pub. 3570 at 11, 20-23; *First Reviews,* USITC Pub. 4046 at 10, 31-34; *Second Reviews*, USITC Pub. 4517 at 7; *Third Reviews*, USITC Pub. 5099 at 8.

[37] *Original Determinations*, USITC Pub. 3570 at 9-11; *First Reviews,* USITC Pub. 4046 at 10 n.65; *Second Reviews*, USITC Pub. 4517 at 7 n.32; *Third Reviews*, USITC Pub. 5099 at 8.

[38] VPRA Resp. at 67.

[39] VPRA indicates that domestic producer Bear toll-produced ferrovanadium during the current review period. *See* VPRA Resp. at 7.

[40] CR/PR at 1.12 n.44.

The record in these reviews does not indicate that any of the domestic producers potentially qualify as related parties or that there are other domestic industry issues.[41] Accordingly, consistent with our definition of the domestic like product, we again define the domestic industry as all domestic producers of ferrovanadium.

III. Cumulation

A. Legal Standard

> With respect to five-year reviews, section 752(a) of the Tariff Act provides as follows: the Commission may cumulatively assess the volume and effect of imports of the subject merchandise from all countries with respect to which reviews under section 1675(b) or (c) of this title were initiated on the same day, if such imports would be likely to compete with each other and with domestic like products in the United States market. The Commission shall not cumulatively assess the volume and effects of imports of the subject merchandise in a case in which it determines that such imports are likely to have no discernible adverse impact on the domestic industry.[42]

Cumulation therefore is discretionary in five-year reviews, unlike original investigations, which are governed by section 771(7)(G)(i) of the Tariff Act.[43] The Commission may exercise its discretion to cumulate, however, only if the reviews are initiated on the same day, the Commission determines that the subject imports are likely to compete with each other and the domestic like product in the U.S. market, and imports from each such subject country are not likely to have no discernible adverse impact on the domestic industry in the event of revocation. Our focus in five-year reviews is not only on present conditions of competition, but also on likely conditions of competition in the reasonably foreseeable future.

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[41] VPRA Resp. at 60-61.

[42] 19 U.S.C. § 1675a(a)(7).

[43] 19 U.S.C. § 1677(7)(G)(i); *see also*, *e.g.*, *Nucor Corp. v. United States*, 601 F.3d 1291, 1293 (Fed. Cir. 2010) (Commission may reasonably consider likely differing conditions of competition in deciding whether to cumulate subject imports in five-year reviews); *Allegheny Ludlum Corp. v. United States*, 475 F. Supp. 2d 1370, 1378 (Ct. Int'l Trade 2006) (recognizing the wide latitude the Commission has in selecting the types of factors it considers relevant in deciding whether to exercise discretion to cumulate subject imports in five-year reviews); *Nucor Corp. v. United States*, 569 F. Supp. 2d 1328, 1337-38 (Ct. Int'l Trade 2008).

B. The Prior Proceedings and Party Arguments

The Original Investigations. The Commission found that the statutory requirements for cumulation were satisfied. It also found there was a reasonable overlap of competition both between subject imports from China and South Africa and among imports from each subject country and the domestic like product. Accordingly, it determined to cumulate subject imports from both subject countries for purposes of its material injury analysis.[44]

The Prior Reviews. In the first, second, and third reviews, the Commission found that imports from each subject country were not likely to have no discernible adverse impact upon revocation.[45] The Commission also found that there would likely be a reasonable overlap of competition among subject imports from each subject country and the domestic like product, as well as between subject imports from each country.[46] Further, it found that subject imports from China and South Africa were likely to compete in the U.S. market under similar conditions of competition upon revocation.[47] Thus, in each review the Commission exercised its discretion to cumulate the subject imports from both subject countries.[48]

The Current Reviews. VPRA argues that the Commission should again cumulate imports from China and South Africa.[49] It contends that the factors that the Commission analyzed in the prior reviews continue and support a likely reasonable overlap of competition between and among subject imports from China and South Africa and the domestic like product.[50]

C. Analysis

The statutory threshold for cumulation is satisfied in these five-year reviews because all reviews were initiated on the same day, July 1, 2024.[51]

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[44] *Original Determinations*, USITC Pub. 3570 at 11-13.

[45] *First Reviews,* USITC Pub. 4046 at 11-13; *Second Reviews*, USITC Pub. 4517 at 9-12; *Third Reviews*, USITC Pub. 5099 at 11-15.

[46] *First Reviews*, USITC Pub. 4046 at 13-15; *Second Reviews*, USITC Pub. 4517 at 12-14*; Third Reviews*, USITC Pub. 5099 at 18.

[47] *First Reviews,* USITC Pub. 4046 at 16; *Second Reviews*, USITC Pub. 4517 at 15; *Third Reviews*, USITC Pub. 5099 at 19.

[48] *First Reviews,* USITC Pub. 4046 at 16; *Second Reviews*, USITC Pub. 4517 at 15; *Third Reviews*, USITC Pub. 5099 at 19.

[49] VPRA Resp. at 5-6.

[50] VPRA Resp.at 5-6.

[51] *Ferrovanadium From China and South Africa; Institution of Five-Year Reviews*, 90 Fed. Reg. 28774 (July 1, 2025); *Initiation of Five-Year (Sunset) Reviews*, 90 Fed. Reg. 28722 (July 1, 2025).

In addition, we consider the following issues in deciding whether to exercise our discretion to cumulate the subject imports: (1) whether imports from any of the subject countries are precluded from cumulation because they are likely to have no discernible adverse impact on the domestic industry; (2) whether there is a likelihood of a reasonable overlap of competition among subject imports and the domestic like product; and (3) whether subject imports are likely to compete in the U.S. market under different conditions of competition.

1. Likelihood of No Discernible Adverse Impact

The statute precludes cumulation if the Commission finds that subject imports from a country are likely to have no discernible adverse impact on the domestic industry.[52] Neither the statute nor the Uruguay Round Agreements Act ("URAA") Statement of Administrative Action ("SAA") provides specific guidance on what factors the Commission is to consider in determining that imports "are likely to have no discernible adverse impact" on the domestic industry.[53] With respect to this provision, the Commission generally considers the likely volume of subject imports and the likely impact of those imports on the domestic industry within a reasonably foreseeable time if the orders are revoked. Our analysis for each of the subject countries takes into account, among other things, the nature of the product and the behavior of subject imports in the original investigations.

Based on the record in these five-year reviews, we do not find that imports from China or South Africa, considered individually, would not likely have no discernible adverse impact on the domestic industry in the event of revocation of the relevant antidumping duty orders.

China. In the original investigations, the volume of subject imports from China and their market share increased overall during the course of the period of investigation ("POI");[54] they then declined markedly in 2002, the first year following the imposition of the antidumping duty orders, and remained at substantially lower levels afterwards.[55]

[52] 19 U.S.C. § 1675a(a)(7).

[53] SAA, H.R. Rep. No. 103-316, vol. I at 887 (1994).

[54] *Original Determinations*, USITC Pub. 3570 at Table C-1.

[55] *First Reviews,* USITC Pub. 4046 at 12 n.72; *Second Reviews*, USITC Pub. 4517 at Table I-8; *Third Reviews*, USITC Pub. 5099 at Table I-5; CR/PR at Table 1.7.

In the original investigations, the Commission received usable data from two producers in China, Chengde Xinghua Vanadium Chemical Co., Ltd. ("Chengde") and Panzhihua Iron & Steel Group ("Panzhihua"), which together accounted for approximately *** percent of total production in China in 2001, and nearly all ferrovanadium exports from China to the United States that year.[56] No producers from China participated in the first, second, or third reviews.[57]

Subject import volume from China was less than 1,000 pounds in 2024, equivalent to *** percent of apparent U.S. consumption that year.[58] No subject imports from China entered the U.S. market from 2020 to 2023.[59]

The record of these five-year reviews contains limited information concerning the ferrovanadium industry in China because no producer in China responded to the notice of institution.[60] VPRA asserted that Chengde and Panzhihua were the two largest ferrovanadium producers in China, and there were 40 other major producers and more than 100 smaller ferrovanadium producers in China during the period of review ("POR").[61] Global Trade Atlas ("GTA") data show that in 2024, China was the second largest global exporter of ferrovanadium under HS subheading 7202.92, which is coextensive with the scope.[62]

In the original investigations, subject imports from China undersold the domestic like product in 15 of 45 possible comparisons at margins ranging between 0.2 to 12.2 percent.[63] In the first reviews, subject imports from China undersold the domestic like product in each of the four quarterly comparisons with average underselling margins ranging between 37.2 and 46.0 percent.[64] In the second reviews, subject imports from China oversold the domestic like product in two quarterly comparisons with a overselling margins of *** to *** percent.[65] No product-specific pricing data concerning ferrovanadium from China were obtained in the third expedited reviews or these reviews.

[56] CR/PR at 1.23.
[57] CR/PR at 1.23.
[58] CR/PR at Table 1.7.
[59] CR/PR at Table 1.6.
[60] CR/PR at 1.23.
[61] VPRA Resp. at 15-16.
[62] CR/PR at Table 1.11.
[63] Original Investigations Confidential Report, INV-Z-197, EDIS Doc. 860524 (Dec. 11, 2002) at Tables V-7; *First Reviews*, USITC Pub 4046 at 19 n.76.
[64] *First Reviews*, USITC Pub 4046 at 19.
[65] Second Reviews Confidential Report, INV-MM-127, EDIS Doc. 860533 (Aug. 27, 2025) at Table V-8.

In light of these considerations, including the significant and increasing volume of subject imports from China in the original investigations, the continued presence of subject imports from China in the U.S. market during the POR, the large size and export orientation of the subject industry in China, and past underselling by subject imports from China, we find that subject imports from China would not likely have no discernible adverse impact on the domestic industry if the antidumping duty order covering these imports were revoked.

South Africa. In the original investigations, the volume of subject imports from South Africa and their market share increased overall during the course of the POI;[66] they then declined markedly in 2002, the first year following the imposition of the antidumping duty orders, and remained at substantially lower levels afterwards.[67]

In the original investigations, the Commission received usable data from three producers in South Africa, two of which accounted for *** percent of ferrovanadium production in South Africa in 2001.[68] In the first and second reviews, the Commission received usable data from two firms.[69] In the third reviews, no foreign producers participated.[70]

In these reviews, subject import volume from South Africa was 5,000 pounds in 2024, equivalent to *** percent of apparent U.S. consumption that year.[71] Subject imports from South Africa were 4,000 pounds in 2021 and 5,000 pounds in 2022; no subject imports entered the U.S. market in 2020 and 2023.[72]

[66] *Original Determinations*, USITC Pub. 3570 at Table C-1.

[67] *First Reviews,* USITC Pub. 4046 at 12 n.72; *Second Reviews*, USITC Pub. 4517 at Table I-8; *Third Reviews*, USITC Pub. 5099 at Table I-5; CR/PR at Table 1.7.

[68] CR/PR at 1.26.

[69] CR/PR at 1.26.

[70] CR/PR at 1.26.

[71] CR/PR at Table 1.7.

[72] CR/PR at Table 1.6.

The record of these five-year reviews contains limited information concerning the ferrovanadium industry in South Africa because no producer in South Africa responded to the notice of institution.[73] VPRA identified two foreign producers of ferrovanadium from South Africa. While the production status of one of these producers, Vanchem, is not clear from this record, the other, Rhovan, is large; VPRA indicated that Rhovan produced 18.3 million pounds of vanadium in 2024 and 3.1 million pounds in 2023.[74] GTA data show that in 2024, South Africa was the largest global exporter of ferrovanadium under HS subheading 7202.92.[75]

In the original investigations, subject imports from South Africa oversold the domestic like product in each of the 29 quarters for which there were data, at average overselling margins of 11.1 percent based on selling price and 13.3 percent based on purchase price.[76] In the first reviews, subject imports from South Africa undersold the domestic like product in each of the three quarterly comparisons with an average underselling margin of 8.5 percent.[77] In the second reviews, subject imports from South Africa oversold the domestic like product in the one quarterly comparison with a overselling margin of *** percent.[78] No product-specific pricing data concerning ferrovanadium from South Africa were obtained in the third or these fourth expedited reviews.

In light of these considerations, including the significant and increasing volume of subject imports from South Africa in the original investigations, the continued presence of subject imports from South Africa in the U.S. market during the POR, the large size and export orientation of the subject industry in South Africa, and past underselling by subject imports from South Africa, we find that subject imports from South Africa would not likely have no discernible adverse impact on the domestic industry if the antidumping duty order covering these imports were revoked.

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[73] CR/PR at 1.23.

[74] VPRA Resp. at 25-27. VPRA indicates that Vanchem was sold from Bushveld to Southern Point Resources ("SPR") in November 2024. While SPR indicated it intended to invest in the operations, as of June 2025 Bushveld sought "an order placing SPR Vanchem in final winding-up on the basis that it is unable to pay its debts." VPRA Resp. at 27-28.

[75] CR/PR at Table 1.12.

[76] Original Investigations Confidential Report, INV-Z-197, EDIS Doc. 860524 (Dec. 11, 2002) at Tables V-7; *First Reviews*, USITC Pub 4046 at 19 n.76.

[77] *First Reviews*, USITC Pub 4046 at 19.

[78] Second Reviews Confidential Report, INV-MM-127, EDIS Doc. 860533 (Aug. 27, 2025) at Table V-8.

2. Likelihood of a Reasonable Overlap of Competition

The Commission generally has considered four factors intended to provide a framework for determining whether subject imports compete with each other and with the domestic like product.[79] Only a "reasonable overlap" of competition is required.[80] In five-year reviews, the relevant inquiry is whether there likely would be competition even if none currently exists because the subject imports are absent from the U.S. market.[81]

Fungibility. In the original investigations, the Commission found there was at least a moderate level of fungibility between domestic ferrovanadium and the subject imports and among imports from China and South Africa. U.S. producers, tollees, and importers reported that subject imports and the domestic like product were always or frequently interchangeable.[82]

[79] The four factors are: (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 geographical markets of 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 subject imports are simultaneously present in the market with one another and the domestic like product. *See, e.g., Wieland Werke, AG v. United States*, 718 F. Supp. 50 (Ct. Int'l Trade 1989).

[80] *See Mukand Ltd. v. United States*, 937 F. Supp. 910, 916 (Ct. Int'l Trade 1996); *Wieland Werke,* 718 F. Supp. at 52 ("Completely overlapping markets are not required."); *United States Steel Group v. United States,* 873 F. Supp. 673, 685 (Ct. Int'l Trade 1994), *aff'd*, 96 F.3d 1352 (Fed. Cir. 1996). We note, however, that there have been investigations where the Commission has found an insufficient overlap in competition and has declined to cumulate subject imports. *See, e.g*., *Live Cattle from Canada and Mexico*, Inv. Nos. 701-TA-386 and 731-TA-812-13 (Preliminary), USITC Pub. 3155 at 15 (Feb. 1999), *aff'd sub nom, Ranchers-Cattlemen Action Legal Foundation v. United States*, 74 F. Supp. 2d 1353 (Ct. Int'l Trade 1999); *Static Random Access Memory Semiconductors from the Republic of Korea and Taiwan*, Inv. Nos. 731-TA-761-62 (Final), USITC Pub. 3098 at 13-15 (Apr. 1998).

[81] *See generally Chefline Corp. v. United States*, 219 F. Supp. 2d 1313, 1314 (Ct. Int'l Trade 2002).

[82] *Original Determinations*, USITC Pub. 3570 at 12.

In the first reviews, domestic producers and tollees reported that subject imports were always interchangeable with one another and with the domestic like product.[83] A majority of purchasers and importers also said that ferrovanadium was at least frequently interchangeable in all comparisons between the domestic like product and imports from both subject countries and in comparisons between subject imports from China and South Africa.[84] In the second and third reviews, the Commission found that the record continued to indicate that ferrovanadium from each subject country was fungible with the domestic like product and each other.[85]

In these five-year reviews, there is no new information in the record to indicate that the degree of fungibility between and among subject imports from China and South Africa and the domestic like product has changed. VPRA contends that ferrovanadium is a fungible commodity.[86]

Channels of Distribution. In the original investigations and first and second reviews, both the domestic producers and importers sold the majority of their ferrovanadium to end users.[87] In the third reviews, the Commission found that there was no new information to indicate that these channels of distribution had changed.[88]

There is similarly nothing in the record of these current reviews to indicate that the distribution pattern observed in the original investigations and prior reviews would change if the orders were revoked.

