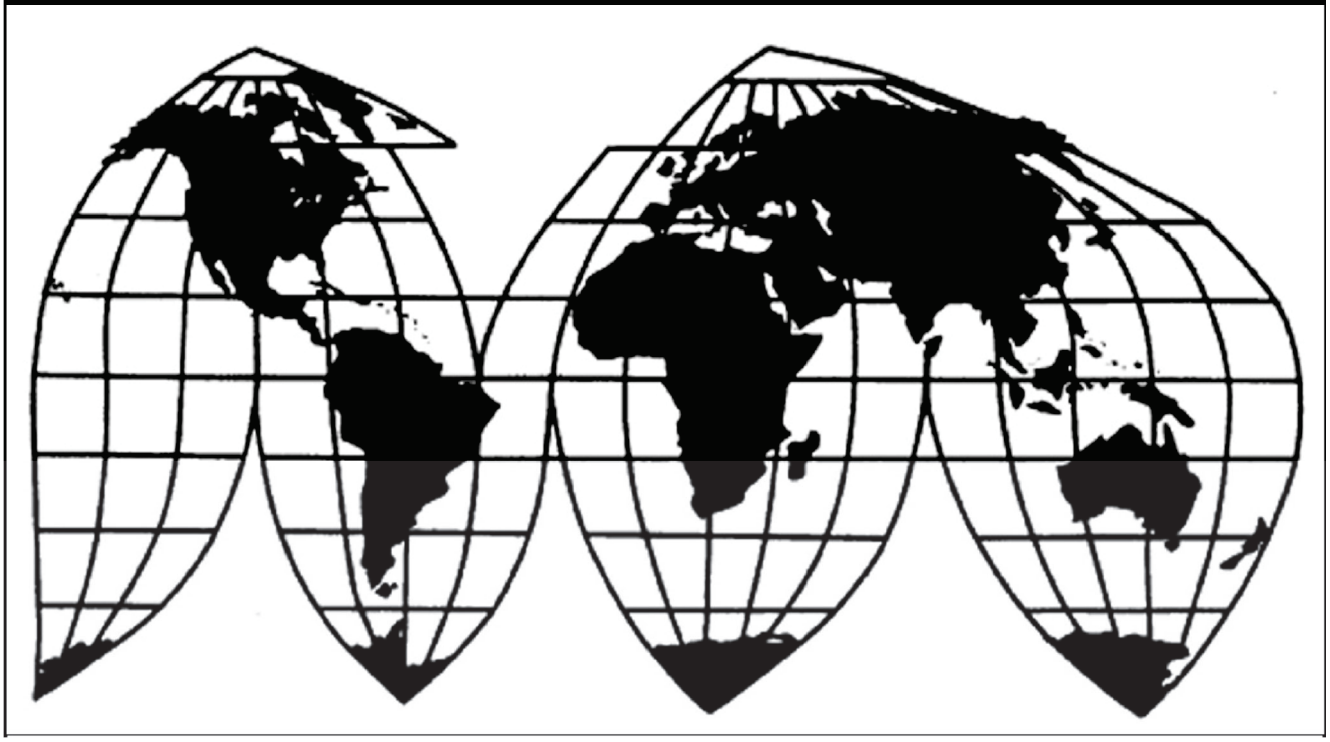
# High Chrome Cast Iron Grinding Media from India

Investigation No. 701-TA-726 and 731-TA-1694 (Final)

**Publication 5632** **June 2025**

## U.S. International Trade Commission



**Washington, DC 20436**

# U.S. International Trade Commission

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# U.S. International Trade Commission

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Note.—Information that would reveal confidential operations of individual firms may not be published.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

**UNITED STATES INTERNATIONAL TRADE COMMISSION**

Investigation Nos. 701-TA-726 and 731-TA-1694 (Final)

High Chrome Cast Iron Grinding Media from India

## DETERMINATIONS

On the basis of the record[1] developed in the subject investigations, the United States International Trade Commission ("Commission") determines, pursuant to the Tariff Act of 1930 ("the Act"), that an industry in the United States is materially injured by reason of imports of high chrome cast iron grinding media from India, provided for in subheading 7325.91.00 of the Harmonized Tariff Schedule of the United States, that have been found by the U.S. Department of Commerce ("Commerce") to be sold in the United States at less than fair value ("LTFV"), and imports of the subject merchandise from India that have been found to be subsidized by the government of India.[2]

## BACKGROUND

The Commission instituted these investigations effective April 26, 2024, following receipt of petitions filed with the Commission and Commerce by Magotteaux Inc., Franklin, Tennessee. The final phase of the investigations was scheduled by the Commission following notification of preliminary determinations by Commerce that imports of high chrome cast iron grinding media from India were subsidized within the meaning of section 703(b) of the Act (19 U.S.C. 1671b(b)) and sold at LTFV within the meaning of 733(b) of the Act (19 U.S.C. 1673b(b)). Notice of the scheduling of the final phase of the Commission's investigations and of a public hearing to be held in connection therewith was given by posting copies of the notice in the Office of the Secretary, U.S. International Trade Commission, Washington, DC, and by publishing the notice in the *Federal Register* on December 23, 2024 (89 FR 104560). The Commission conducted its hearing on April 24, 2025. All persons who requested the opportunity were permitted to participate.

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

[2] 90 FR 17577 (April 28, 2025); 90 FR 17575 (April 28, 2025).

## Views of the Commission

Based on the record in the final phase of these investigations, we determine that an industry in the United States is materially injured by reason of imports of high chrome cast iron grinding media ("HCCIGM") from India found by the U.S. Department of Commerce ("Commerce") to be sold in the United States at less than fair value ("LTFV") and subsidized by the government of India.

## I. Background

Magotteaux Inc. ("Petitioner"), the only domestic producer of high chrome cast iron grinding media ("HCCIGM"), filed the petitions in these investigations on April 26, 2024.[1] Petitioner appeared at the hearing with counsel and submitted written testimony and prehearing and posthearing briefs.[2]

Respondents AIA Engineering Limited ("AIA"), a producer and exporter of subject merchandise in India, and its affiliate Vega Industries Limited USA ("Vega"), a U.S. importer of subject merchandise from India, (collectively, "Respondents") appeared at the hearing with counsel and submitted written testimony and joint prehearing and posthearing briefs.[3] Holcim (US) Inc. ("Holcim"), a U.S. purchaser of subject merchandise from India, appeared at the hearing with counsel and submitted written testimony.