Geographic Overlap. In the original investigations, the Commission found that there was a significant geographical overlap among the subject merchandise from each subject country and the domestic like product.[89] In the prior reviews, the Commission found no information in the record that indicated that the geographic overlap of sales of the domestic like product and the subject imports would be significantly different from that observed in the original investigations.[90]

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[83] *First Reviews*, USITC Pub. 4046 at 14.

[84] *First Reviews*, USITC Pub. 4046 at 14.

[85] *Second Reviews*, USITC Pub. 4517 at 11-12; *Third Reviews*, USITC Pub. 5099 at 17.

[86] VPRA Resp. at 8.

[87] *Original Determinations*, USITC Pub. 3570 at 13; *First Reviews*, USITC Pub. 4046 at 15; *Second Reviews*, USITC Pub. 4517 at 14.

[88] *Third Reviews*, USITC Pub. 5099 at 17.

[89] *Original Determinations*, USITC Pub. 3570 at 13.

[90] *First Reviews*, USITC Pub. 4046 at 15; *Second Reviews*, USITC Pub. 4517 at 14; *Third Reviews*, USITC Pub. 5099 at 17.

In these reviews, subject imports from China entered the United States from 2020 through 2024 through the southern border.[91] Subject imports from South Africa entered the United States from 2020 through 2024 period through eastern and southern borders.[92] There is nothing in the record of these current reviews that indicates that, were the orders revoked, there would be a change in the geographic overlap of sales of the domestic like product and the subject imports from that observed in the original investigations.

Simultaneous Presence in Market. In the original investigations, the Commission found that subject imports from China and South Africa and the domestic like product were present in the U.S. market throughout the POI.[93] In the first, second, and third reviews, the Commission found that the domestic like product was sold in the U.S. market throughout the review periods, while only limited subject imports from both China and South Africa entered the U.S. market.[94] In these prior reviews, the Commission found that if the orders were revoked, the domestic like product and subject imports from China and South Africa would likely be present in the market simultaneously.[95]

In these five-year reviews, subject imports from China and South Africa entered the U.S. market intermittently, but were both present in the U.S. market in 2024;[96] domestically produced ferrovanadium was sold in the United States in each year of the POR.[97] There is nothing in the record that indicates that, if the orders were revoked, subject imports from China and South Africa would not return to being simultaneously present in the market.

[91] CR/PR at 1.20.

[92] CR/PR at 1.20

[93] *Original Determinations*, USITC Pub. 3570 at 13.

[94] *First Reviews*, USITC Pub. 4046 at 15; *Second Reviews*, USITC Pub. 4517 at 14; *Third Reviews*, USITC Pub. 5099 at 18.

[95] *First Reviews*, USITC Pub. 4046 at 15; *Second Reviews*, USITC Pub. 4517 at 14; *Third Reviews*, USITC Pub. 5099 at 18.

[96] CR/PR at 1.20.

[97] CR/PR at Table 1.5.

Conclusion. In sum, the record in these expedited reviews indicates that there has not been any meaningful change in the considerations that led the Commission in the original investigations and subsequent reviews to conclude that there was a reasonable overlap or likely reasonable overlap, respectively, of competition among subject imports and between subject imports and the domestic like product. In particular, there is no new information in the record that suggests that the degree of fungibility between and among subject imports from each subject country and the domestic like product has changed since the prior proceedings. There is also no indication in the record that overlaps in channels of distribution, geographic presence in the United States, and simultaneous presence in the market that were present during the original investigations would not recur upon revocation.

For these reasons, and absent any contrary argument, we find that there will be a likely reasonable overlap of competition between the domestic like product and subject imports, and among imports from the different subject countries, should the orders be revoked.

3. Likely Conditions of Competition

In determining whether to exercise our discretion to cumulate the subject imports, we consider whether subject imports from each subject country would likely compete under similar or different conditions in the U.S. market after revocation of the orders. The record in these five-year reviews contains limited current information about the ferrovanadium industries in each subject country and the U.S. market for ferrovanadium. The limited information on the record indicates that each subject country continues to have a sizable industry and exports substantial quantities of ferrovanadium. Based on the information available, and in the absence of any argument to the contrary, we do not find any likely significant differences in conditions of competition that would warrant not cumulating subject imports from each subject country.

4. Conclusion

In sum, we determine that subject imports from each subject country, considered individually, are not likely to have no discernible adverse impact on the domestic industry if the corresponding orders were revoked. We also find that there would likely be a reasonable overlap of competition between and among subject imports from each subject country and the domestic like product if the orders were revoked. Finally, we do not find any likely significant differences in conditions of competition that would warrant not cumulating subject imports from each subject country. We therefore exercise our discretion to cumulate subject imports from all subject countries for purposes of our analysis in these five-year reviews.

IV. Revocation of the Antidumping Duty Orders Would Likely Lead to Continuation or Recurrence of Material Injury Within a Reasonably Foreseeable Time

A. Legal Standards

In a five-year review conducted under section 751(c) of the Tariff Act, Commerce will revoke an antidumping or countervailing duty order unless: (1) it makes a determination that dumping or subsidization is likely to continue or recur and (2) the Commission makes a determination that revocation of the antidumping or countervailing duty order "would be likely to lead to continuation or recurrence of material injury within a reasonably foreseeable time."[98] The SAA states that "under the likelihood standard, the Commission will engage in a counterfactual analysis; it must decide the likely impact in the reasonably foreseeable future of an important change in the status quo – the revocation or termination of a proceeding and the elimination of its restraining effects on volumes and prices of imports."[99] Thus, the likelihood standard is prospective in nature.[100] The U.S. Court of International Trade has found that "likely," as used in the five-year review provisions of the Act, means "probable," and the Commission applies that standard in five-year reviews.[101]

[98] 19 U.S.C. § 1675a(a).

[99] SAA at 883-84. The SAA states that "{t}he likelihood of injury standard applies regardless of the nature of the Commission's original determination (material injury, threat of material injury, or material retardation of an industry). Likewise, the standard applies to suspended investigations that were never completed." *Id*. at 883.

[100] While the SAA states that "a separate determination regarding current material injury is not necessary," it indicates that "the Commission may consider relevant factors such as current and likely continued depressed shipment levels and current and likely continued {sic} prices for the domestic like product in the U.S. market in making its determination of the likelihood of continuation or recurrence of material injury if the order is revoked." SAA at 884.

[101] *See NMB Singapore Ltd. v. United States*, 288 F. Supp. 2d 1306, 1352 (Ct. Int'l Trade 2003) ("'likely' means probable within the context of 19 U.S.C. § 1675(c) and 19 U.S.C. § 1675a(a)"), *aff'd mem.*, 140 Fed. Appx. 268 (Fed. Cir. 2005); *Nippon Steel Corp. v. United States*, 26 CIT 1416, 1419 (2002) (same); *Usinor Industeel, S.A. v. United States*, 26 CIT 1402, 1404 nn.3, 6 (2002) ("more likely than not" standard is "consistent with the court's opinion;" "the court has not interpreted 'likely' to imply any particular degree of 'certainty'"); *Indorama Chemicals (Thailand) Ltd. v. United States*, 26 CIT 1059, 1070 (2002) ("standard is based on a likelihood of continuation or recurrence of injury, not a certainty"); *Usinor v. United States*, 26 CIT 767, 794 (2002) ("'likely' is tantamount to 'probable,' not merely 'possible'").

The statute states that "the Commission shall consider that the effects of revocation or termination may not be imminent, but may manifest themselves only over a longer period of time."[102] According to the SAA, a "'reasonably foreseeable time' will vary from case-to-case, but normally will exceed the 'imminent' timeframe applicable in a threat of injury analysis in original investigations."[103]

Although the standard in a five-year review is not the same as the standard applied in an original investigation, it contains some of the same fundamental elements. The statute provides that the Commission is to "consider the likely volume, price effect, and impact of imports of the subject merchandise on the industry if the orders are revoked or the suspended investigation is terminated."[104] It directs the Commission to take into account its prior injury determination, whether any improvement in the state of the industry is related to the order or the suspension agreement under review, whether the industry is vulnerable to material injury if an order is revoked or a suspension agreement is terminated, and any findings by Commerce regarding duty absorption pursuant to 19 U.S.C. § 1675(a)(4).[105] The statute further provides that the presence or absence of any factor that the Commission is required to consider shall not necessarily give decisive guidance with respect to the Commission's determination.[106]

[102] 19 U.S.C. § 1675a(a)(5).

[103] SAA at 887. Among the factors that the Commission should consider in this regard are "the fungibility or differentiation within the product in question, the level of substitutability between the imported and domestic products, the channels of distribution used, the methods of contracting (such as spot sales or long-term contracts), and lead times for delivery of goods, as well as other factors that may only manifest themselves in the longer term, such as planned investment and the shifting of production facilities." *Id*.

[104] 19 U.S.C. § 1675a(a)(1).

[105] 19 U.S.C. § 1675a(a)(1). Commerce has made no duty absorption findings concerning ferrovanadium from China or South Africa. *See generally* Issues and Decision Memorandum, Case Nos. A-570-873, A-791-815, EDIS Doc. No. 868408 (Jan. 8, 2026).

[106] 19 U.S.C. § 1675a(a)(5). Although the Commission must consider all factors, no one factor is necessarily dispositive. SAA at 886.

In evaluating the likely volume of imports of subject merchandise if an order under review is revoked and/or a suspended investigation is terminated, the Commission is directed to consider whether the likely volume of imports would be significant either in absolute terms or relative to production or consumption in the United States.[107] In doing so, the Commission must consider "all relevant economic factors," including four enumerated factors: (1) any likely increase in production capacity or existing unused production capacity in the exporting country; (2) existing inventories of the subject merchandise, or likely increases in inventories; (3) the existence of barriers to the importation of the subject merchandise into countries other than the United States; and (4) 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.[108]

In evaluating the likely price effects of subject imports if an order under review is revoked and/or a suspended investigation is terminated, the Commission is directed to consider whether there is likely to be significant underselling by the subject imports as compared to the domestic like product and whether the subject imports are likely to enter the United States at prices that otherwise would have a significant depressing or suppressing effect on the price of the domestic like product.[109]

[107] 19 U.S.C. § 1675a(a)(2).

[108] 19 U.S.C. § 1675a(a)(2)(A-D).

[109] *See* 19 U.S.C. § 1675a(a)(3). The SAA states that "{c}onsistent with its practice in investigations, in considering the likely price effects of imports in the event of revocation and termination, the Commission may rely on circumstantial, as well as direct, evidence of the adverse effects of unfairly traded imports on domestic prices." SAA at 886.

In evaluating the likely impact of imports of subject merchandise if an order under review is revoked and/or a suspended investigation is terminated, the Commission is directed to consider all relevant economic factors that are likely to have a bearing on the state of the industry in the United States, including but not limited to the following: (1) likely declines in output, sales, market share, profits, productivity, return on investments, and utilization of capacity; (2) likely negative effects on cash flow, inventories, employment, wages, growth, ability to raise capital, and investment; and (3) likely negative effects on the existing development and production efforts of the industry, including efforts to develop a derivative or more advanced version of the domestic like product.[110] All relevant economic factors are to be considered within the context of the business cycle and the conditions of competition that are distinctive to the industry. As instructed by the statute, we have considered the extent to which any improvement in the state of the domestic industry is related to the orders under review and whether the industry is vulnerable to material injury upon revocation.[111]

No respondent interested party participated in these expedited reviews. The record, therefore, contains limited new information with respect to the ferrovanadium industries in China and South Africa. There also is limited information on the ferrovanadium market in the United States during the POR. Accordingly, for our determinations, we rely as appropriate on the facts available from the prior proceedings and the limited new information on the record in these fourth five-year reviews.

B. Conditions of Competition and the Business Cycle

In evaluating the likely impact of the subject imports on the domestic industry if an order is revoked, the statute directs the Commission to consider all relevant economic factors "within the context of the business cycle and conditions of competition that are distinctive to the affected industry."[112] We have considered our analyses regarding the conditions of competition in the original investigations and subsequent reviews, and incorporate those analyses by reference.[113] The following conditions of competition inform our determinations.

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[110] 19 U.S.C. § 1675a(a)(4).

[111] The SAA states that in assessing whether the domestic industry is vulnerable to injury if the order is revoked, 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 may also demonstrate that an industry is facing difficulties from a variety of sources and is vulnerable to dumped or subsidized imports." SAA at 885.

[112] 19 U.S.C. § 1675a(a)(4).

[113] *Original Determinations*, USITC Pub. 3570 at 14-17; *First Reviews*, USITC Pub. 4046 at 19-23; *Second Reviews*, USITC Pub. 4517 at 18-21; *Third Reviews*, USITC Pub. 5099 at 22-27.

1. Demand Conditions

The information available indicates that ferrovanadium continues to be used primarily in the production of steel and demand for ferrovanadium continues to follow demand for steel products.[114] Domestic interested parties argue that several domestic steel producers have expanded production, which will increase U.S. demand for ferrovanadium.[115]

Apparent U.S. consumption of ferrovanadium has increased from *** pounds in 2019 to *** pounds in 2024, or by *** percent.[116]

2. Supply Conditions

Domestically produced ferrovanadium was the second largest source of ferrovanadium in the U.S. market, accounting for *** percent of apparent U.S. consumption in 2024.[117] AMG V opened a new spent catalyst recycling plan to produce ferrovanadium.[118]

Subject imports were the smallest source of ferrovanadium in the U.S. market during the POR, accounting for *** percent of apparent U.S. consumption in 2024.[119]

Nonsubject imports were the largest source of ferrovanadium in the U.S. market during the POR, accounting for *** percent of apparent U.S. consumption in 2024.[120] As of 2016, ferrovanadium from South Korea is subject to an antidumping duty order.[121]

[114] VPRA Resp. at 7.
[115] VPRA Resp. at 38.
[116] CR/PR at Table 1.7.
[117] CR/PR at Table 1.7.
[118] CR/PR at Table 1.4.
[119] CR/PR at Table 1.7.
[120] CR/PR at Table 1.7.
[121] CR/PR at Table 1.2.

3. Substitutability and Other Conditions

In the prior proceedings, the Commission found that ferrovanadium of all grades is highly substitutable and price is an important factor in purchasing decisions, as most purchasers bought ferrovanadium at the lowest price.[122] The record of these reviews contains no new information indicating that the degree of substitutability between the domestic like product and cumulated subject imports or the importance of price has changed since the prior proceedings.[123] Domestic interested parties contend that because of the "commodity-like nature" of ferrovanadium, domestic and imported ferrovanadium are highly substitutable and price remains the most important factor in purchasing decisions.[124] Pricing data on ferrovanadium continue to be widely available through published sources such as *Ryan's Notes* and *Metals Week*, which are used in the U.S. market as benchmarks for pricing formulas in sales contracts as well as for spot sales, and spot prices affect contract benchmarks quickly as contract prices are adjusted monthly based upon spot prices.[125] We find that there is a high degree of substitutability between domestically produced ferrovanadium and subject imports, and that price is an important factor in purchasing decisions for ferrovanadium.

Effective September 24, 2018, ferrovanadium originating in China was subject to an additional 10 percent *ad valorem* duty under Section 301, and effective May 10, 2019, the duty increased to 25 percent *ad valorem*.[126] Effective February 4, 2025, ferrovanadium originating in China was subject to an additional 10 percent ad valorem duty under IEEPA, which increased on March 4, 2025 to 20 percent *ad valorem*.[127] Effective April 5, 2025, ferrovanadium originating in China was subject to an additional 10 percent ad valorem duty as part of the tariffs initiated in April 2025 under IEEPA which was increased to 84 percent *ad valorem* effective April 9, 2025, and increased again to 125 percent *ad valorem* effective April 10, 2025, and was reduced to 10 percent effective May 14, 2025.[128] As of September 24, 2025, the total additional tariff on ferrovanadium from China was 55 percent *ad* valorem (25 percent under Section 301 and 30 percent under IEEPA).[129]

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[122] *Original Determinations*, USITC Pub. 3570 at 15; *First Reviews*, USITC Pub. 4046 at 23, 29; *Second Reviews*, USITC Pub. 4517 at 20; *Third Reviews*, USITC Pub. 5099 at 27.

[123] *See generally* CR/PR; VPRA Resp.

[124] VPRA Resp. at 10.

[125] VPRA Resp. at 10.

[126] CR/PR at 1.6.

[127] CR/PR at 1.6-1.7.

[128] CR/PR at 1.6-1.7.

[129] CR/PR at Table 1.3.

Ferrovanadium originating in South Africa was subject to additional 10 percent *ad valorem* duty as part of tariffs initiated in April 2025 under IEEPA and effective April 5, 2025. Effective April 9, 2025, South Africa was instead assigned an individualized country duty of 30 percent *ad valorem*. However, effective April 10, 2025, the individualized country duties were suspended and the additional duty rate as part of tariffs initiated in April 2025 under IEEPA for ferrovanadium originating in South Africa was returned to 10 percent. Effective August 7, 2025, South Africa was assigned an individualized country duty of 30 percent.[130] As of September 24, 2025, the total additional tariff under IEEPA on ferrovanadium from South Africa was 30 percent *ad valorem*.[131]

C. Likely Volume of Subject Imports

We have considered our analyses regarding the volume of subject imports in the original investigations, and likely volume of subject imports in subsequent reviews, and incorporate those analyses by reference.[132] The record indicates that the discipline of the orders has limited, and continues to limit, cumulated subject imports. The volume of cumulated subject imports fluctuated over the POR, increasing from no imports in 2020 to 4,000 pounds in 2021 and 5,000 pounds in 2022, and there were no imports in 2023 and 5,000 pounds in 2024, equivalent to *** percent of apparent U.S. consumption that year.[133]

The record in these five-year reviews contains limited information on the subject foreign industries. The information available, however, indicates that subject foreign producers have the ability and incentive to increase their exports of ferrovanadium to the U.S. market if the orders were revoked.[134]

[130] CR/PR at 1.7.

[131] CR/PR at Table 1.3.

[132] *Original Determinations*, USITC Pub. 3570 at 17-18; *First Reviews*, USITC Pub. 4046 at 23-28; *Second Reviews*, USITC Pub. 4517 at 22-25; *Third Reviews*, USITC Pub. 5099 at 29-31.

[133] CR/PR at Tables 1.6, 1.7.

[134] *See generally* CR/PR at 1.23-1.30.

The record indicates that the subject industries are large producers and exporters of subject merchandise. As discussed in detail in section III.C.1, according to information submitted by the domestic interested parties, there are ten possible producers of ferrovanadium in China and two possible producers in South Africa.[135] Additionally, the available data also indicate that the ferrovanadium industries in the cumulated subject countries remain export oriented. GTA data for ferrovanadium under HS subheading 7202.92, which is coextensive with the scope, indicate that South Africa and China are the first and second largest global exporters of ferrovanadium: all together, subject countries exported over 33.5 million pounds of ferrovanadium in 2024, equivalent to *** percent of apparent U.S. consumption that year.[136] Moreover, despite the discipline of the orders, GTA data indicate that the United States was tied as the sixth largest destination for exports of such merchandise from South Africa.[137] VPRA has provided information indicating that production in both subject countries exceeds home market consumption, which would incentivize subject producers to ship additional exports of ferrovanadium to the United States upon revocation.[138]

Available information also indicates that the U.S. market remains attractive to subject producers. Subject imports remained in the U.S. market despite the orders.[139] Moreover, after the orders were put in place, vanadium pentoxide primarily from China was exported to South Korea, converted into ferrovanadium, and exported in significant quantities to the United States, demonstrating the attractiveness of the U.S. market.[140] An antidumping duty order on ferrovanadium from South Korea was put in place in 2016.[141]

[135] CR/PR at 1.23, 1.26.

[136] According to GTA data, South Africa exported 19.0 million pounds of such merchandise and China exported 14.5 million pounds. CR/PR at Tables 1.7, 1.9, 1.11, 1.12.

[137] CR/PR at Table 1.14.

[138] VPRA Resp. at 16, 32.

[139] CR/PR at Table 1.7.

[140] CR/PR at Table 1.11. Ferrovanadium from China and South Africa has not been subject to other trade actions outside the United States. *Id*. at 1.29.

[141] CR/PR at Table 1.2.

Thus, on a cumulated basis, subject foreign producers have the means and the incentive to export subject merchandise to the U.S. market in significant volumes within a reasonably foreseeable time if the orders were revoked. In light of these considerations, including the significant and increasing volume of cumulated subject imports during the original investigations, the continued presence of cumulated subject imports in the U.S. market during the POR, the subject industries' substantial capacity, the large volume of exports, and the attractiveness of the U.S. market to subject producers, we find that the volume of cumulated subject imports would likely be significant, both in absolute terms and relative to consumption in the United States, if the orders were revoked.

D. Likely Price Effects

We have considered our analyses regarding the price effects of subject imports in the original investigations, and likely price effects of subject imports in subsequent reviews, and incorporate those analyses by reference.[142] Although the Commission did not find significant underselling in the original investigations, it observed that prices for both the domestic like product and the subject merchandise declined over the POI.[143] In light of the highly substitutable nature of the merchandise and the increasing volumes of cumulated subject imports, and the confirmed lost sales and revenue, the Commission found that subject imports depressed domestic prices to a significant degree during the original investigations.[144]

In each subsequent review, the Commission found that subject imports and the domestic like product were highly substitutable and that price played an important role in purchasing decisions.[145] The Commission found that subject imports mostly oversold the domestic like product in the original investigations and in the limited comparisons in the second reviews, but found predominant underselling in the first reviews.[146]

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[142] *Original Determinations*, USITC Pub. 3570 at 18-20; *First Reviews*, USITC Pub. 4046 at 28-31; *Second Reviews*, USITC Pub. 4517 at 26-27; *Third Reviews*, USITC Pub. 5099 at 33.

[143] *Original Determinations*, USITC Pub. 3570 at 19.

[144] *Original Determinations*, USITC Pub. 3570 at 19-20.

[145] *First Reviews*, USITC Pub. 4046 at 29; *Second Reviews*, USITC Pub. 4517 at 26; *Third Reviews*, USITC Pub. 5099 at 33.

[146] In the original investigations, cumulated subject imports oversold the domestic like product in *** of 75 quarterly comparisons. Original Investigations Confidential Report, INV-Z-197, EDIS Doc. 860524 (Dec. 11, 2002) at Tables V-7; *First Reviews*, USITC Pub 4046 at 19 n.76. In the first reviews, cumulated subject imports undersold the domestic like product in seven of eight quarterly comparisons. *First Reviews*, USITC Pub 4046 at 19, Tables V-1 – V-2. In the second reviews, cumulated subject imports oversold the domestic like product in all three available comparisons. Second Reviews Confidential Report, INV-MM-127, EDIS Doc. 860533 (Aug. 27, 2025) at Table V-8. No product-specific pricing data concerning ferrovanadium from South Africa were obtained in the third expedited reviews.

As discussed in section IV.B.3 above, in these reviews, we continue to find that subject imports and the domestic like product are highly substitutable and that price remains an important factor in purchasing decisions.

The record in these expedited five-year reviews does not contain recent product-specific pricing information. Based on the high degree of substitutability between subject imports and the domestic like product and the importance of price in purchasing decisions, absent the discipline of the orders, we find that even relatively modest volumes of cumulated subject imports would suppress or depress domestic prices to a significant degree, as they did during the original investigations. Consequently, we find that if the orders were to be revoked, subject imports would likely have significant price effects.

E. Likely Impact

We have considered our analyses regarding the impact of subject imports in the original investigations, and the likely impact of subject imports in subsequent reviews, and incorporate those analyses by reference.[147] The record in these five-year reviews contains limited information concerning the domestic industry's performance since the period examined in the last reviews.

[147] *Original Determinations*, USITC Pub. 3570 at 20-23; *First Reviews*, USITC Pub. 4046 at 32-34; *Second Reviews*, USITC Pub. 4472 at 28-32; *Third Reviews*, USITC Pub. 5099 at 36-37.

The information available indicates that the domestic industry's performance in 2024 was mixed compared to prior proceedings.[148] While the domestic industry's capacity, at *** pounds in 2024, was lower than in any prior period examined, its production, at *** pounds in 2024, was higher than in 2001 and 2019, but lower than in 2007 and 2013, and its capacity utilization, at *** percent, was higher than in any prior period examined.[149] In 2024, the domestic industry's U.S. shipments by quantity, at *** pounds, were higher than in any prior period examined with the exception of 2007, but its U.S. shipments by value, at $***, were the second lowest after 2001.[150] The industry's share of apparent U.S. consumption in 2024, at *** percent, fell in the middle of the other periods examined – higher than 2019 and 2013, but lower than 2001 and 2007.[151] The domestic industry's average unit value ("AUV") in 2024 was the second lowest of any period examined, at $*** per pound.[152] In 2024, the domestic industry's net sales were the second lowest of any proceeding, at $***; however, its ratio of cost of goods sold ("COGS") to net sales was the lowest of any proceeding, at *** percent.[153] The domestic industry's gross profit, operating income, and operating income margin were all the highest of any period examined, at $***, $***, and *** percent, respectively.[154] The limited information on the record of this expedited review is insufficient for us to make a finding on whether the domestic industry is vulnerable to the continuation or recurrence of material injury in the event of revocation of the orders.

Based on the information available on the record, we have found that, upon revocation of the orders, cumulated subject import volume would likely be significant and cumulated subject imports would likely have significant price effects. Based on the information on the record, we further find that the likely significant volume and price effects of the cumulated subject imports would likely have a significant adverse impact on the domestic industry's production, capacity utilization, employment, shipments, revenues, and market share. The likely declines in these factors would, in turn, likely have a direct adverse impact on the domestic industry's profitability.

[148] CR/PR at Table 1.5.
[149] CR/PR at Table 1.5.
[150] CR/PR at Table 1.5.
[151] CR/PR at Table 1.7.
[152] CR/PR at Table 1.5.
[153] CR/PR at Table 1.5.
[154] CR/PR at Table 1.5.

We have also considered the role of factors other than subject imports, including the presence of nonsubject imports. Although nonsubject imports were the largest source of ferrovanadium in the United States, we see no evidence that their presence in the U.S. market would preclude subject imports from taking market share from the domestic industry, the second largest supplier of ferrovanadium to the U.S. market, or forcing the domestic industry to lower its prices to compete if the orders were revoked. Consequently, as we have in prior proceedings,[155] we find that any future effects of nonsubject imports would be distinct from the likely effects attributable to subject imports, and that nonsubject imports would not prevent subject imports from having a significant impact on the domestic industry.

In sum, we conclude that if the orders were revoked, subject imports of ferrovanadium from China and South Africa would likely have a significant impact on the domestic industry within a reasonably foreseeable time.

V. Conclusion

For the above reasons, we determine that revocation of the antidumping duty orders on ferrovanadium from China and South Africa would be likely to lead to continuation or recurrence of material injury to an industry in the United States within a reasonably foreseeable time.

[155] *First Reviews*, USITC Pub. 4046 at 34; *Second Reviews*, USITC Pub. 4472 at 31; *Third Reviews*, USITC Pub. 5099 at 36-37.

Information obtained in these reviews

Background

On July 1, 2025, the U.S. International Trade Commission ("Commission") gave notice, pursuant to section 751(c) of the Tariff Act of 1930, as amended ("the Act"),[1] that it had instituted reviews to determine whether revocation of the antidumping duty orders on ferrovanadium from China and South Africa would be likely to lead to continuation or recurrence of material injury.[2] All interested parties were requested to respond to this notice by submitting certain information requested by the Commission.[3] [4] Table 1.1 presents information relating to the background and schedule of this proceeding:

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

Effective date	Action
July 1, 2025	Notice of initiation by Commerce (90 FR 28722 July 1, 2025)
July 1, 2025	Notice of institution by Commission (90 FR 28774, July 1, 2025)
November 24, 2025	Date of Commission's vote on adequacy
January 8, 2026	Date of Commerce's results of its expedited reviews (91 FR 682, January 8, 2026)
February 26, 2026	Commission's determinations and views

[1] 19 U.S.C. 1675(c).

[2] 90 FR 28774, July 1, 2025. In accordance with section 751(c) of the Act, the U.S. Department of Commerce ("Commerce") published a notice of initiation of five-year reviews of the subject antidumping duty orders. 90 FR 28722, July 1, 2025. Pertinent Federal Register notices are referenced in app. A, and may be found at the Commission's website (www.usitc.gov).

[3] As part of their response to the notice of institution, interested parties were requested to provide company-specific information. Information regarding responses to the notice of institution are presented in app. B. Summary data compiled in the original investigations and subsequent full reviews are presented in app. C.

[4] Interested parties were also requested to provide a list of three to five leading purchasers in the U.S. market for the domestic like product and the subject merchandise. Presented in app. D are the responses received from purchaser surveys transmitted to the purchasers identified in this proceeding.

The original investigations

The original investigations resulted from petitions filed on November 26, 2001, with Commerce and the Commission by the Ferroalloys Association Vanadium Committee and its following members: Bear Metallurgical Co. ("Bear"), Butler, Pennsylvania; Shieldalloy Metallurgical Corp. ("Shieldalloy"), Cambridge, Ohio; Gulf Chemical & Metallurgical Corp. ("Gulf"), Freeport, Texas; U.S. Vanadium Corp. ("USV"), Danbury, Connecticut; and CS Metals of Louisiana ("CS Metals"), Convent, Louisiana.[5] On November 29, 2002, Commerce determined that imports of ferrovanadium from China and South Africa were being sold at less than fair value ("LTFV").[6] The Commission determined on January 13, 2003, that the domestic industry was materially injured by reason of LTFV imports of ferrovanadium from China and South Africa.[7] On January 28, 2003, Commerce issued its antidumping duty orders with the final weighted-average dumping margins ranging from 12.97 to 66.71 percent on subject imports of ferrovanadium from China and a final weighted-average dumping margin of 116.00 percent on subject imports of ferrovanadium from South Africa.[8]

The first five-year reviews

On March 7, 2008, the Commission determined that it would conduct full reviews of the antidumping duty orders on ferrovanadium from China and South Africa.[9] On April 9, 2008, Commerce determined that revocation of the antidumping duty orders on ferrovanadium from China and South Africa would be likely to lead to continuation or recurrence of dumping.[10] On November 24, 2008, the Commission determined that material injury would be likely to continue or recur within a reasonably foreseeable time.[11] Following affirmative determinations in the five-year reviews by Commerce and the Commission, effective December 19, 2008, Commerce issued a continuation of the antidumping duty orders on imports of ferrovanadium from China and South Africa.[12]

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[5] Ferrovanadium from China and South Africa, Inv. Nos. 731-TA-986–987 (Final), USITC Publication 3570, January 2003 ("Original publication"), p. 1.1.

[6] 67 FR 71136 and 67 FR 71137, November 29, 2002.

[7] 68 FR 2361, January 16, 2003.

[8] 68 FR 4168 and 68 FR 4169, January 28, 2003.

[9] 73 FR 14484, March 18, 2008.

[10] 73 FR 19192, April 9, 2008.

[11] 73 FR 72837, December 1, 2008.

[12] 73 FR 77609, December 19, 2008.