U.S. industry data are based on the questionnaire response of Petitioner, which accounted for all U.S. production of HCCIGM in 2024.[4] U.S. import data are based on questionnaire responses from five U.S. importers, representing virtually all U.S. imports of HCCIGM from India and *** percent of U.S. imports of HCCIGM from nonsubject sources during

[1] Confidential Report, Memorandum INV-XX-062 (May 13, 2025), *as modified by* Revision Memorandum INV-XX-067 (May 21, 2025) ("CR") at 1.1, 1.4; Public Report, *High Chrome Cast Iron Grinding Media from India*, Inv. Nos. 701-TA-726 & 731-TA-1694 (Final), USITC Pub. 5632 (June 2025) ("PR") at 1.1, 1.4.

[2] *Prehearing Brief of Magotteaux Inc.*, EDIS Doc. 848987 (Apr. 17, 2025) ("Petitioner's Prehearing Br."); *Posthearing Brief of Magotteaux Inc.*, EDIS Doc. 850182 (May 1, 2025) ("Petitioner's Posthearing Br.").

[3] *Pre-Hearing Brief of AIA Engineering Limited and Vega Industries Limited USA*, EDIS Doc. 848959 (Apr. 17, 2025) ("Respondents' Prehearing Br."); *Post-Hearing Brief of AIA Engineering Limited and Vega Industries Limited USA*, EDIS Doc. 850189 (May 1, 2025) ("Respondents' Posthearing Br.").

[4] CR/PR at 1.4, 3.1.

2024.[5] The Commission received responses to its questionnaires from one Indian producer and exporter of subject merchandise, which estimated that it accounted for *** percent of production of HCCIGM in India in 2024 and reported exports accounting for virtually all U.S. imports of HCCIGM from India in 2024.[6]

## II. Domestic Like Product

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

By statute, the Commission's "domestic like product" analysis begins with the "article subject to an investigation," *i.e.*, the subject merchandise as determined by Commerce.[10] Therefore, Commerce's determination as to the scope of the imported merchandise that is subsidized and/or sold at less than fair value is "necessarily the starting point of the Commission's like product analysis."[11] The Commission then defines the domestic like product in light of the imported articles Commerce has identified.[12] The decision regarding the

[5] CR/PR at 1.4.

[6] CR/PR at 7.3, Table 7.1 note.

[7] 19 U.S.C. § 1677(4)(A).

[8] 19 U.S.C. § 1677(4)(A).

[9] 19 U.S.C. § 1677(10).

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

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

[12] *Cleo*, 501 F.3d at 1298 n.1 ("Commerce's {scope} finding does not control the Commission's {like product} determination."); *Hosiden Corp. v. Advanced Display Mfrs.,* 85 F.3d 1561, 1568 (Fed. Cir. (Continued…)

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

### A. Scope Definition

Commerce defined the scope of the imported merchandise under investigation as follows:

> The scope of this investigation covers chrome cast iron grinding media in spherical (ball) or ovoid shape, with an alloy composition of seven percent or more (≥7 percent of total mass) chromium (Cr) content and produced through the casting method, with a nominal diameter of up to 127 millimeters (mm) and tolerance of plus or minus 10 mm. The products covered by the scope are currently classified under Harmonized Tariff Schedule of the United States (HTSUS) subheading 7325.91.0000. This HTSUS subheading is provided for

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1996) (the Commission may find a single like product corresponding to several different classes or kinds defined by Commerce); *Torrington Co. v. United States*, 747 F. Supp. 744, 748–52 (Ct. Int'l Trade 1990), *aff'd*, 938 F.2d 1278 (Fed. Cir. 1991) (affirming the Commission's determination defining six like products in investigations where Commerce found five classes or kinds).

[13] *See, e.g.*, *Cleo Inc. v. United States*, 501 F.3d 1291, 1299 (Fed. Cir. 2007); *NEC Corp. v. Dep't of Commerce*, 36 F. Supp. 2d 380, 383 (Ct. Int'l Trade 1998); *Nippon Steel Corp. v. United States*, 19 CIT 450, 455 (1995); *Torrington Co. v. United States*, 747 F. Supp. 744, 749 n.3 (Ct. Int'l Trade 1990), *aff'd*, 938 F.2d 1278 (Fed. Cir. 1991) ("every like product determination 'must be made on the particular record at issue' and the 'unique facts of each case'"). The Commission generally considers a number of factors, including the following: (1) physical characteristics and uses; (2) interchangeability; (3) channels of distribution; (4) customer and producer perceptions of the products; (5) common manufacturing facilities, production processes, and production employees; and, where appropriate, (6) price. *See Nippon*, 19 CIT at 455 n.4; *Timken Co. v. United States*, 913 F. Supp. 580, 584 (Ct. Int'l Trade 1996).

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

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

convenience and U.S. Customs purposes only. The written description of the scope is dispositive.[16]

HCCIGM are balls cast from a molten alloy of ferrochromium and steel scrap, containing 7 percent or more chromium by weight. They are used in ball mills to grind ore and other materials, predominantly in the mining and cement industries. Producers tailor the specific chemical composition and size of the HCCIGM to fit the customer's requirements and mill environment.[17]

### B. Arguments of the Parties

Petitioner argues that the Commission should define a single domestic like product consisting of HCCIGM coextensive with Commerce's scope, as it did in the preliminary phase of the investigations, and that the Commission should not expand the domestic like product to include forged grinding media or consider HCCIGM used in the cement industry as a separate like product.[18] Respondents do not contest the definition of the domestic like product, but assert that the Commission "should carefully consider the impact of {forged grinding media} on the market for HCCIGM as an important condition of competition."[19] [20]

### C. Analysis

Based on the record, we define a single domestic like product consisting of HCCIGM, coextensive with the scope.

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[16] *Certain High Chrome Cast Iron Grinding Media from India: Final Affirmative Determination of Sales at Less Than Fair Value*, 90 Fed. Reg. 17577 (Apr. 28, 2025); *Certain High Chrome Cast Iron Grinding Media from India: Final Affirmative Countervailing Duty Determination*, 90 Fed. Reg. 17575 (Apr. 28, 2025). The scope is the same in both the antidumping and countervailing duty final determinations, and Commerce has not revised the scope since the Commission's preliminary determinations. *Id.*

[17] CR/PR at 1.3, 1.6–1.9.

[18] Petitioner's Prehearing Br. at 1–16; Petitioner's Posthearing Br. at 1.

[19] Respondents' Prehearing Br. at 4.