The second five-year reviews

On February 4, 2014, the Commission determined that it would conduct full reviews of the antidumping duty orders on ferrovanadium from China and South Africa.[13] On March 13, 2014, Commerce determined that revocation of the antidumping duty orders on ferrovanadium from China and South Africa would be likely to lead to continuation or recurrence of dumping.[14] On January 28, 2015, the Commission determined that material injury would be likely to continue or recur within a reasonably foreseeable time.[15] Following affirmative determinations in the five-year reviews by Commerce and the Commission, effective February 18, 2015, Commerce issued a continuation of the antidumping duty orders on imports of ferrovanadium from China and South Africa.[16]

The third five-year reviews

On April 6, 2020, the Commission determined that it would conduct expedited reviews of the antidumping duty orders on ferrovanadium from China and South Africa.[17] On May 5, 2020, Commerce determined that revocation of the antidumping duty orders on ferrovanadium from China and South Africa would be likely to lead to continuation or recurrence of dumping.[18] On August 7, 2020, the Commission determined that material injury would be likely to continue or recur within a reasonably foreseeable time.[19] Following affirmative determinations in the five-year reviews by Commerce and the Commission, effective August 20, 2020, Commerce issued a continuation of the antidumping duty orders on imports of ferrovanadium from China and South Africa.[20]

[13] 79 FR 9000, February 14, 2014.
[14] 79 FR 14216, March 13, 2014.
[15] 80 FR 5787, February 3, 2015.
[16] 80 FR 8607, February 18, 2015.
[17] 85 FR 43258, July 16, 2020.
[18] 85 FR 26667, May 5, 2020.
[19] 85 FR 49394, August 13, 2020.
[20] 85 FR 51408, August 20, 2020.

Previous and related investigations

The Commission has conducted several previous import relief investigations on ferrovanadium and nitrided vanadium from Russia and ferrovanadium from South Korea, as presented in table 1.2.

Table 1.2 Ferrovanadium: Previous and related Commission proceedings and current status

Date	Number	Country	ITC original determination	Current status
1994	731-TA-702	Russia	Affirmative	ITC negative, third review. ITA revoked order, effective October 13, 2011
2016	731-TA-1315	South Korea	Affirmative	Order continued after first review, effective November 29, 2022

Source: U.S. International Trade Commission publications and Federal Register notices.

Note: "Date" refers to the year in which the investigation was instituted by the Commission.

Note: In addition to ferrovanadium, the subject merchandise covered in Investigation No. 731-TA-702 included nitrided vanadium.

Commerce's five-year reviews

Commerce announced that it would conduct expedited reviews with respect to the orders on imports of ferrovanadium from China and South Africa with the intent of issuing the final results of these reviews based on the facts available not later than October 29, 2025.[21] Commerce publishes its Issues and Decision Memoranda and its final results concurrently, accessible upon publication at https://access.trade.gov/public/FRNoticesListLayout.aspx and subsequently on the Commission's Electronic Document Information System ("EDIS"). Issues and Decision Memoranda contain complete and up-to-date information regarding the background and history of the order, including scope rulings, duty absorption, changed circumstances reviews, and anticircumvention, as well as any decisions that may have been pending at the issuance of this report. Any foreign producers/exporters that are not currently subject to the antidumping duty orders on imports of ferrovanadium from China and South Africa are noted in the sections titled "The original investigations" and "U.S. imports," if applicable.

[21] Letter from Alex Villanueva, Senior Director, Office I, AD/CVD Operations, Enforcement and Compliance, U.S. Department of Commerce to Nannette Christ, Director of Investigations, U.S. International Trade Commission, August 22, 2025.

The product

Commerce's scope

Commerce has defined the scope as follows:

> The scope of the Orders covers all ferrovanadium regardless of grade, chemistry, form, shape, or size. Ferrovanadium is an alloy of iron and vanadium that is used chiefly as an additive in the manufacture of steel. The merchandise is commercially and scientifically identified as vanadium. It specifically excludes vanadium additives other than ferrovanadium, such as nitride vanadium, vanadium-aluminum master alloys, vanadium chemicals, vanadium oxides, vanadium waste and scrap, and vanadium-bearing raw materials such as slag, boiler residues and fly ash. Merchandise under the following Harmonized Tariff Schedule of the United States (HTSUS) item numbers 2850.00.2000, 8112.40.3000, and 8112.40.6000 are specifically excluded.[22]

U.S. tariff treatment

Ferrovanadium is currently imported under Harmonized Tariff Schedule of the United States ("HTS") statistical reporting number 7202.92.0000.[23] The general rate of duty is 4.2 percent ad valorem for HTS subheading 7202.92.00.[24] Decisions on the tariff classification and treatment of imported goods are within the authority of U.S. Customs and Border Protection.

[22] 85 FR 51408, August 20, 2020.

[23] HTS statistical reporting number 7202.92.0000 (ferrovanadium) includes all forms of ferrovanadium and is not known to contain products that are outside the scope of these reviews.

[24] USITC, HTS (2025) Revision 23, Publication 5674, September 2025, pp. 72.11. Ferrovanadium imported under HTS statistical reporting numbers 2850.00.2000 (Covering certain vanadium compounds), 8112.92.7000 (Unwrought vanadium; waste and scrap; and powders), and 8112.99.2000 (Other, including articles of vanadium) are specifically excluded from Commerce's scope. Note that the scope of the subject orders identifies HTS statistical reporting numbers 8112.40.3000 and 8112.40.6000 as specifically excluded; however, these statistical reporting numbers were deleted from the HTS effective February 3, 2007. The corresponding excluded statistical reporting numbers include 8112.92.7000 and 8112.99.2000. USITC, HTS (2007) Basic Edition, Publication 3902, February 2007, Change record, p. 60.

Section 232 tariffs

Ferrovanadium is not subject to additional duties under section 232 of the Trade Expansion Act of 1962, as amended.[25]

Section 301 tariffs

Effective September 24, 2018, ferrovanadium originating in China was subject to an additional 10 percent ad valorem duty under section 301 of the Trade Act of 1974. Effective May 10, 2019, the section 301 duty for ferrovanadium was increased to 25 percent.[26]

Tariffs initiated under IEEPA[27]

Effective February 4, 2025, ferrovanadium originating in China was subject to an additional 10 percent ad valorem duty under the International Emergency Economic Powers Act ("IEEPA"), and on March 4, 2025, that additional duty increased to 20 percent ad valorem.[28]

Effective April 5, 2025, ferrovanadium originating in China was subject to an additional 10 percent ad valorem duty as part of tariffs initiated in April 2025 under IEEPA. That duty rose to 84 percent ad valorem effective April 9, 2025, and rose again to 125 percent effective April 10, 2025. However, effective May 14, 2025, the duty rate for tariffs initiated in April 2025 under

[25] In response to a petition filed by AMG Vanadium and U.S. Vanadium in November 2019, the U.S. Department of Commerce conducted a section 232 investigation to determine the effects of imports of vanadium products (including ferrovanadium) on national security. In February 2021, Commerce concluded that "imports of vanadium do not threaten to impair national security" as defined in section 232. Commerce cited the success of existing antidumping duties in countering less than fair value imports as a factor in its determination. 86 FR 64748, November 18, 2021.

[26] 83 FR 47974, September 21, 2018; 84 FR 20459, May 9, 2019. 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, HTS (2025) Revision 23, Publication 5674, September 2025, pp. 99.3.60 to 99.3.84, 99.3.398. Goods exported from China to the United States prior to May 10, 2019, and entering the United States prior to June 1, 2019, were not subject to the escalated 25 percent duty (84 FR 21892, May 15, 2019).

[27] Multiple tariffs have been enacted under the authority of the International Emergency Economic Powers Act ("IEEPA"). Tariffs specific to Canada, China, and Mexico were initiated in February 2025. Tariffs initiated in April 2025 under IEEPA were applied globally. Tariffs specific to Brazil were initiated in July 2025. Tariffs under IEEPA have been amended over time.

[28] 90 FR 9121, February 7, 2025; 90 FR 11426, March 6, 2025; 90 FR 11463, March 7, 2025. See also HTS heading 9903.01.20 and U.S. note 2(s) and HTS heading 9903.01.24 and U.S. note 2(u) to subchapter III of chapter 99 and related tariff provisions for this duty treatment. USITC, HTS (2025) Revision 23, Publication 5674, September 2025, pp. 99.3.4 to 99.3.5, 99.3.318 to 99.3.319.

IEEPA on products originating in China was reduced to 10 percent for a period of 90 days, which was later extended until November 10, 2025.[29]

Effective April 5, 2025, ferrovanadium originating in South Africa was subject to an additional 10 percent ad valorem duty as part of tariffs initiated in April 2025 under IEEPA. Effective April 9, 2025, South Africa was instead assigned an individualized country duty of 30 percent ad valorem. However, effective April 10, 2025, the individualized country duties were suspended and the additional duty rate as part of tariffs initiated in April 2025 under IEEPA for ferrovanadium originating in South Africa was returned to 10 percent.[30] Effective August 7, 2025, South Africa was assigned an individualized country duty of 30 percent.[31]

Table 1.3 presents a summary of the additional tariffs in effect as of September 24, 2025.

Table 1.3 Ferrovanadium: Additional tariffs on imports from China and South Africa as of September 24, 2025

Duty rates in percent ad valorem

Additional tariff	China	South Africa
Section 232	Not applicable	Not applicable
Section 301	25	Not applicable
IEEPA – China specific	20	Not applicable
Tariffs initiated in April 2025 under IEEPA	10	30
Total additional ad valorem rate	55	30

Source: Federal Register notices and other sources cited in this section (Tariff treatment).

Note: Duty rates in the table reflect the duty rates as of the writing of this report. See the text above for historical changes to the additional tariffs.

[29] The duty as part of tariffs initiated in April 2025 under IEEPA is in addition to the 20 percent ad valorem duty under IEEPA that went into effect on March 4, 2025, for China. On November 10, 2025, the tariff rate will increase to 34 percent unless further changes are made. 90 FR 15041, April 7, 2025; 90 FR 15509, April 14, 2025; 90 FR 15625, April 15, 2025; 90 FR 21831, May 21, 2025; 90 FR 39305, August 14, 2025. See also HTS headings 9903.01.25 and 9903.01.63 and U.S. note 2(v) to subchapter III of chapter 99 and related tariff provisions for this duty treatment. USITC, HTS (2025) Revision 23, Publication 5674, September 2025, pp. 99.3.5 to 99.3.14, 99.3.319, and 99.3.326.

[30] Individualized country duties as part of tariffs initiated in April 2025 under IEEPA for all countries other than China were suspended until August 1, 2025. 90 FR 15041, April 7, 2025. 90 FR 15625, April 15, 2025. 90 FR 30823, July 10, 2025. See also HTS headings 9903.01.25 and 9903.01.59 and U.S. note 2(v) to subchapter III of chapter 99 and related tariff provisions for this duty treatment. USITC, HTS (2025) Revision 23, Publication 5674, September 2025, pp. 99.3.5 to 99.3.14, 99.3.319, and 99.3.325.

[31] FR 37963, August 6, 2025. See also HTS heading 9903.02.55 and U.S. note 2(v) to subchapter III of chapter 99 and related tariff provisions for this duty treatment. USITC, HTS (2025) Revision 23, Publication 5674, September 2025, pp. 99.3.5 to 99.3.14, and 99.3.346.

Description and uses[32]

Ferrovanadium is an alloy used to add vanadium to molten steel. Steelmaking is the largest use of vanadium and accounted for more than 90 percent of all vanadium consumption in the United States in 2024.[33] Steel products that may include vanadium are certain construction alloy steels, rail steels, high-speed and heat-resisting tool and die steels, and high-strength low-alloy steels (HSLA), often called microalloy steels. Microalloy steels are used in pipeline steel, concrete reinforcing bars (rebar), structural shapes and plate for construction, and in automobile components. Vanadium is used in steel to impart strength, toughness, and wear resistance. The formation of vanadium-rich carbides and nitrides imparts the strength to steel; the addition of only a few kilograms of vanadium per ton of steel increases the strength of the steel by as much as 25 percent. Apart from its strengthening characteristic, vanadium also inhibits corrosion and oxidation.[34]

Ferrovanadium is commonly produced in grades having a vanadium content of 40 to 60 percent or 75 to 85 percent. Regardless of grade, commercial practice is to quote the price of ferrovanadium based on the contained vanadium content. Pricing information for ferrovanadium is available in several subscription-based industry publications and is used in setting contracts and spot sales.[35] Ferrovanadium is commonly packaged for sale in the United States in containers of a specified content of contained vanadium, typically 25 pounds.

[32] Unless otherwise noted, this information is based on Ferrovanadium from China and South Africa, USITC Publication 5099, August 2020 ("Third review publication"), pp. 1.8 to 1.9.

[33] U.S. Geological Survey, Mineral Commodity Summaries 2025: Vanadium, January 2025, p. 192, https://pubs.usgs.gov/periodicals/mcs2025/mcs2025-vanadium.pdf.

[34] Kelley, K.D., Scott, C.T., Polyak, D.E., and Kimball, B.E., 2017, Vanadium, chap. U of Schulz, K.J., DeYoung, J.H., Jr., Seal, R.R., II, and Bradley, D.C., eds., Critical mineral resources of the United States—Economic and environmental geology and prospects for future supply: U.S. Geological Survey Professional Paper 1802, p. U1– U36, https://doi.org/10.3133/pp1802U, accessed September 22, 2025.

[35] Domestic interested parties' response to the notice of institution, July 31, 2025, pp. 10, 52, and exh. 1.

Although vanadium is one of the most common elements in the earth's crust, it is not frequently found in concentrations that would be economical to mine or process for vanadium content alone. As a result, it is most often produced as a byproduct or co-product of other mineral operations. For example, the largest source of vanadium is as a byproduct of steel production at steel mills that process iron ore with a high vanadium content. Iron ore containing recoverable quantities of vanadium (titaniferous magnetite ore) is mined in only a few places in the world; the major producers are China, Russia, and South Africa.[36] The second most common source of vanadium is recovery from vanadium-containing ore. Most vanadium ore production is in China and South Africa. The third source of vanadium production is recovery of vanadium from sources such as residue produced from the processing and burning of vanadium-containing oil products.

Manufacturing process[37]

The ferrovanadium manufacturing process is distinguished by the type of feedstock used in its production. In general, there are three processing routes for deriving vanadium which is then used to produce ferrovanadium. The primary route recovers vanadium from vanadium-bearing ore; the co-product route recovers vanadium from iron-ore (containing vanadium) during steel production; and the secondary route recovers vanadium from waste generated from burning oil for fuel (figure 1.1). Most ferrovanadium operations utilize a two-step process: the first step is separation of the chemical vanadium pentoxide (V_2O_5) from the contents of the raw materials and the second step is production of ferrovanadium from vanadium pentoxide. Vanadium pentoxide is an intermediate chemical compound that is primarily used to produce ferrovanadium, but also is used to manufacture sulfuric acid, catalysts, and other applications.[38]

In the United States, domestic firms either produce ferrovanadium from vanadium pentoxide or from secondary materials in the form of spent catalysts and petroleum combustion residues. The first method is used in production of ferrovanadium for a processing fee (toll production), where the producer makes ferrovanadium from vanadium pentoxide that is provided by its customers. This process is aluminothermic, in which the heat for the process is derived from chemical reactions. In this process, vanadium pentoxide and aluminum are

[36] Vanitec Limited, "Making Vanadium: Vanadium Sources," https://vanitec.org/vanadium/making-vanadium, retrieved September 24, 2025.

[37] Unless otherwise noted, this information is based on the Third review publication, pp. 1.9 to 1.12.

[38] Vanitec Limited, "Vanadium Products for Chemical Applications," https://vanitec.org/vanadium/vanadium-products, retrieved July 8, 2025.