[20] In the preliminary phase of the investigations, U.S. importer Molycop USA, LLC ("Molycop") argued that HCCIGM and forged grinding media were similar across most of the traditional domestic like product factors, and urged the Commission to explore in any final phase whether the domestic like product definition should include forged grinding media. *Molycop's Post-Conference Brief*, EDIS Doc. 822196 at 27–29 (May 22, 2024). However, Molycop did not subsequently comment on the Commission's draft questionnaires, appear at the Commission hearing, or make any submissions. In its questionnaire response, Molycop *** the petitions. CR/PR at Table E.1; Molycop's U.S. Producer Questionnaire at I-4.

In the preliminary phase of the investigations, the Commission defined a single domestic like product consisting of HCCIGM, coextensive with Commerce's scope of investigation. The Commission considered whether the definition of the domestic like product should include out-of-scope forged grinding media and low chrome cast iron grinding media ("LCCIGM").[21] Applying its traditional six-factor like product analysis, the Commission found that the limited evidence on the record indicated differences between HCCIGM and forged grinding media and LCCIGM with respect to most factors.[22] The Commission found that there was conflicting evidence as to whether there were clear dividing lines separating HCCIGM from forged grinding media and LCCIGM, but concluded that it was not persuaded that the domestic like product should be defined to include forged grinding media or LCCIGM.[23]

The Commission also analyzed whether HCCIGM used in the cement industry should be defined as a separate domestic like product from other HCCIGM.[24] The Commission observed that all HCCIGM share similarities with respect to most of the domestic like product factors, regardless of end use industry.[25] Although it recognized some differences between HCCIGM dedicated for certain end uses, such as limitations on interchangeability, the Commission determined that these types of differences were characteristic of products that exist on a continuum and did not establish a clear dividing line between HCCIGM used in the cement industry as opposed to other industries.[26]

In the final phase of the investigations, the Commission gathered questionnaire data with respect to the domestic like product issues, including information comparing HCCIGM to forged grinding media and LCCIGM.[27] No firm reported producing LCCIGM during the POI, and

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[21] *High Chrome Cast Iron Grinding Media from India*, Inv. Nos. 701-TA-726 & 731-TA-1694 (Preliminary), USITC Pub. 5518 at 9–14 (June 2024) ("*Preliminary Determinations*").

[22] *Preliminary Determinations*, USITC Pub. 5518 at 9–14.

[23] *Preliminary Determinations*, USITC Pub. 5518 at 11–12, 14.

[24] *Preliminary Determinations*, USITC Pub. 5518 at 15–17.

[25] *Preliminary Determinations*, USITC Pub. 5518 at 16.

[26] *Preliminary Determinations*, USITC Pub. 5518 at 16. In its comments on the final phase questionnaires, Holcim requested that the Commission collect separate data on HCCIGM used in the cement industry. *See Holcim's Comments on Draft Questionnaires*, EDIS Doc. 830338 (Aug. 22, 2024); CR/PR at 1.17. Holcim did not subsequently submit any briefs or make any domestic like product arguments. The record for the final phase contains no information that would warrant revisiting our preliminary determination with respect to this issue.

[27] The Commission's questionnaires asked responding firms to compare HCCIGM with forged grinding media and LCCIGM for each of the six domestic like product factors. CR/PR at 1.18 n.49. The Commission received responses from Petitioner, three forged grinding media producers, two U.S. importers (not counting two producers and one purchaser that also imported HCCIGM), and eight U.S. (Continued…)

there is no other evidence on the record indicating that LCCIGM is produced in the United States, which forecloses any inquiry into expanding the definition of the domestic like product to include LCCIGM.[28] Although forged grinding media is produced domestically, the evidence gathered in the final phase of the investigations confirms our finding in the preliminary phase that the domestic like product should not include forged grinding media.[29] Accordingly, we again define a single domestic like product consisting of HCCIGM, coextensive with the scope of the investigations.

## III. Domestic Industry

The domestic industry is defined as the domestic "producers as a whole of a domestic like product, or those producers whose collective output of a domestic like product constitutes a major proportion of the total domestic production of the product."[30] In defining the domestic

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purchasers (not counting one importer that also purchased HCCIGM). *Id.* at 2.3 & n.13, 3.1 & n.1, 4.1. Their responses are collected in appendix D of the staff report.

[28] *See* CR/PR at 3.1 n.2.

[29] With respect to physical characteristics and uses, a plurality of U.S. producers reported that HCCIGM and forged grinding media are mostly comparable, while most responding U.S. importers and purchasers reported the products are somewhat or never comparable. CR/PR at Table D.1. With respect to manufacturing facilities, production processes, and employees, all responding U.S. producers, importers, and purchasers reported that HCCIGM and forged grinding media are somewhat or never comparable. *Id.* With respect to channels of distribution, most responding U.S. producers and purchasers reported that HCCIGM and forged grinding media are fully or mostly comparable, while the two responding importers were split between rating the products as fully or somewhat comparable. *Id.* With respect to interchangeability, the four responding U.S. producers and two responding importers were each split evenly between rating HCCIGM and forged grinding media as mostly or somewhat comparable, while most U.S. purchasers reported that the products are never comparable. *Id.* With respect to producer and customer perceptions, the majority of responding U.S. producers and purchasers reported that HCCIGM and forged grinding media are somewhat or never comparable, while the lone responding U.S. importer rated the products as mostly comparable. *Id.* With respect to price, nearly all responding U.S. producers and purchasers reported that HCCIGM and forged grinding media are somewhat or never comparable, while the two responding U.S. importers were split between rating the products as mostly or somewhat comparable. *Id.*

Although the responses differed to varying degrees depending on the factor, the majority of responding firms found HCCIGM and forged grinding media to be only somewhat or never comparable with respect to all factors except for channels of distribution, which echoes the evidence in the preliminary phase. *See Preliminary Determinations*, USITC Pub. 5518 at 14. Because the additional evidence collected in the final phase reaffirms our analysis in the preliminary phase, and in absence of any contrary argument, we again find that the record does not support defining the domestic like product to include forged grinding media.

[30] 19 U.S.C. § 1677(4)(A).

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.

Petitioner argues that the Commission should define the domestic industry as including all U.S. producers of the domestic like product – namely, Petitioner, the only known domestic producer of HCCIGM.[31] Respondents do not contest the definition of the domestic industry, but assert that the Commission "should carefully examine the impact of other domestic producers of substitute {forged grinding media} products on Petitioner during the {period of investigation} as an important condition of competition."[32] There are no related party or other domestic industry issues in these investigations. Therefore, consistent with our definition of the domestic like product, we define the domestic industry as all domestic producers of HCCIGM.