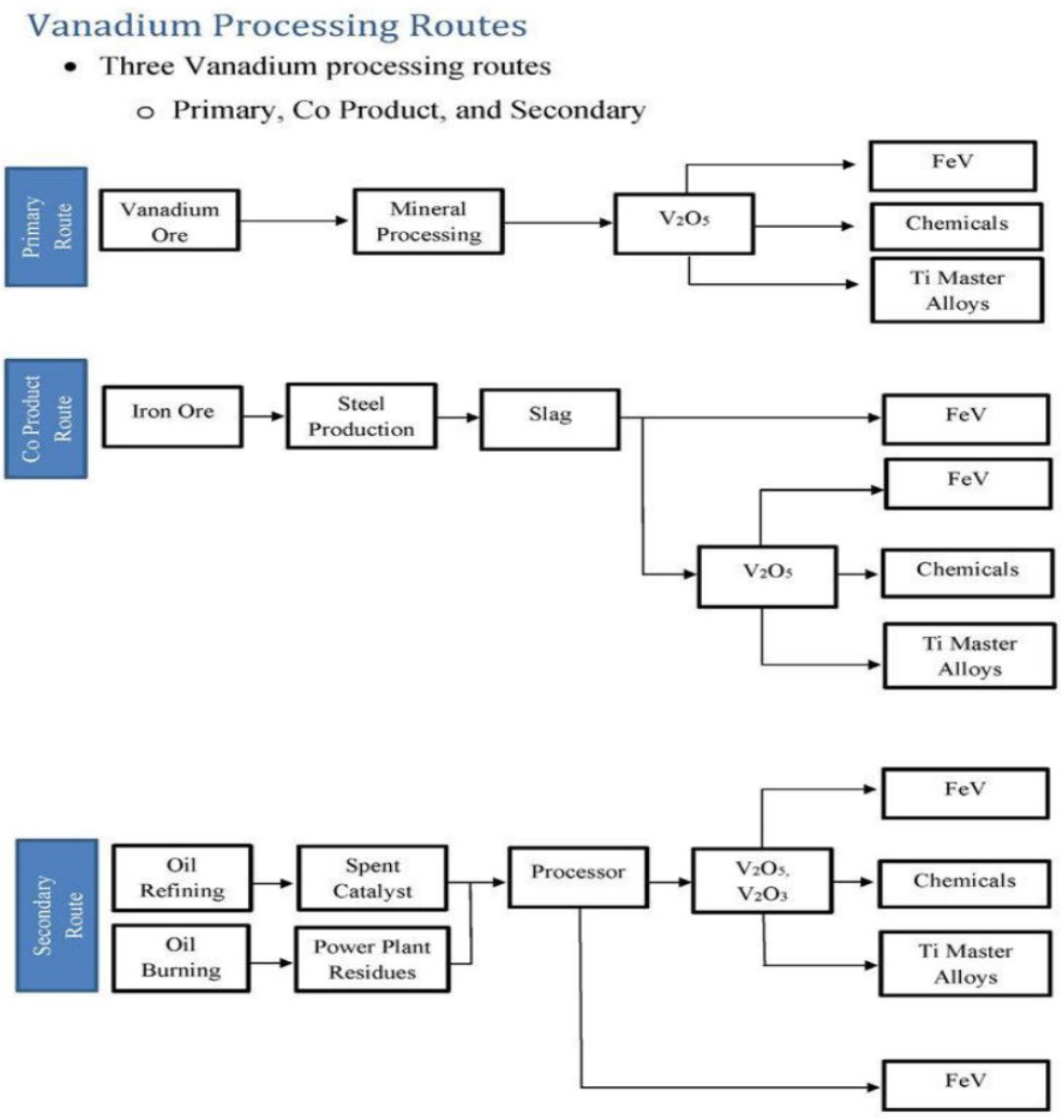
placed in a conversion vessel along with steel scrap and flux materials. The contents are ignited with a fuse and the reaction proceeds quickly, with the burning of aluminum providing the heat. The oxygen in the vanadium pentoxide attaches to the aluminum and the vanadium attaches to the iron in the steel scrap. The result is molten ferrovanadium and an aluminum oxide-rich slag. After cooling, both are crushed and sized for sale. Ferrovanadium is packaged in individual containers, usually of 25 pounds of vanadium, or in 2,000-pound supersacks. Slag from the process is sold for use as flux in steelmaking operations.

The other method used in the United States is secondary production. Ferrovanadium and other ferroalloys are derived from spent catalysts and petroleum combustion residues via pyrometallurgical processing in electrical furnaces. This process yields ferrovanadium that contains approximately 55 percent vanadium, in contrast to the first method, which produces ferrovanadium containing 80 percent vanadium.[39] The resulting product also contains more silicon but less aluminum than ferrovanadium produced from vanadium pentoxide. Despite the difference in the vanadium content, the product is packaged similarly to 80-percent product, in individual cans or paper sacks, typically of 25 pounds of vanadium content, or in 2,000-pound supersacks.

Foreign producers, in large-part, recover vanadium from slag generated during steelmaking, while a handful produce ferrovanadium from vanadium-containing ore. Whether the raw material is slag from steelmaking or vanadium-containing ore, the basic extractive process for recovering the vanadium is similar. The vanadium in such raw materials is in a highly oxidized form. Conversion involves “salt roasting,” a process in which the vanadium-bearing material is mixed with a chemical such as sodium chloride and roasted. After the oxidized vanadium is converted to a water-soluble salt through the roasting process, it is leached, precipitated, and refined to a vanadium oxide. Production of ferrovanadium from the vanadium oxide (such as vanadium pentoxide or vanadium trioxide) is similar to the first domestic production process described above. An overview of production is illustrated in figure 1.1, which shows the different production processes used to make ferrovanadium and other vanadium products.

[39] Yilmaden, “Bear Metallurgical Company,” retrieved August 19, 2025, https://www.yilmaden.com/bear-metallurgy.

Figure 1.1 Ferrovanadium: Production processes



Source: U.S. Department of Commerce, "The Effect of Imports of Vanadium on the National Security: An Investigation Conducted Under Section 232 of The Trade Expansion Act of 1962, As Amended," February 22, 2021, p. 47, https://www.bis.doc.gov/index.php/documents/section-232-investigations/2793-vanadium-section-232-report-public-with-appendices/file.

Note: Ferrovanadium is identified as "FeV" in this figure.

The industry in the United States

U.S. producers

During the final phase of the original investigations, the Commission received U.S. producer questionnaires from five firms, which accounted for all of production of ferrovanadium in the United States during 2001.[40] During the full first five-year reviews, the Commission received U.S. producer questionnaires from four firms, which accounted for the great bulk of production and shipments of ferrovanadium in the United States during the review period.[41] During the full second five-year reviews, the Commission received U.S. producer questionnaires from eight firms, which accounted for all of U.S. production and nearly all U.S. shipments of ferrovanadium during January 2008 through June 2014.[42] During the expedited third five-year reviews, the domestic interested party provided a list of two known operating U.S. producers of ferrovanadium, which accounted for all production of ferrovanadium in the United States during 2019.[43]

In response to the Commission's notice of institution in these current reviews, domestic interested parties provided a list of two known and currently operating U.S. producers of ferrovanadium.[44] One firm, providing U.S. industry data in response to the Commission's notice of institution, accounted for approximately *** percent of production of ferrovanadium in the United States during 2024.[45]

[40] Original publication, p. 3.1.

[41] Ferrovanadium from China and South Africa, Investigation Nos. 731-TA-986-987 (Review), USITC Publication 4046, November 2008 ("First review publication"), p. 1.13. U.S. industry data consisted of two producers and two tollees. Ibid.

[42] Ferrovanadium from China and South Africa, Investigation Nos. 731-TA-986-987 (Second Review), USITC Publication 4517, January 2015 ("Second review publication"), p. 1.18. U.S. industry data consisted of two producers and six tollees. Ibid.

[43] Third review publication, p. 1.2 and 1.3; Ferrovanadium from China and South Africa (Third Review), Confidential Report, INV-SS-037, March 25, 2020, ("Third review confidential report"), pp. 1.2 and 1.13. U.S. industry data consisted of one producer and one tollee. Ibid.

[44] Domestic interested parties list AMG Vanadium LLC ("AMG V") and Bear as the only U.S. producers of ferrovanadium in the United States, with Bear's production continuing to include toll-conversion of vanadium pentoxide and other vanadium-bearing inputs supplied by other firms (i.e., "tollees"). Domestic interested parties' response to the notice of institution, July 31, 2025, p. 7 and exh. 1.

[45] Domestic interested parties' response to the notice of institution, July 31, 2025, exh. 1.

Recent developments

Table 1.4 presents events in the U.S. industry since the Commission's last five-year reviews.[46]

[46] For recent developments, if any, in tariff treatment, please see "U.S. tariff treatment" section.

Table 1.4 Ferrovanadium: Developments in the U.S. industry

Item	Firm	Event
Supply agreement	AMG V	January 2020– AMG V signed a long-term, multi-year agreement to process spent catalysts from an unnamed oil refinery in North America. AMG V reclaims metals from spent oil refinery catalysts and uses them to produce ferrovanadium and other alloys for customers in the steel sector at its plant in Cambridge, OH.
Supply agreement	U.S. Vanadium	September 2021– U.S. Vanadium announced that it secured five years of vanadium feed material to ramp up production of high-purity vanadium oxide and other vanadium-based materials at his processing facility in Hot Springs, AR. The company expected this deal to secure feed material would enable it to expand its production operations and diversify its vanadium feedstock supply chains. The vanadium oxide produced at the plant can be used as a feedstock for production of ferrovanadium and other products.
Production process	Bear	2022– During the year, Bear performed test studies to produce ferrovanadium from the input material vanadium pentoxide in a powder form rather than flake. The tests resulted in successful production of ferrovanadium from the powder form, potentially expanding the types of raw materials that Bear can use to produce ferrovanadium. This development could allow Bear to expand its ferrovanadium production capacity as it will be able to process raw materials in more forms.
Plant opening	AMG V	December 2022–AMG V opened a new $300 million spent catalyst recycling plant in Zanesville, OH, close to its existing plant in Cambridge, OH. The new plant doubled AMG V's capacity to recycle spent catalysts and produce ferrovanadium and other alloys. According to the company, the expansion project was driven by multiple factors, including the anticipated growth in spent catalyst generation by North American oil refineries.

Source: Domestic interested parties' response to the notice of institution, July 31, 2025, p. 54; U.S. Vanadium, news release, "U.S. Vanadium Secures 5-Year Supply of Vanadium Feed Material for Processing into High-Purity Vanadium Products and Ultra-High-Purity Vanadium Redox Flow Battery Electrolyte." September 7, 2021, https://usvanadium.com/u-s-vanadium-secures-5-year-supply-of-vanadium-feed-material-for-processing-into-high-purity-vanadium-products-and-ultra-high-purity-vanadium-redox-flow-battery-electrolyte/; Yildirim Group of Companies, 2022 Annual Report, May 24, 2023, p. 54, https://www.yildirimgroup.com/media/Annual/Annual-Report_2022-new.pdf; AMG Vanadium, "AMG Advanced Metallurgical Group N.V. Announces Long-Term Spent Catalyst Recycling Agreement," January 7, 2020, https://amg-v.com/news/article/amg-advanced-metallurgical-group-n-v-announces-long-term-spent-catalyst-recycling-agreement/; AMG Vanadium, "Spent Catalyst Services," retrieved August 13, 2025, p. 54, https://amg-v.com/products-services/spent-catalyst-services/,Metals and Mining Review, "AMG Vanadium Reimagining Waste as Value," retrieved August 13, 2025, https://www.metalsminingreview.com/amg-vanadium; AMG Vanadium, "AMG Vanadium Breaks Ground At New Zanesville Plant," retrieved August 13, 2025, https://amg-v.com/news/article/amg-vanadium-breaks-ground-at-new-zanesville-plant/.

U.S. producers' trade and financial data

The Commission asked the domestic interested parties to provide trade and financial data in their response to the notice of institution in the current five-year reviews. Table 1.5 presents a compilation of the trade and financial data submitted from responding U.S. producers and tollees in the original investigations and subsequent five-year reviews.

Table 1.5 Ferrovanadium: Trade and financial data submitted by U.S. producers and tollees by period

Quantity in 1,000 pounds contained vanadium; value in 1,000 dollars; unit value in dollars per pound contained vanadium; ratio in percent

Item	Measure	2001	2007	2013	2019	2024
Capacity	Quantity	***	***	***	***	***
Production	Quantity	***	***	***	***	***
Capacity utilization	Ratio	***	***	***	***	***
U.S. shipments	Quantity	6,274	8,444	7,187	***	***
U.S. shipments	Value	23,735	134,686	87,651	***	***
U.S. shipments	Unit value	3.78	15.95	12.20	***	***
Net sales	Value	24,519	***	***	***	***
COGS	Value	***	***	***	***	***
COGS to net sales	Ratio	***	***	***	***	***
Gross profit or (loss)	Value	***	***	***	***	***
SG&A expenses	Value	***	***	***	***	***
Operating income or (loss)	Value	***	***	***	***	***
Operating income or (loss) to net sales	Ratio	***	***	***	***	***

Source: For the years 2001, 2007, 2013, and 2019, data are compiled using data submitted in the Commission's original investigations and subsequent five-year reviews. For the year 2024, data are compiled using data submitted by the domestic interested parties. Domestic interested parties' response to the notice of institution, exh. 1.

Note: For a discussion of data coverage, please see "U.S. producers" section.

Note: For all years, capacity, production, and financial (except net sales) data are for U.S. producers only.

Note: For 2001, 2007, and 2013, U.S. shipments and net sales include U.S. producers and tollees. For 2019 and 2024, U.S. shipments and net sales include U.S. producers' commercial shipments only.

Note: In 2019, the domestic interested party reported *** pounds contained vanadium of tolled merchandise valued at $***. Third review confidential report, p. 1.17. During this period of review, domestic interested parties reported *** pounds contained vanadium of tolled merchandise valued at $*** in 2021. Domestic interested parties' response to the notice of institution, p. 63.

Definitions of the domestic like product and domestic industry

The domestic like product is defined as the domestically produced product or products which are like, or in the absence of like, most similar in characteristics and uses with, the subject merchandise. The domestic industry is defined as the U.S. producers as a whole of the domestic like product, or those producers whose collective output of the domestic like product constitutes a major proportion of the total domestic production of the product. Under the related parties provision, the Commission may exclude a U.S. producer from the domestic industry for purposes of its injury determination if "appropriate circumstances" exist.[47]

The domestic like product is the domestically produced product or products which are like, or in the absence of like, most similar in characteristics and uses with, the subject merchandise. In its original determinations, its full first and second five-year review determinations, and its expedited third five-year review determinations, the Commission found a single domestic like product consisting of ferrovanadium of all grades coextensive with Commerce's scope.[48]

The domestic industry is the U.S. producers as a whole of the domestic like product, or those producers whose collective output of the domestic like product constitutes a major proportion of the total domestic production of the product. In its original determinations, its full first and second five-year review determinations, and its expedited third five-year review determinations, the Commission defined the domestic industry as all U.S. producers of the domestic like product. The Commission did not include tollees in the domestic industry in its original determinations, full first and second five-year review determinations, and expedited third five-year review determinations, but considered the information pertaining to the domestic industry's tolling operations. One Commissioner defined a different domestic industry in the original investigations.[49]

[47] Section 771(4)(B) of the Tariff Act of 1930, 19 U.S.C. § 1677(4)(B).
[48] 90 FR 28774, July 1, 2025.
[49] Ibid.

U.S. importers

During the final phase of the original investigations, the Commission received U.S. importer questionnaires from 12 firms, which provided less-than-complete coverage of U.S. imports of ferrovanadium. Import data presented in the original investigations were based on official Commerce statistics.[50]

During the full first five-year reviews, the Commission received usable U.S. importer questionnaires from six firms, which accounted for approximately 100 percent of total U.S. imports of ferrovanadium from China and South Africa during 2007. Import data presented in the first reviews were based on official Commerce statistics.[51]

During the full second five-year reviews, the Commission received U.S. importer questionnaires from 12 firms, which accounted for all known U.S. imports of ferrovanadium from China and South Africa between January 2008 and June 2014. Import data presented in the second reviews were based on official Commerce statistics.[52]

Although the Commission did not receive responses from any respondent interested parties in its expedited third five-year reviews, the domestic interested parties provided a list of four potential U.S. importers of ferrovanadium. Import data presented in the third reviews were based on adjusted official Commerce statistics.[53]

Although the Commission did not receive responses from any respondent interested parties in these current reviews, in their response to the Commission's notice of institution, the domestic interested parties provided a list of seven potential U.S. importers of ferrovanadium.[54]

[50] Original publication, pp. 4.1 to 4.2 and table 4.1.