## IV. Material Injury by Reason of Subject Imports[33]

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

### A. Legal Standard

In the final phase of antidumping and countervailing duty investigations, the Commission determines whether an industry in the United States is materially injured or threatened with material injury by reason of the imports under investigation.[34] In making this

[31] Petitioner's Prehearing Br. at 16.

[32] Respondents' Prehearing Br. at 4.

[33] Pursuant to Section 771(24) of the Tariff Act, imports from a subject country of merchandise corresponding to a domestic like product shall be deemed negligible if they account for less than 3 percent of all such merchandise imported into the United States during the most recent 12 months for which data are available preceding the filing of the petition. *See* 19 U.S.C. §§ 1677(24)(A)(i), 1671d(b)(1), 1673d(b)(1). The exceptions to the general three percent rule are not applicable to these investigations.

During the 12-month period preceding the filing of the petition (April 2023 to March 2024), subject imports from India accounted for *** percent of total imports of HCCIGM. CR/PR at Table 4.6. Because subject imports from India are above the statutory threshold, we find that imports of HCCIGM from India subject to the antidumping and countervailing duty investigations are not negligible.

[34] 19 U.S.C. §§ 1671d(b), 1673d(b).

determination, the Commission must consider the volume of subject imports, their effect on prices for the domestic like product, and their impact on domestic producers of the domestic like product, but only in the context of U.S. production operations.[35] The statute defines "material injury" as "harm which is not inconsequential, immaterial, or unimportant."[36] In assessing whether the domestic industry is materially injured by reason of subject imports, we consider all relevant economic factors that bear on the state of the industry in the United States.[37] No single factor is dispositive, and all relevant factors are considered "within the context of the business cycle and conditions of competition that are distinctive to the affected industry."[38]

Although the statute requires the Commission to determine whether the domestic industry is "materially injured or threatened with material injury by reason of" unfairly traded imports,[39] it does not define the phrase "by reason of," indicating that this aspect of the injury analysis is left to the Commission's reasonable exercise of its discretion.[40] In identifying a causal link, if any, between subject imports and material injury to the domestic industry, the Commission examines the facts of record that relate to the significance of the volume and price effects of the subject imports and any impact of those imports on the condition of the domestic industry. This evaluation under the "by reason of" standard must ensure that subject imports are more than a minimal or tangential cause of injury and that there is a sufficient causal, not merely a temporal, nexus between subject imports and material injury.[41]

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[35] 19 U.S.C. § 1677(7)(B). The Commission "may consider such other economic factors as are relevant to the determination" but shall "identify each {such} factor ... and explain in full its relevance to the determination." *Id.*

[36] 19 U.S.C. § 1677(7)(A).

[37] 19 U.S.C. § 1677(7)(C)(iii).

[38] 19 U.S.C. § 1677(7)(C)(iii).

[39] 19 U.S.C. §§ 1671d(b), 1673d(b).

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

[41] The Federal Circuit, in addressing the causation standard of the statute, observed that "{a}s long as its effects are not merely incidental, tangential, or trivial, the foreign product sold at less than fair value meets the causation requirement." *Nippon Steel Corp. v. USITC*, 345 F.3d 1379, 1384 (Fed. Cir. 2003). This was further ratified in *Mittal Steel Point Lisas Ltd. v. United States*, 542 F.3d 867, 873 (Fed. Cir. 2008), where the Federal Circuit, quoting *Gerald Metals, Inc. v. United States*, 132 F.3d 716, 722 (Fed. Cir. 1997), stated that "this court requires evidence in the record 'to show that the harm occurred "by reason of" the LTFV imports, not by reason of a minimal or tangential contribution to material harm

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In many investigations, there are other economic factors at work, some or all of which may also be having adverse effects on the domestic industry. Such economic factors might include nonsubject imports; changes in technology, demand, or consumer tastes; competition among domestic producers; or management decisions by domestic producers. The legislative history explains that the Commission must examine factors other than subject imports to ensure that it is not attributing injury from other factors to the subject imports, thereby inflating an otherwise tangential cause of injury into one that satisfies the statutory material injury threshold.[42] In performing its examination, however, the Commission need not isolate the injury caused by other factors from injury caused by unfairly traded imports.[43] Nor does the "by reason of" standard require that unfairly traded imports be the "principal" cause of injury or contemplate that injury from unfairly traded imports be weighed against other factors,

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caused by LTFV goods.'" *See also Nippon Steel Corp. v. United States*, 458 F.3d 1345, 1357 (Fed. Cir. 2006); *Taiwan Semiconductor Indus. Ass'n v. USITC*, 266 F.3d 1339, 1345 (Fed. Cir. 2001).

[42] *See* Uruguay Round Agreements Act, Statement of Administrative Action (SAA), H.R. Rep. No. 103-316, vol. I, at 851–52 (1994) ("{T}he Commission must examine other factors to ensure that it is not attributing injury from other sources to the subject imports."); S. Rep. No. 96-249 at 75 (1979) (the Commission "will consider information which indicates that harm is caused by factors other than the less-than-fair-value imports."); H.R. Rep. No. 96-317 at 47 (1979) ("in examining the overall injury being experienced by a domestic industry, the ITC will take into account evidence presented to it which demonstrates that the harm attributed by the petitioner to the subsidized or dumped imports is attributable to such other factors"; those factors include "the volume and prices of nonsubsidized imports or imports sold at fair value, contraction in demand or changes in patterns of consumption, trade restrictive practices of and competition between the foreign and domestic producers, developments in technology and the export performance and productivity of the domestic industry"); *accord Mittal Steel*, 542 F.3d at 877.

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

such as nonsubject imports, which may be contributing to overall injury to an industry.[44] It is clear that the existence of injury caused by other factors does not compel a negative determination.[45]

Assessment of whether material injury to the domestic industry is "by reason of" subject imports "does not require the Commission to address the causation issue in any particular way" as long as "the injury to the domestic industry can reasonably be attributed to the subject imports."[46] The Commission ensures that it has "evidence in the record" to "show that the harm occurred 'by reason of' the LTFV imports," and that it is "not attributing injury from other sources to the subject imports."[47] The Federal Circuit has examined and affirmed various Commission methodologies and has disavowed "rigid adherence to a specific formula."[48]

The question of whether the material injury threshold for subject imports is satisfied notwithstanding any injury from other factors is factual, subject to review under the substantial evidence standard.[49] Congress has delegated this factual finding to the Commission because of the agency's institutional expertise in resolving injury issues.[50]

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[44] S. Rep. No. 96-249 at 74–75; H.R. Rep. No. 96-317 at 47.

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

[46] *Mittal Steel*, 542 F.3d at 876, 878; *see also id.* at 873 ("While the Commission may not enter an affirmative determination unless it finds that a domestic industry is materially injured 'by reason of' subject imports, the Commission is not required to follow a single methodology for making that determination ... {and has} broad discretion with respect to its choice of methodology."), *citing U.S. Steel Grp. v. United States*, 96 F.3d 1352, 1362 (Fed. Cir. 1996) and S. Rep. No. 96-249 at 75. In its decision in *Swiff-Train Co. v. United States*, 793 F.3d 1355 (Fed. Cir. 2015), the Federal Circuit affirmed the Commission's causation analysis as comporting with the Court's guidance in *Mittal*.

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

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

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

[50] *Mittal Steel*, 542 F.3d at 873; *Nippon Steel Corp.*, 458 F.3d at 1350, *citing U.S. Steel Grp.*, 96 F.3d at 1357; S. Rep. No. 96-249 at 75 ("The determination of the ITC with respect to causation is ... complex and difficult, and is a matter for the judgment of the ITC.").

### B. Conditions of Competition and the Business Cycle

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

#### 1. Demand Conditions

U.S. demand for HCCIGM is largely driven by demand in the domestic mining and cement industries, and to a lesser degree by utility companies.[51] The HCCIGM customer base is concentrated to a limited number of purchasers.[52] Petitioner and one of three responding U.S. importers reported that overall U.S. demand for HCCIGM has fluctuated downward since January 1, 2022.[53] The two remaining U.S. importers and one of five responding U.S. purchasers reported that U.S. demand has steadily increased or fluctuated upward, while the four remaining purchasers reported that there had been no change in demand during the POI.[54]

Petitioner, all responding U.S. importers, and three of eight responding U.S. purchasers reported that demand for HCCIGM is subject to business cycles.[55] Petitioner reported that the HCCIGM purchases in the cement industry are somewhat seasonal, unlike in the mining industry, with about half of all sales of HCCIGM to cement customers taking place in the first quarter of the year.[56] Vega reported that demand for HCCIGM in the mining and cement industries is "***."[57] Molycop stated that demand for HCCIGM in the mining industry ***.[58]

[51] CR/PR at 1.7, 2.1, 2.8. During the POI, U.S. shipments of domestically produced HCCIGM to the mining industry ranged from *** to *** percent of total shipments in each year, while *** to *** percent went to the cement industry and *** to *** percent went to all other end users. *Id.* at Table 2.1. During the same period, U.S. shipments of subject imports to the mining industry ranged from *** to *** percent of total shipments, while *** to *** percent went to the cement industry and *** to *** percent went to all other end users. *Id.*

[52] CR/PR at 2.2. For example, approximately half of Petitioner's U.S. shipments in 2024 were to five customers, while just over half of Vega's U.S. shipments were to two customers. *Id.*

[53] CR/PR at Table 2.6. The Commission received questionnaire responses from one U.S. producer, Petitioner, and five U.S. importers, Ash Grove Cement ("Ash Grove"), Petitioner, Molycop, Teck Alaska Inc., and Vega. *Id.* at 4.1, Table 4.1.

[54] CR/PR at Table 2.6.

[55] CR/PR at 2.9.

[56] CR/PR at 2.9.

[57] CR/PR at 2.9.

[58] CR/PR at 2.9.

Apparent U.S. consumption of HCCIGM decreased from *** short tons in 2022 to *** short tons in 2023 and *** short tons in 2024, for an overall decrease of *** percent.[59]

### 2. Supply Conditions

The vast majority of HCCIGM sold in the U.S. market is supplied by Petitioner and U.S. importer Vega.[60] Petitioner was the *** supply source for the U.S. market during the POI.[61] Its share of apparent U.S. consumption increased from *** percent in 2022 to *** percent in 2023, and then decreased to *** percent in 2024, for an overall increase of *** percentage points.[62] As the only U.S. producer of HCCIGM, Petitioner accounted for 100 percent of domestic HCCIGM production throughout the POI.[63]

Petitioner did not report supply constraints during the POI, but it reported that it ***, due to declines in its U.S. shipments.[64] Three of nine responding purchasers reported that Petitioner had supply constraints in 2022 and one reported such constraints in 2023 – no purchaser reported domestic industry supply constraints in 2024.[65] Specifically, U.S. purchaser Holcim reported that ***.[66] Holcim, however, reported that improvements in Petitioner's lead times in 2023 led to it ***.[67] Petitioner's practical production capacity remained flat during the POI at *** short tons.[68] Its practical capacity utilization rate decreased from *** percent in 2022 to *** percent in 2023, and then increased to *** percent in 2024, for an overall increase of *** percentage points.[69]

Subject imports were the *** supply source for the U.S. market during the POI.[70] Subject imports' share of apparent U.S. consumption increased from *** percent in 2022 to *** percent in 2023, and then decreased to *** percent in 2024, for an overall decrease of ***

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[59] CR/PR at Tables 4.7 & C.1.
[60] CR/PR at 2.2.
[61] CR/PR at Tables 4.7 & C.1.
[62] CR/PR at Tables 4.7 & C.1.
[63] CR/PR at 1.4, 3.1.
[64] CR/PR at Tables 2.5 & 3.3. Petitioner also reported that it ***. *Id.* at Table 3.3. Petitioner reported that the "{d}ecreased earnings and the lack of stability {resulting from the production curtailments} have caused many of our employees in Tennessee to seek other opportunities." Hearing Tr. at 32 (Habermann).
[65] CR/PR at Table 2.5.
[66] CR/PR at 2.8 n.20.
[67] CR/PR at 2.8 n.20.
[68] CR/PR at Tables 3.4 & C.1.
[69] CR/PR at Tables 3.4 & C.1.
[70] CR/PR at Tables 4.7 & C.1.

percentage points.[71] Subject producer and exporter AIA accounted for virtually all U.S. imports of HCCIGM from India in 2024, and its related importer Vega accounted for the vast majority of subject imports in 2024.[72]

Nonsubject imports were the *** supply source for the U.S. market during the POI.[73] Their share of apparent U.S. consumption decreased from *** percent in 2022 to *** percent in 2023, and then increased to *** percent in 2024, for an overall decrease of *** percentage points.[74] Sources of nonsubject imports during the POI were ***.[75]

### 3. Substitutability and Other Conditions

We find that there is a high degree of substitutability between domestically produced HCCIGM and subject imports. Petitioner, all responding U.S. importers, and six of eight responding purchasers reported that the domestic like product and subject imports are always or frequently interchangeable, while the remaining two purchasers reported that the domestic like product and subject imports were sometimes interchangeable.[76] A majority of responding purchasers reported that the domestic like product is comparable to subject imports with respect to 13 of 15 non-price purchasing factors.[77] Petitioner, one of three responding U.S. importers, and three of eight responding purchasers reported that differences other than price are only sometimes or never significant.[78] In contrast, the remaining importers (two) and purchasers (five) reported that differences other than price are always or frequently significant.[79] HCCIGM are generally produced to customer specifications, and customers often require producers to undergo a qualification process before making any purchases of

[71] CR/PR at Tables 4.7 & C.1.