[51] First review publication, pp. 1.4 and 4.1.

[52] Second review publication, p. 4.1.

[53] Third review publication, p. 1.19 to 1.23.

[54] Domestic interested parties' response to the notice of institution, July 31, 2025, p. 61. Domestic interested parties provided a list of seven potential U.S. importers of ferrovanadium from nonsubject sources. Domestic interested parties report that they have limited information regarding U.S. importers of ferrovanadium from subject sources. Ibid.

U.S. imports

Table 1.6 presents the quantity, value, and unit value of U.S. imports from China and South Africa as well as the other top sources of U.S. imports (shown in descending order of 2024 imports by quantity).

Table 1.6 Ferrovanadium: U.S. imports, by source and period

Quantity in 1,000 pounds contained vanadium; value in 1,000 dollars

U.S. imports from	Measure	2020	2021	2022	2023	2024
China	Quantity	—	—	—	—	0
South Africa	Quantity	—	4	5	—	5
Subject sources	Quantity	—	4	5	—	5
Canada	Quantity	2,368	2,452	3,386	3,360	3,329
Czech Republic	Quantity	***	***	***	***	***
Austria	Quantity	1,518	1,728	3,157	2,515	1,451
All other sources	Quantity	272	2,214	1,074	825	586
Nonsubject sources	Quantity	***	***	***	***	***
All import sources	Quantity	***	***	***	***	***
China	Value	—	—	—	—	3
South Africa	Value	—	63	89	—	63
Subject sources	Value	—	63	89	—	66
Canada	Value	22,180	27,987	54,568	44,841	33,900
Czech Republic	Value	20,522	25,640	49,162	17,669	30,105
Austria	Value	12,249	19,152	57,601	32,790	14,895
All other sources	Value	2,044	23,571	11,204	6,943	3,965
Nonsubject sources	Value	56,995	96,350	172,535	102,243	82,865
All import sources	Value	56,995	96,413	172,625	102,243	82,931

Table Continued.

Table 1.6 continued, Ferrovanadium: U.S. imports, by source and period

Unit value in dollars per pound contained vanadium

U.S. imports from	Measure	2020	2021	2022	2023	2024
China	Unit value	—	—	—	—	10.32
South Africa	Unit value	—	14.31	17.61	—	13.57
Subject sources	Unit value	—	14.31	17.61	—	13.36
Canada	Unit value	9.37	11.42	16.12	13.35	10.18
Czech Republic	Unit value	—	—	—	—	—
Austria	Unit value	8.07	11.08	18.24	13.04	10.26
All other sources	Unit value	8.33	10.65	10.70	8.48	6.88
Nonsubject sources	Unit value	***	***	***	***	***
All import sources	Unit value	***	***	***	***	***

Source: Compiled from official Commerce statistics for HTS statistical reporting number 7202.92.0000, accessed August 12, 2025, adjusted with proprietary, Census-edited Customs records, accessed August 26, 2025.

Note: Because of rounding, figure may not add to total shown. 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 “—“.

Note: Census has suppressed the quantities of U.S. imports of ferrovanadium from the Czech Republic since September 2014. Quantity data for the Czech Republic are based on proprietary, Census-edited Customs records. Unit values for the Czech Republic are not presented due to mixed data methods.

Cumulation considerations[55]

In assessing whether imports should be cumulated in five-year reviews, the Commission considers, among other things, whether there is a likelihood of a reasonable overlap of competition among subject imports and the domestic like product. Additional information concerning geographical markets and simultaneous presence in the market is presented below.[56]

Imports from China were reported in 1 of the 60 months between 2020 and 2024. Imports from South Africa were reported in 5 of the 60 months between 2020 and 2024. No imports from China or South Africa were reported in 2020 and 2023.[57]

During 2020 through 2024, all imports of ferrovanadium from China entered through the southern borders of entry. Imports of ferrovanadium from South Africa entered through eastern and southern borders of entry.[58]

[55] Unless otherwise noted, this information is based on official U.S. import statistics for HTS statistical reporting number 7202.92.0000.

[56] In addition, available information concerning subject country producers and the global market is presented in the next section of this report.

[57] Imports of ferrovanadium from China were reported in July 2024. Imports of ferrovanadium from South Africa were reported in March 2021, November 2022, December 2022, June 2024, and September 2024.

[58] During 2020 through 2024, all imports of ferrovanadium from China entered through Laredo, Texas (in July 2024), while imports from South Africa entered through Baltimore, Maryland (in March 2021, December 2022, and September 2024); New York, New York (in November 2022), and Laredo, Texas (in June 2024).

Apparent U.S. consumption and market shares

Table 1.7 presents data on U.S. producers' and tollees' U.S. shipments, U.S. imports, apparent U.S. consumption, and market shares.

Table 1.7 Ferrovanadium: Apparent U.S. consumption and market shares, by source and period

Quantity in 1,000 pounds contained vanadium; value in 1,000 dollars

Source	Measure	2001	2007	2013	2019	2024
U.S. producers	Quantity	6,274	8,444	7,187	***	***
China	Quantity	992	0	0	—	0
South Africa	Quantity	2,475	17	0	—	5
Subject sources	Quantity	3,466	17	0	—	5
Nonsubject sources	Quantity	2,150	4,866	8,125	***	***
All import sources	Quantity	5,617	4,883	8,125	***	***
Apparent U.S. consumption	Quantity	11,891	13,327	15,312	***	***
U.S. producers	Value	23,735	134,686	87,651	***	***
China	Value	3,744	0	0	—	3
South Africa	Value	9,588	350	0	—	63
Subject sources	Value	13,333	350	0	—	66
Nonsubject sources	Value	8,362	64,120	92,923	168,551	82,865
All import sources	Value	21,695	64,470	92,923	168,551	82,931
Apparent U.S. consumption	Value	45,430	199,156	180,574	***	***

Table continued.

Table 1.7 continued, Ferrovanadium: Apparent U.S. consumption and market shares, by source and period

Shares in percent

Source	Measure	2001	2007	2013	2019	2024
U.S. producers	Share of quantity	52.8	63.4	46.9	***	***
China	Share of quantity	8.3	0.0	0.0	—	***
South Africa	Share of quantity	20.8	0.1	0.0	—	***
Subject sources	Share of quantity	29.2	0.1	0.0	—	***
Nonsubject sources	Share of quantity	18.1	36.5	53.1	***	***
All import sources	Share of quantity	47.2	36.6	53.1	***	***
U.S. producers	Share of value	52.2	67.6	48.5	***	***
China	Share of value	8.2	0.0	0.0	—	***
South Africa	Share of value	21.1	0.2	0.0	—	***
Subject sources	Share of value	29.3	0.2	0.0	—	***
Nonsubject sources	Share of value	18.4	32.2	51.5	***	***
All import sources	Share of value	47.8	32.4	51.5	***	***

Source: For the years 2001, 2007, 2013, and 2019, data are compiled using data submitted in the Commission's original investigations and subsequent five-year reviews. For the year 2024, U.S. producers' U.S. shipments are compiled from the domestic interested parties' response to the Commission's notice of institution and U.S. imports are compiled using official Commerce statistics under HTS statistical reporting number 7202.92.0000, accessed August 12, 2025, adjusted with proprietary, Census-edited Customs records, accessed August 26, 2025.

Note: Share of quantity is the share of apparent U.S. consumption by quantity in percent; share of value is the share of apparent U.S. consumption by value in percent.

Note: For a discussion of data coverage, please see "U.S. producers" and "U.S. importers" sections. Quantities and values less than 500 pounds are shown as "0". Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as "—".

Note: For information on U.S. producers and tollees, please see the trade and financial data table 1.5.

The industry in China

Producers in China

During the final phase of the original investigations, the Commission received foreign producer/exporter questionnaires from two firms, which accounted for approximately *** percent of production of ferrovanadium in China during 2001, and approximately nearly all of ferrovanadium exports from China to the United States during 2001.[59]

During the full first five-year reviews and full second five-year reviews, the Commission did not receive foreign producer/exporter questionnaires from any firm.[60]

Although the Commission did not receive responses from any respondent interested parties in its expedited third five-year reviews, the domestic interested party provided a list of three possible producers of ferrovanadium in China in that proceeding.[61]

Although the Commission did not receive responses from any respondent interested parties in these five-year reviews, the domestic interested parties provided a list of 10 possible producers of ferrovanadium in China.[62]

[59] Ferrovanadium from China and South Africa (Final), Confidential Report, INV-Z-197, December 11, 2002 ("Original confidential report"), pp. 7.1 and 7.2.

[60] First review publication, p. 4.4; Second review publication, p. 4.8.

[61] Third review publication, p. 1.24.

[62] Domestic interested parties' response to the notice of institution, July 31, 2025, exh. 1.

Recent developments

Table 1.8 presents events in the Chinese industry since the Commission's last five-year reviews.

Table 1.8 Ferrovanadium: Developments in the Chinese industry

Item	Firm	Event
Production curtailment	Chengde Iron and Steel Group/ Chengde Jianlong Special Steel	November 2021–Chengde Iron and Steel Group Co. Ltd. and Chengde Jianlong Special Steel reduced production of vanadium products from November 2021 to April 2022 to comply with environmental protection measures imposed by the government in Hebei and Jiangsu Provinces, Inner Mongolia, Tibet, and Xinjiang Uyghur Autonomous Regions. It was not known how much of the production curtailment was ferrovanadium.
Demand	N/A	June 2024–On June 25, 2024, China's State Administration for Market Regulation announced new national standards for round bar and reinforced bar (rebar) that were implement in September 2024. The new regulations were revisions to voluntary ones that had been announced in 2018. The mandatory standards covered tolerance, smelting, properties, package and stricter requirements for rebar quality. In order to meet the new standards, producers can add more vanadium (and silicomanganese) to rebar. Accordingly, the China Vanadium Association speculated that the new standards could increase China's annual consumption of certain vanadium products used in rebar by as much as 15 percent.

Source: Cited sources. Fastmarkets, "China's new rebar standards may deal another blow to domestic steelmakers," July 30, 2024, https://www.fastmarkets.com/insights/chinas-new-rebar-standards-may-deal-another-blow-to-domestic-steelmakers/; U.S. Geological Survey, 2021 Minerals Yearbook: Vanadium (Advance Release), June 2025, p. 81.4, https://pubs.usgs.gov/myb/vol1/2021/myb1-2021-vanadium.pdf.

Exports

Table 1.9 presents export data for ferrovanadium, from China (by export destination in descending order of quantity for 2024). South Korea (26.7 percent), the Netherlands (26.1 percent), and Japan (22.5 percent) were the leading export destinations in 2024.

Table 1.9 Ferrovanadium: Quantity of exports from China, by destination and period

Quantity in 1,000 pounds

Destination market	2020	2021	2022	2023	2024
South Korea	4,129	4,425	4,514	3,424	3,880
Netherlands	2,381	2,319	3,669	3,574	3,791
Japan	1,657	2,479	3,394	2,906	3,274
Taiwan	794	838	838	542	947
Canada	587	422	516	804	757
India	—	44	136	60	441
Malaysia	—	—	33	413	371
Vietnam	—	11	33	100	138
Egypt	—	—	—	—	132
United Arab Emirates	307	88	82	—	97
All other markets	78	231	1,121	415	719
All markets	9,932	10,856	14,336	12,239	14,549

Source: Global Trade Information Services, Inc., Global Trade Atlas, China Customs, HS subheading 7202.92, accessed August 12, 2025.

Note: Because of rounding, figures may not add to totals shown. Zeroes, null values, and undefined calculations are suppressed and shown as "—".

The industry in South Africa

Producers in South Africa

During the final phase of the original investigations, the Commission received foreign producer/exporter questionnaires from three firms. Two of these firms accounted for approximately *** percent of production of ferrovanadium in South Africa during 2001, and approximately *** percent of ferrovanadium exports from South Africa to the United States during 2001.[63]

During the full first five-year reviews, the Commission received foreign producer/exporter questionnaires from two firms, which accounted for approximately *** percent of production of ferrovanadium in South Africa during 2007, and approximately *** percent of ferrovanadium exports from South Africa to the United States during 2007.[64]

During the full second five-year reviews, the Commission received foreign producer/exporter questionnaires from two firms, which accounted for all production of ferrovanadium in South Africa during 2013. However, neither of the two firms reported exporting ferrovanadium to the United States in 2013.[65]

Although the Commission did not receive responses from any respondent interested parties in its expedited third five-year reviews, the domestic interested party provided a list of two possible producers of ferrovanadium in South Africa in that proceeding.[66]

Although the Commission did not receive responses from any respondent interested parties in these five-year reviews, the domestic interested parties provided a list of two possible producers of ferrovanadium in South Africa.[67]

[63] Original confidential report, pp. 7.2 to 7.4.

[64] Ferrovanadium from China and South Africa (Review), Confidential Report, INV-FF-137, October 29, 2008, p. 4.11.

[65] Second review publication, pp. 4.9 to 4.10.

[66] Third review publication, p. 1.28.

[67] Domestic interested parties' response to the notice of institution, July 31, 2025, exh. 1.

Recent developments

Table 1.10 presents events in the South African industry since the last five-year reviews.

Table 1.10 Ferrovanadium: Developments in the South African industry

Item	Firm	Event
New power plant	Rhovan	February 2024– Rhovan began construction of a 25-megawatt solar photovoltaic (PV) plant to provide power for its vanadium mining and processing facility located in the North West province. Once completed, the energy produced by the solar plant is expected to supply about 30 percent of the electricity used at the operations on an annual basis. The solar plant was expected to be completed by year-end 2024.
Acquisition	Bushveld	May 2024– In May 2024, Bushveld announced plans to sell 100 percent ownership of its Vanchem vanadium facility in Mpumalanga Province to Southern Point Resources ("SPR") for up to $40.6 million to "ease financial concerns." Vanchem is a primary vanadium processing facility that produces vanadium pentoxide, ferrovanadium, and vanadium chemicals. The sale was completed in November 2024.
Investment	NG Global Energy Solutions	March 2025– NG Global Energy Solutions (NG), a South African energy and mining company, invested and became a 35 percent shareholder in SPR Vanchem PTY Ltd. According to NG, the investment in the vanadium operations would support SPR Vanchem's vanadium production and "bolster NG Global's role in energy storage innovation and high-strength steel production."

Source: Cited sources. Domestic interested parties' response to the notice of institution, July 31, 2025, pp, 26 to 27, exh. 19; Glencore, "Glencore's Rhovan operations to build25MW solar power plant to reduce plant emissions," February 1, 2024, https://www.glencore.com/south-africa/news/glencores-rhovan-operations-to-build-25mw-solar-power-plant-to-reduce-plant-emissions; Mining.com, "Bushveld Minerals to sell Vanchem unit to ease financial woes," May 7, 2024, https://www.mining.com/bushveld-minerals-to-sell-vanchem-unit-to-ease-financial-woes/; Bushveld Minerals, "Vanchem Processing Facility," retrieved August 13, 2025; https://www.bushveldminerals.com/about/operations/vanchem/; NG Global Energy Solutions, Leader in Energy & Commodity Supply, retrieved August 14, 2025, https://www.ngglobal.co.za/.

Exports

Table 1.11 presents export data for ferrovanadium, from South Africa (by export destination in descending order of quantity for 2024). In 2024, the majority of exports were destined for the Netherlands (88.6 percent), followed by Japan (3.0 percent), and Brazil (2.5 percent). Note that the final destination for some exports to the Netherlands (a leading global exporter) could be other countries in Europe or other regions.[68]

Table 1.11 Ferrovanadium: Quantity of exports from South Africa, by destination and period

Quantity in 1,000 pounds

Destination market	2020	2021	2022	2023	2024
Netherlands	5,531	4,947	8,470	6,925	16,853
Japan	220	309	534	927	573
Brazil	209	276	243	541	467
Mexico	165	474	353	465	452
Canada	220	346	40	287	219
Colombia	201	287	45	88	132
United States	44	—	90	44	132
Australia	22	—	23	22	99
South Korea	238	1,089	—	—	89
Germany	5	—	3	—	6
All other markets	567	2,406	1,284	3,031	0
All markets	7,424	10,132	11,084	12,330	19,024

Source: Global Trade Information Services, Inc., Global Trade Atlas, South African Revenue Service, HS subheading 7202.92, accessed August 12, 2025.