[72] CR/PR at Tables 4.1 & 7.1.

[73] CR/PR at Tables 4.7 & C.1.

[74] CR/PR at Tables 4.7 & C.1.

[75] CR/PR at 2.7. *** accounted for all nonsubject imports during the POI. *Id.*

[76] CR/PR at Table 2.14.

[77] CR/PR at Table 2.13. For the two remaining factors, three purchasers rated the U.S. product as superior to subject imports with respect to delivery time, four purchasers rated the products as comparable, and one rated the U.S. product as inferior, while three purchasers rated the U.S. product as superior to subject imports with respect to technical support/service, three purchasers rated the products as comparable, and two purchasers rated the U.S. product as inferior. *Id.*

[78] CR/PR at Table 2.15.

[79] CR/PR at Table 2.15. Of firms that reported significant differences other than price, importers cited availability, long-term relationships, technical support, lead times, product lines, and quality, while purchasers cited availability, lead times, quality, and delivery times. *Id.* at 2.18.

HCCIGM.[80] All purchasers with knowledge of domestically produced HCCIGM and subject imports reported that producers in the United States and India always meet minimum quality specifications.[81] Petitioner and Vega reported sales to overlapping purchasers.[82]

The record indicates that price is an important factor in purchasing decisions for HCCIGM, among other important factors. Of the nine responding purchasers, all ranked price within their top three purchasing factors, seven ranked quality within their top three purchasing factors, and six ranked availability/supply within their top three purchasing factors.[83] Quality was most frequently rated as the first-most important purchasing factor, and price was most frequently rated as the second-most import purchasing factor.[84] Eight of nine responding purchasers reported that price was a very important purchasing factor, while the remaining purchaser reported that price was a somewhat important purchasing factor.[85]

In 2024, *** percent of Petitioner's sales of HCCIGM were sold through short-term contracts, *** percent were sold on a spot basis, and the remainder were sold through annual or long-term contracts.[86] Petitioner reported that ***.[87] Petitioner also reported that ***.[88] In 2024, *** percent of importer Vega's sales of subject merchandise were through short-term contracts, *** percent were through long-term contracts, and the remainder were spot sales.[89] Vega reported ***.[90]

The record indicates that HCCIGM are primarily produced to order. Petitioner reported that the vast majority (*** percent) of its commercial shipments of HCCIGM in 2024 were produced to order, with lead times averaging *** days, and the remaining *** percent of its

[80] CR/PR at 2.13–2.15.

[81] CR/PR at Table 2.11.

[82] CR/PR at 2.2, Table 5.15. In response to the Commission's questionnaires, Petitioner and Vega provided lists of their top ten customers. *** firms appeared on both lists: ***. *Id.* at 2.4. *** firms on Petitioner's list of top ten customers *** buying large volumes of subject imports, and these purchasers accounted for *** percent of Petitioner's U.S. shipments in 2024. Petitioner's U.S. Producer Questionnaire at IV-22; CR/PR at Table 5.15. In total, seven of nine responding purchasers reported purchasing both subject imports and the domestic like product during the POI. CR/PR at Table 5.15. Petitioner also reported ***. *See* Petitioner's Posthearing Br., Exhibit 2.

[83] CR/PR at Table 2.8.

[84] CR/PR at Table 2.8.

[85] CR/PR at Table 2.9. Purchasers most frequently rated availability and price as very important purchasing factors. *Id.*

[86] CR/PR at Table 5.3.

[87] CR/PR at 5.4.

[88] CR/PR at 5.4.

[89] CR/PR at Table 5.3.

[90] CR/PR at 5.4, 5.25, Table 5.17.

commercial shipments came from inventories, with lead times averaging *** days.[91] Importer Vega reported that a large majority (*** percent) of its commercial shipments of HCCIGM in 2024 were produced to order, with lead times averaging *** days, and the remaining *** percent of its commercial shipments came from inventories, with lead times averaging *** days.[92]

Raw materials used in the production of HCCIGM include ferrochrome and steel scrap.[93] The price of ferrochrome decreased irregularly over the POI, increasing by *** percent from January 2022 to its peak in June 2022 and then decreasing by *** percent through December 2024, for an overall decrease of ***.[94] The price of steel scrap fluctuated within a narrow range over the POI, increasing by *** percent from January 2022 to its peak in March and April 2022 and then decreasing by *** percent through December 2024, for an overall decrease of *** percent.[95] Raw material costs accounted for between *** and *** percent of Petitioner's COGS during the POI.[96] In 2024, Petitioner reported that ferrochrome comprised *** percent of its total raw materials costs, stainless steel and other steel scrap comprised *** percent, and other raw materials comprised *** percent.[97]

Two responding U.S. importers and four of nine U.S. purchasers identified forged grinding media as a substitute for HCCIGM.[98] Respondents argue that increased demand for forged grinding media during the POI could explain the reduced apparent U.S. consumption for HCCIGM, as well as Petitioner's declining shipments, during that period.[99] However, the record – including the responses from Petitioner and Respondents – indicates that customers rarely

[91] CR/PR at 2.13–2.14.

[92] CR/PR at 2.14.

[93] CR/PR at 5.1.

[94] CR/PR at Table 5.1, Figure 5.1. In November 2023, the price of ferrochrome dropped below its price in January 2022 and remained below through the end of the POI. *Id.*

[95] CR/PR at Table 5.1, Figure 5.1. Steel scrap prices were below the January 2022 price between July 2022 and February 2023 and from May 2023 through the end of the POI. *Id.*

[96] CR/PR at Table 6.1.

[97] CR/PR at 5.1 & Table 6.3.

[98] CR/PR at 2.10.

[99] Respondents' Prehearing Br. at 3–4, 11–13, 15–21, 24–26; Respondents' Posthearing Br. at 5–6, 8, 10, 11, Responses to Commission Questions, at 16–18, 20–21; Respondents' Final Comments at 2, 8, 10. Contrastingly, at the preliminary conference and in Vega's response to the Commission's final phase U.S. importer questionnaire, Respondents reported that mining customers switching from forged grinding media to HCCIGM increased demand for HCCIGM. CR/PR at 2.11 & n.33; Vega's U.S. Importer Questionnaire at III-14; *see also* CR/PR at 2.9 (citing Hearing Tr. at 156, 159, 162 (Jacobson), 160–161 (Shah)); Respondents' Posthearing Br., Responses to Commission Questions, at 25.

switch from HCCIGM to other types of grinding media, including forged grinding media.[100] Indeed, there is evidence of only one U.S. purchaser, ***, switching from HCCIGM to forged grinding media during the POI, which is not portrayed as a successful transition.[101] *** switched from HCCIGM to forged grinding media ***.[102] *** reported that ***.[103] *** returned to purchasing HCCIGM ***.[104] Furthermore, although customers in the cement industry can theoretically use forged grinding media in their operations instead of HCCIGM, in practice most customers in the cement industry use HCCIGM.[105] The two responding purchasers in the cement industry in these investigations (*** and ***) reported either explicitly or implicitly that they cannot use forged grinding media at all.[106] Cement producers represent about *** of the U.S. market.[107]

Effective March 12, 2025, subject imports from India became subject to an additional 25 percent *ad valorem* duty under section 232 of the Trade Expansion Act of 1962.[108]

### C. Volume of Subject Imports

Section 771(7)(C)(i) of the Tariff Act provides that the "Commission shall consider whether the volume of imports of the merchandise, or any increase in that volume, either in absolute terms or relative to production or consumption in the United States, is significant."[109]

The volume of subject imports decreased from *** short tons in 2022 to *** short tons in 2023 and *** short tons in 2024, for an overall decrease of *** percent during the POI.[110]

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[100] CR/PR at 2.10.

[101] CR/PR at 2.10–2.11.

[102] CR/PR at 2.10–2.11 & n.30.

[103] CR/PR at 2.11 n.30.

[104] CR/PR at 2.11 & n.30. *** reported that HCCIGM lasts approximately twice as long as forged grinding media, which means that purchasers must store and handle twice the volume of grinding media when using forged grinding media instead of HCCIGM. *Id.* at 2.11 n.30, Table E.7 note, Table J.1 note.

[105] CR/PR at 2.11. Cement producer Holcim reported, "{F}orged grinding media is used in the cement industry for very limited application and only where the grinding mill technology permits." *Id.*

[106] *** reported, "***." CR/PR at Table D.5. *** reported, "***." ***'s U.S. Purchaser Questionnaire at VI-1.

[107] CR/PR at Table 2.1.

[108] CR/PR at 1.6.

[109] 19 U.S.C. § 1677(7)(C)(i).

[110] CR/PR at Tables 4.2 & 4.3. The volume of subject imports decreased *** percent from 2022 to 2023 and *** percent from 2022 to 2023. *Id.*

As previously noted, subject imports were the *** supply source for the U.S. market during the POI. *Id.* at Tables 4.7 & C.1. U.S. importers' U.S. shipments of subject imports decreased from *** short

(Continued…)

Subject imports as a share of apparent U.S. consumption increased from *** percent in 2022 to *** percent in 2023 and decreased to *** percent in 2024, for an overall decrease of *** percentage points over the POI.[111] The ratio of subject imports to domestic production increased from *** percent in 2022 to *** percent in 2023 and decreased to *** percent in 2024, for an overall decrease of *** percentage points.[112]

We conclude that the volume of subject imports is significant, both in absolute terms and relative to production and consumption in the United States.[113]

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(…Continued)
tons in 2022 to *** short tons in 2023 and *** short tons in 2024, for an overall decrease of *** percent over the POI. *Id.* The volume of U.S. shipments of subject imports decreased *** percent from 2022 to 2023 and *** percent from 2023 to 2024. *Id.*

[111] CR/PR at Tables 4.7 & C.1.

[112] CR/PR at Tables 4.2 & 4.3.

[113] In a final phase investigation, the statute requires the Commission to consider whether changes in the volume, price effects, or impact of subject imports are related to the pendency of the investigation. 19 U.S.C. § 1677(7)(I). If the Commission determines that such changes are related to the pendency of the investigation, it has the discretion under the statute to reduce the weight accorded to such information. *Id.* In these investigations, Petitioner argues that the filing of the petitions on April 26, 2024, resulted in lower subject import volume and market share in May through December 2024 compared to the beginning of the POI through April 2024. Petitioner's Posthearing Br., Answers to Commissioner Questions, at 9–11; Hearing Tr. at 41, 48–49 (Drake). Respondents contend that the filing of the petitions had no effect on the declining subject import volume or market share, arguing that the monthly volumes of subject imports in 2024 followed the same cyclical pattern observed in 2022 and 2023. Respondents' Posthearing Br., Responses to Commission Questions, at 27–28; Respondents' Final Comments at 8–9. They also argue that, with the filing date in late April, the subject import volume data would not reflect any post-petition effects in May 2024 because of the time required for ocean transit. Respondents' Final Comments at 9.

Monthly subject import data for our analysis of this issue are based on official Commerce statistics for HTS statistical reporting number 7325.91.0000, which covers grinding balls and similar articles for mills, cast of iron or steel, other than nonmalleable cast iron. CR/PR at Table G.2 & note. Although the definition for this HTS number covers both in-scope and out-of-scope merchandise, the record indicates that virtually all products imported from India under this number during the POI were HCCIGM. *Compare id.* at Table G.2, *with id.* at Table 4.2.

We find that there is evidence that the decreases in subject import volume and market share in 2024 are in part related to the pendency of the investigations. Although the decline in subject imports began in 2023, the rate of the decline accelerated in 2024, the only year in which subject imports lost market share. *Id.* at Tables 4.2, 4.7 & C.1. The decline in subject import volume from 2022 to 2023 can be explained by declining apparent U.S. consumption, but the accelerated decline in such imports from 2023 to 2024 cannot because apparent U.S. consumption was *** during that period. *Id.* at Tables 4.7 & C.1. Monthly import data show that the 2024 decline largely occurred after the filing of the petitions in April. The total volume of subject imports in May to December 2024 was 3,682 short tons (or 17.2 percent) lower than the volume in May to December 2023, while the total volume in May to December
(Continued…)

### D. Price Effects of the Subject Imports

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

> (I) there has been significant price underselling by the imported merchandise as compared with the price of domestic like products of the United States, and
>
> (II) the effect of imports of such merchandise otherwise depresses prices to a significant degree or prevents price increases, which otherwise would have occurred, to a significant degree.[114]

As stated above, we find that there is a high degree of substitutability between subject imports and domestically produced HCCIGM and that price is an important factor in purchasing decisions, among other important factors.