Note: Because of rounding, figures may not add to totals shown. Figures shown as “0” represent values greater than zero, but less than “500.” Zeroes, null values, and undefined calculations are suppressed and shown as "—".

[68] Eurostat, “International trade statistics – background: What is the 'Rotterdam effect'?,” retrieved September 22, 2025, https://ec.europa.eu/eurostat/statistics-explained/index.php?title=International_trade_statistics_-_background#:~:text=At%20global%20level%2C%20most%20methodological,are%20released%20for%20free%20circulation).

Third-country trade actions

Based on available information, ferrovanadium from China and South Africa has not been subject to other antidumping or countervailing duty investigations outside the United States.[69]

[69] World Trade Organization, Trade Remedies Data Portal, https://trade-remedies.wto.org/en, retrieved August 13, 2025.

The global market

Table 1.12 presents global export data ferrovanadium (by source in descending order of quantity for 2024). In 2024, subject countries South Africa (27.4 percent), China (21.0 percent) were the leading exporters of ferrovanadium, followed by the Netherlands (20.4 percent), South Korea (8.6 percent), and Canada (4.8 percent) in 2024.

Table 1.12 Ferrovanadium: Quantity of global exports by country and period

Quantity in 1,000 pounds

Exporting country	2020	2021	2022	2023	2024
South Africa	7,424	10,132	11,084	12,330	19,024
China	9,932	10,856	14,336	12,239	14,549
Netherlands	13,852	14,492	17,360	14,832	14,126
South Korea	5,169	8,524	5,962	4,887	5,995
Canada	3,003	2,455	3,511	3,360	3,329
Czech Republic	12,280	15,211	12,998	2,391	1,951
Malaysia	28	—	12	1,587	1,583
Russia	1,715	4,035	513	2,015	1,486
Japan	1,979	662	1,428	1,358	1,439
Taiwan	1,834	1,662	723	882	891
All other exporters	17,123	9,537	7,231	5,265	5,012
All exporters	74,339	77,567	75,157	61,146	69,384

Source: Global Trade Information Services, Inc., Global Trade Atlas, Eurostat, Statistics Serbia and Montenegro, State Institute of Statistics, Chile Customs - Servicio Nacional de Aduana, South African Revenue Service, Customs Committee of Russia, International Enterprise Singapore, Peru Customs - Super Intedencia Nacional de Aduanas, China Customs, Swiss Customs, Taiwan Directorate General of Customs, HM Revenue & Custom, U.S. Department of Commerce, Bureau of Census, Korea Trade Statistics Promotion Institute (KTSPI) 2015-present, State Customs Committee of the Ukraine, Department of Statistics Malaysia, Japan Ministry of Finance, Statistics Canada, Direccion de Impuestos y Aduanas Nacionales de Colombia – DIAN, Hong Kong Census & Statistics Department, Ministry of Commerce, SECEX – Foreign Trade Secretariat, Statistics Norway, Australian Bureau of Statistics, Statistics New Zealand, Thai Customs Department, UN Comtrade, HS subheading 7202.92, accessed August 12, 2025.

Note: Official export data were not reported by Russia for 2022, 2023, and 2024, or the United Arab Emirates for 2024. Accordingly, those missing data were imputed using mirror data (i.e., imports reported by trading partners). Because of rounding, figures may not add to total shown. Zeroes, null values, and undefined calculations are suppressed and shown as "—".

APPENDIX A

FEDERAL REGISTER NOTICES

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

Citation	Title	Link
90 FR 28722 July 1, 2025	Initiation of Five-Year (Sunset) Reviews	https://www.govinfo.gov/content/pkg/FR-2025-07-01/pdf/2025-12052.pdf
90 FR 28774 July 1, 2025	Ferrovanadium From China and South Africa; Institution of Five-Year Reviews	https://www.govinfo.gov/content/pkg/FR-2025-07-01/pdf/2025-11838.pdf

APPENDIX B

RESPONSES TO THE NOTICE OF INSTITUTION

Responses to the Commission's notice of institution

Individual responses

The Commission received one submission in response to its notice of institution in the subject reviews. It was filed on behalf of the following three domestic interested parties:

1. Vanadium Producers and Reclaimers Association ("VPRA"), a trade or business association/coalition a majority of whose members manufacture, produce or wholesale ferrovanadium; [1] AMG Vanadium LLC ("AMG V"), which is a U.S. producer of a domestic like product; and U.S. Vanadium, LLC ("U.S. Vanadium"), which partners with a selling agent to wholesale domestically-produced ferrovanadium in the United States.

A complete response to the Commission's notice of institution requires that the responding interested party submit to the Commission all the information listed in the notice. Responding firms are given an opportunity to remedy or explain deficiencies in their responses and to provide clarifying details where appropriate. A summary of the number of responses and estimates of coverage for each is shown in table B.1.

Table B.1 Ferrovanadium: Summary of responses to the Commission's notice of institution

Interested party type	Number	Coverage
U.S. trade association of producers	1	***
U.S. producers	1	***

Note: The trade association and U.S. producer coverage figure presented is the same, as only one member of the association provided operational data and an estimate of its share of total U.S. production of ferrovanadium during 2024. Domestic interested parties' response to the notice of institution, July 31, 2025, exh. 1.

[1] VPRA lists its three members as AMG Vanadium LLC, U.S. Vanadium LLC, and Gladieux Metals Recycling. Domestic interested parties' response to the notice of institution, July 31, 2025, p. 1 and exh. 1.

Party comments on adequacy

The Commission received party comments on the adequacy of responses to the notice of institution and whether the Commission should conduct expedited or full reviews from the domestic interested parties. The domestic interested parties requested that the Commission conduct expedited reviews of the antidumping duty orders on ferrovanadium from China and South Africa.[2]

Company-specific information

Table B.2 Ferrovanadium: Response checklist for U.S. producers

Yes = provided response; no = did not provide a response; NA = not available; not known = information was not known

Item	AMG V (VPRA Member)
Nature of operation	Yes
Statement of intent to participate	Yes
Statement of likely effects of revoking the order	Yes
U.S. producer list	Yes
U.S. importer/foreign producer list	Yes
List of 3-5 leading purchasers	Yes
List of sources for national/regional prices	Yes
Trade/financial data	Yes
Changes in supply/demand	Yes
Complete response	Yes

[2] Domestic interested parties' comments on adequacy, September 10, 2025, p. 2.

APPENDIX C

SUMMARY DATA COMPILED IN PRIOR PROCEEDINGS

Table C-1
Ferrovanadium: Summary data concerning the U.S. market, 1999-2001, January-June 2001, and January-June 2002

(Quantity=1,000 pounds of contained vanadium; value=1,000 dollars, unit values, unit labor costs, and unit expenses are per pound; period changes=percent, except where noted)

Item	Reported data			January-June		Period changes			
	1999	2000	2001	2001	2002	1999-2001	1999-2000	2000-2001	Jan.-June 2001-2002
U.S. consumption quantity:									
Amount	12,965	13,012	11,891	6,260	6,370	-8.3	0.4	-8.6	1.8
Producers' share (1)	67.2	57.6	52.8	55.9	55.5	-14.5	-9.7	-4.8	-0.4
Importers' share (1):									
China	6.4	11.3	8.3	11.4	1.7	2.0	4.9	-2.9	-9.7
South Africa	11.4	8.1	20.8	14.9	6.4	9.4	-3.3	12.7	-8.5
Subtotal	17.8	19.4	29.2	26.3	8.1	11.3	1.6	9.7	-18.2
Other sources	15.0	23.0	18.1	17.8	36.4	3.1	8.1	-4.9	18.6
Total imports	32.8	42.4	47.2	44.1	44.5	14.5	9.7	4.8	0.4
U.S. consumption value:									
Amount	65,239	61,738	45,430	24,060	21,563	-30.4	-5.4	-26.4	-10.4
Producers' share (1)	67.0	57.6	52.2	55.7	56.8	-14.8	-9.6	-5.3	1.1
Importers' share (1):									
China	5.9	10.2	8.2	11.2	1.6	2.3	4.2	-1.9	-9.6
South Africa	10.7	9.0	21.1	15.2	6.9	10.4	-1.7	12.1	-8.3
Subtotal	16.6	19.1	29.3	26.4	8.5	12.7	2.5	10.2	-17.9
Other sources	16.3	23.3	18.4	17.9	34.7	2.1	7.0	-4.9	16.8
Total imports	33.0	42.4	47.8	44.3	43.2	14.8	9.5	5.3	-1.1
U.S. imports from:									
China:									
Quantity	826	1,469	992	712	109	20.1	77.8	-32.5	-84.7
Value	3,861	6,270	3,744	2,691	349	-3.0	62.4	-40.3	-87.0
Unit value	$4.67	$4.27	$3.78	$3.78	$3.20	-19.2	-8.7	-11.5	-15.3
Ending inventory quantity	***	***	***	***	***	***	***	***	***
South Africa									
Quantity	1,483	1,059	2,475	931	405	66.9	-28.6	133.8	-56.5
Value	6,991	5,536	9,588	3,659	1,479	37.1	-20.8	73.2	-59.6
Unit value	$4.72	$5.23	$3.87	$3.93	$3.65	-17.8	10.9	-25.9	-7.1
Ending inventory quantity	***	***	***	***	***	***	***	***	***
Subtotal:									
Quantity	2,309	2,528	3,466	1,644	514	50.1	9.5	37.1	-68.7
Value	10,852	11,806	13,333	6,350	1,829	22.9	8.8	12.9	-71.2
Unit value	$4.70	$4.67	$3.85	$3.86	$3.55	-18.2	-0.6	-17.7	-8.0
Ending inventory quantity	***	***	***	***	***	***	***	***	***
All other sources:									
Quantity	1,941	2,995	2,150	1,114	2,319	10.8	54.4	-28.2	108.2
Value	10,657	14,399	8,362	4,314	7,485	-21.5	35.1	-41.9	73.5
Unit value	$5.49	$4.81	$3.89	$3.87	$3.23	-29.2	-12.5	-19.1	-16.7
Ending inventory quantity	***	***	***	***	***	***	***	***	***
All sources:									
Quantity	4,249	5,523	5,617	2,758	2,834	32.2	30.0	1.7	2.8
Value	21,509	26,205	21,695	10,664	9,314	0.9	21.8	-17.2	-12.7
Unit value	$5.06	$4.74	$3.86	$3.87	$3.29	-23.7	-6.3	-18.6	-15.0
Ending inventory quantity	627	705	1,257	670	1,980	100.5	12.4	78.3	195.5

Table continued on next page.

Table C-1--Continued
Ferrovanadium: Summary data concerning the U.S. market, 1999-2001, January-June 2001, and January-June 2002

(Quantity=1,000 pounds of contained vanadium; value=1,000 dollars, unit values, unit labor costs, and unit expenses are per pound; period changes=percent, except where noted)

	Reported data					Period changes			
				January-June					Jan.-June
Item	1999	2000	2001	2001	2002	1999-2001	1999-2000	2000-2001	2001-2002
U.S. producers': (2)									
Average capacity quantity	***	***	***	***	***	***	***	***	***
Production quantity	***	***	***	***	***	***	***	***	***
Capacity utilization (1)	***	***	***	***	***	***	***	***	***
U.S. shipments:									
Quantity	8,716	7,489	6,274	3,502	3,536	-28.0	-14.1	-16.2	1.0
Value	43,730	35,533	23,735	13,396	12,249	-45.7	-18.7	-33.2	-8.6
Unit value	$5.02	$4.74	$3.78	$3.83	$3.46	-24.6	-5.4	-20.3	-9.4
Export shipments:									
Quantity	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***	***	***	***
Inventories/total shipments (1)	***	***	***	***	***	***	***	***	***
Production workers (3)	187	222	199	204	205	6.4	18.7	-10.4	0.5
Hours worked (1,000s) (3)	395	473	421	215	234	6.6	19.7	-11.0	8.8
Wages paid ($1,000s) (3)	7,937	9,525	8,718	4,359	4,804	9.8	20.0	-8.5	10.2
Hourly wages (3)	$20.09	$20.14	$20.71	$20.27	$20.53	3.1	0.2	2.8	1.3
Productivity (pounds per hour) (4)	***	***	***	***	***	***	***	***	***
Unit labor costs (4)	***	***	***	***	***	***	***	***	***
Net sales:									
Quantity	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Cost of goods sold (COGS)	***	***	***	***	***	***	***	***	***
Gross profit or (loss)	***	***	***	***	***	***	***	***	***
SG&A expenses	***	***	***	***	***	***	***	***	***
Operating income or (loss)	***	***	***	***	***	***	***	***	***
Capital expenditures	***	***	***	***	***	***	***	***	***
Unit COGS	***	***	***	***	***	***	***	***	***
Unit SG&A expenses	***	***	***	***	***	***	***	***	***
Unit operating income or (loss)	***	***	***	***	***	***	***	***	***
COGS/sales (1)	***	***	***	***	***	***	***	***	***
Operating income or (loss)/ sales (1)	***	***	***	***	***	***	***	***	***

(1) "Reported data" are in percent and "period changes" are in percentage points.

(2) Capacity and production data are for two firms: Bear and Shieldalloy. All other data are for Bear, Gulf, Shieldalloy, and USV. To avoid double-counting, U.S. shipments exclude Bear's reported shipments of toll-produced product. Instead, such shipments are reported as U.S. commercial shipments by the tollees.

(3) Includes data as reported by Gulf and USV for their production and related workers involved in the production of vanadium pentoxide.

(4) Calculated using data supplied by Bear and Shieldalloy only.

Note.--Financial data are reported on a fiscal year basis and may not necessarily be comperable to data reported on a calendar year basis. Because of rounding, figures may not add to the totals shown. Unit values and shares are calculated from the unrounded figures.

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

Table C-2
Ferrovanadium: Summary data for Bear and Shieldalloy, 1999-2001, January-June 2001, and January-June 2002

* * * * * * *

Table F-1 presents information on Bear's ferrovanadium tolling operations.

Table F-1
Ferrovanadium: Results of Bear's tolling operations, fiscal years 1999-2001, December 2000-May 2001, and December 2001-May 2002

* * * * * * *

As stated at the staff conference, Bear's business model does not envision competing with its suppliers of vanadium pentoxide for sales of ferrovanadium to downstream customers. Its own commercial sales account for a *** of its overall production and tolling of ferrovanadium, and its ***; also, Bear's operating results on its tolling ***. There are several reasons for this, including the ***.

As noted earlier, Bear receives vanadium pentoxide from its tolling partners and returns a ***[1] in the form of ferrovanadium. It does not take title to the vanadium contained within the vanadium pentoxide provided to it by its tolling partners. However, if ***, it is able to use or sell those excess vanadium units for its own purposes ***. Bear ***, and performs certain other services, including packing the ferrovanadium in bags marked with the company names of its tolling partners (such bags were shown at the staff conference). The tolling partners who actually sell the ferrovanadium in the commercial market arrange for shipment and delivery to their customers in the steel industry, and handle the billing and other paperwork related to the sale.

Table F-2 presents value-added ratios for each of the four firms separately and for Bear's tolling operations on behalf of Gulf and USV. The value-added calculation shows two ratios: (1) the sum of direct factory labor and factory overhead costs (conversion costs) to cost of goods sold (COGS), labeled Ratio A, and (2) conversion costs plus selling, general, and administrative expenses (SG&A) to the sum of COGS and SG&A, labeled Ratio B.

Table F-2
Ferrovanadium: Value-added ratios, by firm, 2001

* * * * * * *

Table F-3 presents the combined results of commercial operations on ferrovanadium of Shieldalloy and Bear, calculated from tables VI-3 and VI-5 (this presentation does not include data for Gulf, USV, or any tolling on their behalf by Bear). Table F-4 presents the consolidated results of commercial operations on ferrovanadium of Shieldalloy, Bear, and Gulf (in consolidating Bear with Gulf, Bear's tolling profit has been deducted from total COGS). Table F-5 presents combined results of commercial operations on ferrovanadium of Gulf and USV, including Bear's full tolling costs.

Table F-3
Ferrovanadium: Combined results of commercial operations of Bear and Shieldalloy, fiscal years 1999-2001, January-June 2001, and January-June 2002

* * * * * * *

[1] According to USV's tolling contract with Bear (attachment E to petitioners' posthearing brief), ***.

Table C-1
Ferrovanadium: Summary data concerning the U.S. market (with data for domestic producers/tollees) 2002-07, January-June 2007, and January-June 2008

(Quantity=1,000 pounds, value=1,000 dollars, unit values, unit labor costs, and unit expenses are per pound; period changes=percent, except where noted)

Item	Reported data								Period changes						
							January-June								Jan.-June
	2002	2003	2004	2005	2006	2007	2007	2008	2002-07	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08
U.S. consumption quantity:															
Amount	12,606	11,625	15,381	12,397	13,403	13,327	6,422	7,851	5.7	-7.8	32.3	-19.4	8.1	-0.6	22.3
Producers' share (1)	55.9	74.5	56.7	60.8	64.8	63.4	58.1	50.3	7.5	18.6	-17.8	4.1	4.0	-1.4	-7.8
Importers' share (1):															
China	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.9	-0.9	0.0	0.0	-0.0	-0.0	0.0
South Africa	3.5	0.0	0.0	0.0	0.0	0.1	0.0	0.0	-3.4	-3.5	0.0	0.0	0.0	0.1	0.0
Subtotal	4.4	0.0	0.0	0.0	0.0	0.1	0.0	0.0	-4.2	-4.4	0.0	0.0	-0.0	0.1	0.0
All other sources	39.8	25.5	43.3	39.2	35.2	36.5	41.9	49.7	-3.2	-14.3	17.8	-4.1	-4.0	1.3	7.8
Total imports	44.1	25.5	43.3	39.2	35.2	36.6	41.9	49.7	-7.5	-18.6	17.8	-4.1	-4.0	1.4	7.8
U.S. consumption value:															
Amount	47,903	57,676	158,693	363,381	240,344	199,156	101,683	210,509	315.7	20.4	175.1	129.0	-33.9	-17.1	107.0
Producers' share (1)	57.7	74.2	59.0	62.4	60.8	67.6	56.5	54.2	9.9	16.4	-15.2	3.5	-1.6	6.8	-2.2
Importers' share (1):															
China	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.7	-0.7	0.0	0.0	0.0	-0.0	0.0
South Africa	3.4	0.0	0.0	0.0	0.0	0.2	0.0	0.0	-3.3	-3.4	0.0	0.0	0.0	0.2	0.0
Subtotal	4.2	0.0	0.0	0.0	0.0	0.2	0.0	0.0	-4.0	-4.2	0.0	0.0	0.0	0.2	0.0
All other sources	38.1	25.8	41.0	37.5	39.1	32.2	43.5	45.8	-5.9	-12.3	15.2	-3.5	1.6	-6.9	2.2
Total imports	42.3	25.8	41.0	37.6	39.2	32.4	43.5	45.8	-9.9	-16.4	15.2	-3.5	1.6	-6.8	2.2
U.S. shipments of imports from:															
China:															
Quantity	109	0	0	1	1	0	0	0	-100.0	-100.0	(2)	(2)	0.0	-100.0	(2)
Value	349	0	0	16	24	0	0	0	-100.0	-100.0	(2)	(2)	50.0	-100.0	(2)
Unit value	$3.20	(2)	(2)	$16.00	$24.00	(2)	(2)	(2)	(2)	(2)	(2)	(2)	50.0	(2)	(2)
Ending inventory quantity	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
South Africa:															
Quantity	441	0	0	0	0	17	0	0	-96.1	-100.0	(2)	(2)	(2)	(2)	(2)
Value	1,644	0	0	0	0	350	0	0	-78.7	-100.0	(2)	(2)	(2)	(2)	(2)
Unit value	$3.73	(2)	(2)	(2)	(2)	$20.59	(2)	(2)	452.3	(2)	(2)	(2)	(2)	(2)	(2)
Ending inventory quantity	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Subtotal:															
Quantity	550	0	0	1	1	17	0	0	-96.9	-100.0	(2)	(2)	0.0	1600.0	(2)
Value	1,993	0	0	16	24	350	0	0	-82.4	-100.0	(2)	(2)	50.0	1358.3	(2)
Unit value	$3.62	(2)	(2)	$16.00	$24.00	$20.59	(2)	(2)	468.2	(2)	(2)	(2)	50.0	-14.2	(2)
Ending inventory quantity	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
All other sources:															
Quantity	5,011	2,964	6,664	4,859	4,718	4,866	2,691	3,905	-2.9	-40.9	124.8	-27.1	-2.9	3.1	45.1
Value	18,263	14,903	65,107	136,445	94,075	64,120	44,281	96,324	251.1	-18.4	336.9	109.6	-31.1	-31.8	117.5
Unit value	$3.64	$5.03	$9.77	$28.08	$19.94	$13.18	$16.46	$24.67	261.6	38.0	94.3	187.4	-29.0	-33.9	49.9
Ending inventory quantity	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
All sources:															
Quantity	5,561	2,964	6,664	4,860	4,719	4,883	2,691	3,905	-12.2	-46.7	124.8	-27.1	-2.9	3.5	45.1
Value	20,256	14,903	65,107	136,461	94,099	64,470	44,281	96,324	218.3	-26.4	336.9	109.6	-31.0	-31.5	117.5
Unit value	$3.64	$5.03	$9.77	$28.08	$19.94	$13.20	$16.46	$24.67	262.5	38.0	94.3	187.4	-29.0	-33.8	49.9
Ending inventory quantity	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
U.S. producers'/tollees':															
Average capacity quantity (3)	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Production quantity (3)	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Capacity utilization (1) (3)	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
U.S. shipments:															
Quantity	7,045	8,661	8,717	7,537	8,684	8,444	3,731	3,946	19.9	22.9	0.6	-13.5	15.2	-2.8	5.8
Value	27,647	42,773	93,586	226,920	146,245	134,686	57,402	114,185	387.2	54.7	118.8	142.5	-35.6	-7.9	98.9
Unit value	$3.92	$4.94	$10.74	$30.11	$16.84	$15.95	$15.39	$28.94	306.4	25.8	117.4	180.4	-44.1	-5.3	88.1
Export shipments:															
Quantity	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Inventories/total shipments (1)	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Production workers	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Hours worked (1,000s)	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Wages paid ($1,000)	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Hourly wages	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Productivity (lbs. per hour) (3)	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Unit labor costs	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Net sales:															
Quantity	7,413	9,063	8,638	7,240	8,053	7,554	3,864	4,175	1.9	22.3	-4.7	-16.2	11.2	-6.2	8.0
Value	29,060	44,889	94,195	216,944	137,221	122,259	61,329	119,756	320.7	54.5	109.8	130.3	-36.7	-10.9	95.3
Unit value	$3.92	$4.95	$10.90	$29.96	$17.04	$16.18	$15.87	$28.68	312.9	26.3	120.2	174.8	-43.1	-5.0	80.7
Cost of goods sold (COGS)	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Gross profit or (loss)	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
SG&A expenses	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Operating income or (loss)	(10,773)	(8,479)	21,453	102,547	31,925	986	932	31,207	(2)	21.3	(2)	378.0	-68.9	-96.9	3248.4
Capital expenditures	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Unit COGS	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Unit SG&A expenses	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Unit operating income or (loss)	($1.45)	($0.94)	$2.48	$14.16	$3.98	$0.13	$0.24	$7.47	(2)	35.6	(2)	470.3	-72.0	-96.7	2999.0
COGS/sales (1)	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Operating income or (loss)/ sales (1)	-37.1	-18.9	22.8	47.3	23.3	0.8	1.5	26.1	37.9	18.2	41.7	24.5	-24.0	-22.5	24.5

(1) "Reported data" are in percent and "period changes" are in percentage points.
(2) Not applicable.
(3) Data are for Bear and Metvan only.

Note.—Financial data are reported on a fiscal year basis and may not necessarily be comparable to data reported on a calendar year basis. Because of rounding, figures may not add to the totals shown. Unit values and shares are calculated from the unrounded figures.

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

Table C-2
Ferrovanadium: Summary data for producers Bear and Metvan, 2002-2007, January-June 2007 and January-June 2008

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Table C-1
Ferrovanadium: Summary data concerning the U.S. market, 2008-13, January to June 2013, and January to June 2014
(Quantity=1,000 pounds of contained vanadium; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per pound contained vanadium; Period changes=percent--exceptions noted)

	Reported data								Period changes						
	Calendar year						January-June		Calendar year						Jan-Jun
	2008	2009	2010	2011	2012	2013	2013	2014	2008-13	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
U.S. consumption quantity:															
Amount	14,902	8,632	13,401	14,190	15,638	15,312	7,996	8,514	2.8	(42.1)	55.2	5.9	10.2	(2.1)	6.5
Producers' share (fn1)	58.5	91.0	78.0	65.9	40.9	46.9	40.7	50.3	(11.6)	32.5	(13.0)	(12.1)	(25.0)	6.0	9.6
Importers' share (fn1):															
China	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	(0.0)	0.0	0.0	0.0
South Africa	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Subtotal, subject	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	(0.0)	0.0	0.0	0.1
All others sources	41.5	9.0	22.0	34.1	59.1	53.1	59.3	49.6	11.6	(32.5)	13.0	12.1	25.0	(6.0)	(9.7)
Total imports	41.5	9.0	22.0	34.1	59.1	53.1	59.3	49.7	11.6	(32.5)	13.0	12.1	25.0	(6.0)	(9.6)
U.S. consumption value:															
Amount	413,428	93,197	176,991	186,251	195,618	180,574	99,462	101,521	(56.3)	(77.5)	89.9	5.2	5.0	(7.7)	2.1
Producers' share (fn1)	60.2	86.1	75.9	64.1	42.3	48.5	42.4	50.6	(11.7)	25.9	(10.2)	(11.7)	(21.8)	6.2	8.3
Importers' share (fn1):															
China	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	(0.0)	0.0	0.0	0.0
South Africa	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Subtotal, subject	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	(0.0)	0.0	0.0	0.1
All others sources	39.8	13.9	24.1	35.9	57.7	51.5	57.6	49.2	11.7	(25.9)	10.2	11.7	21.8	(6.2)	(8.4)
Total imports	39.8	13.9	24.1	35.9	57.7	51.5	57.6	49.4	11.7	(25.9)	10.2	11.7	21.8	(6.2)	(8.3)
U.S. imports from:															
China:															
Quantity	0	0	1	0	0	0	0	0	fn2	fn2	fn2	(100.0)	fn2	fn2	fn2
Value	0	0	25	0	0	0	0	0	fn2	fn2	fn2	(100.0)	fn2	fn2	fn2
Unit value	---	---	22.35	---	---	---	---	---	fn2	fn2	fn2	(100.0)	fn2	fn2	fn2
Ending inventory quantity	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
South Africa:															
Quantity	0	0	0	0	0	0	0	11	fn2	fn2	fn2	fn2	fn2	fn2	fn2
Value	0	0	0	0	0	0	0	130	fn2	fn2	fn2	fn2	fn2	fn2	fn2
Unit value	---	---	---	---	---	---	---	12.19	fn2	fn2	fn2	fn2	fn2	fn2	fn2
Ending inventory quantity	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Subject:															
Quantity	0	0	1	0	0	0	0	11	fn2	fn2	fn2	(100.0)	fn2	fn2	fn2
Value	0	0	25	0	0	0	0	130	fn2	fn2	fn2	(100.0)	fn2	fn2	fn2
Unit value	---	---	22.35	---	---	---	---	12.19	fn2	fn2	fn2	(100.0)	fn2	fn2	fn2
Ending inventory quantity	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
All other sources:															
Quantity	6,180	777	2,952	4,840	9,237	8,125	4,739	4,219	31.5	(87.4)	279.8	63.9	90.8	(12.0)	(11.0)
Value	164,414	12,954	42,682	66,797	112,777	92,923	57,325	49,982	(43.5)	(92.1)	229.5	56.5	68.8	(17.6)	(12.8)
Unit value	26.61	16.66	14.46	13.80	12.21	11.44	12.10	11.85	(57.0)	(37.4)	(13.2)	(4.5)	(11.5)	(6.3)	(2.1)
Ending inventory quantity	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Total imports:															
Quantity	6,180	777	2,954	4,840	9,237	8,125	4,739	4,230	31.5	(87.4)	279.9	63.9	90.8	(12.0)	(10.7)
Value	164,414	12,954	42,707	66,797	112,777	92,923	57,325	50,113	(43.5)	(92.1)	229.7	56.4	68.8	(17.6)	(12.6)
Unit value	26.61	16.66	14.46	13.80	12.21	11.44	12.10	11.85	(57.0)	(37.4)	(13.2)	(4.6)	(11.5)	(6.3)	(2.1)
Ending inventory quantity	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
U.S. producers':															
Average capacity quantity	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Production quantity	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Capacity utilization (fn1)	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
U.S. shipments:															
Quantity	8,722	7,855	10,447	9,350	6,401	7,187	3,257	4,284	(17.6)	(9.9)	33.0	(10.5)	(31.5)	12.3	31.5
Value	249,014	80,243	134,284	119,454	82,841	87,651	42,137	51,408	(64.8)	(67.8)	67.3	(11.0)	(30.7)	5.8	22.0
Unit value	28.55	10.22	12.85	12.78	12.94	12.20	12.94	12.00	(57.3)	(64.2)	25.8	(0.6)	1.3	(5.8)	(7.2)
Export shipments:															
Quantity	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Inventories/total shipments (fn1)	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Production workers	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Hours worked (1,000s)	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Wages paid ($1,000)	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Hourly wages	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Productivity (pounds contained vanadium per hour)	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Unit labor costs	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
U.S. producers':															
Net sales:															
Quantity	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Cost of goods sold (COGS)	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Gross profit of (loss)	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
SG&A expenses	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Operating income or (loss)	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Capital expenditures	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Unit COGS	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Unit SG&A expenses	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Unit operating income or (loss)	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
COGS/sales (fn1)	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Operating income or (loss)/sales (fn1)	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
U.S. producers' and tollees':															
Net sales:															
Quantity	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Cost of goods sold (COGS)	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Gross profit of (loss)	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
SG&A expenses	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Operating income or (loss)	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Capital expenditures	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Unit COGS	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Unit SG&A expenses	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Unit operating income or (loss) (fn3)	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
COGS/sales (fn1)	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Operating income or (loss)/sales (fn1)	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***

Notes:

fn1.--Reported data are in percent and period changes are in percentage points.
fn2.--Undefined.
fn3.--Toller's operating income has been added to the U.S. producers' and tollees' operating income

Note.—Reported production and employment data are based on data submitted by U.S. producers (including toll production). U.S. shipment, inventory, and financial data include U.S. producers and tollee operations.

Source: Compiled from adjusted official commerce statistics and from data submitted in response to Commission questionnaires.

APPENDIX D

PURCHASER QUESTIONNAIRE RESPONSES

As part of their response to the notice of institution, interested parties were asked to provide a list of three to five leading purchasers in the U.S. market for the domestic like product. A response was received from domestic interested parties, and it provided contact information for the following five firms as top purchasers of ferrovanadium: ***. Purchaser questionnaires were sent to these five firms and four firms *** provided responses, which are presented below.

1. Have there been any significant changes in the supply and demand conditions for ferrovanadium that have occurred in the United States or in the market for ferrovanadium in China and/or South Africa since January 1, 2019?

Purchaser	Yes / No	Changes that have occurred
***	***	***
***	***	***
***	***	***
***	***	***

2. Do you anticipate any significant changes in the supply and demand conditions for ferrovanadium in the United States or in the market for ferrovanadium in China and/or South Africa within a reasonably foreseeable time?

Purchaser	Yes / No	Anticipated changes
***	***	***
***	***	***
***	***	***
***	***	***