The Commission collected quarterly pricing data from the U.S. producer and importers for six pricing products shipped to unrelated customers during the POI.[115] Petitioner and U.S.

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(…Continued)
2023 was 3,028 short tons (or 12.4 percent) lower than the volume in May to December 2022. *Calculated from id.* at Table G.2. In contrast, although the total volume of subject imports in January to April 2023 was 2,232 short tons (or 25.0 percent) lower than the volume in January to April 2022, the total volume in January to April 2024 was 2,612 short tons (or 39.0 percent) higher than the volume in January to April 2023. *Id.* These trends are similar even when assuming that any post-petition effects did not occur in May 2024, as Respondents claim.

In recognizing Respondents' claim that subject imports spiked in the summer of each year of the POI, the record shows that the increase in subject imports from the January–April period to the May–December period in 2024 (8,393 short tons or 90.2 percent) was substantially smaller than the increase between those periods in 2022 (15,483 short tons or 173.5 percent) and in 2023 (14,687 short tons or 219.5 percent). *Id.* Further, 2024 was the only year during the POI in which the average monthly imports from January to April (2,326 short tons) exceeded the average monthly imports from May to December (2,212 short tons). *Id.*

In view of the above, we take note that subject import volumes after the filing of the petitions were lower than they otherwise would be due to the pendency of the investigations.

[114] 19 U.S.C. § 1677(7)(C)(ii).

[115] The pricing products are as follows:

> ***Product 1.***-- Cast iron grinding media with a nominal diameter of 50mm (+/-3 mm) and chrome content between 18.5 and 22 percent.
>
> ***Product 2.***-- Cast iron grinding media with a nominal diameter of 40mm (+/-3 mm) and chrome content between 18.5 and 22 percent.
>
> ***Product 3.***-- Cast iron grinding media with a nominal diameter of 25mm (+/-3 mm) and chrome content between 10 and 13.5 percent.

(Continued…)

importer Vega provided usable pricing data for sales of the requested products, although not all firms reported pricing for all products for all quarters.[116] Pricing data reported by these firms accounted for *** percent of U.S. shipments of domestically produced HCCIGM and *** percent of U.S shipments of subject imports in 2024.[117]

The pricing data show pervasive underselling by subject imports. Subject imports undersold domestically produced HCCIGM in 54 of 63 quarterly comparisons, or 85.7 percent of the time, at margins ranging from *** to *** percent and averaging *** percent.[118] There were *** short tons of reported subject import sales in quarters of underselling, equal to *** percent of the total volume of reported sales of subject imports covered by the Commission's pricing data during the POI.[119] Subject imports oversold domestically produced HCCIGM in nine

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(…Continued)

***Product 4.***-- Cast iron grinding media with a nominal diameter of 90mm (+/-3 mm) and chrome content between 15.5 and 19 percent.

***Product 5.***-- Cast iron grinding media with a nominal diameter of 40mm (+/-3 mm) and chrome content between 25 and 28 percent.

***Product 6.***-- Cast iron grinding media with a nominal diameter of 80mm (+/-3 mm) and chrome content between 16 and 19 percent.

CR/PR at 5.6.

Respondents argue that the chromium content ranges of pricing products 1 through 4 are overly broad, resulting in the data for each pricing product consisting of a wide range of prices. Respondents' Prehearing Br. at 40–43; Hearing Tr. at 143–44, 180–81 (Jacobson). These arguments echo their comments on the draft final phase questionnaires that led the Commission to narrow the chromium content ranges of pricing products 1–4 and add pricing products 5–6 for the final phase of the investigations. *Compare Respondents' Comments on Draft Questionnaires* at 2, EDIS Doc. 830356 (Aug. 22, 2024), *and Preliminary Determinations*, USITC Pub. 5518 at 26 n.208, *with* CR/PR at 5.6. While Respondents contend that their pricing products are more reflective of AIA's products in the U.S. market, counsel for Respondents was not even sure what the data would show with Respondents' proposed pricing products but guessed "closer to pricing parity" between subject imports and the domestic like product. Hearing Tr. at 144 (Jacobson). Furthermore, Respondents' contention that Commission staff engaged in "private correspondence" that made the process unfair for them, Respondents' Prehearing Br. at 41–43; Hearing Tr. at 143, 180 (Jacobson), fails to recognize that Respondents could have requested leave to comment after the subject correspondence (an email exchange) was posted on EDIS on December 26, 2024, and before the questionnaires were issued on January 24, 2025. *See Questionnaire Transmittal Letter*, EDIS Doc. 841728 (Jan. 24, 2025). The correspondence in question was limited to the Commission obtaining Petitioner's view on the feasibility of Respondents' proposed changes to the pricing product definitions. *See Email to Petitioner's Counsel*, EDIS Doc. 840058 (Oct. 23, 2024).

[116] CR/PR at 5.6.

[117] CR/PR at 5.6.

[118] CR/PR at Table 5.13.

[119] CR/PR at Table 5.13.

of 63 quarterly comparisons, or 14.3 percent of the time, at margins ranging from *** to *** percent and averaging *** percent.[120] There were *** short tons of reported subject import sales in quarters of overselling, equal to *** percent of the total volume of reported sales of subject imports.[121]

We have also considered responses to the Commission's U.S. purchaser questionnaires concerning lost sales. Six of nine responding purchasers reported that they had purchased subject imports instead of domestically produced HCCIGM, and four of those purchasers reported that the price of subject imports was lower than the price of the domestic product.[122] Of those four purchasers, two reported that price was a primary reason for their decision to purchase *** short tons of subject imports rather than the domestic like product.[123] These lost sales are equivalent to *** percent of responding purchasers' reported purchases of subject imports, *** percent of importers' U.S. shipments of subject imports, and *** percent of Petitioner's U.S. shipments during the POI.[124] The confirmed lost sales totaled *** short tons in 2022, *** short tons in 2023, and *** short tons in 2024.[125]

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[120] CR/PR at Table 5.13.

[121] CR/PR at Table 5.13. We observe that three of the nine quarters of overselling occurred in the third or fourth quarters of 2024 after the filing of the petitions. *See id.* at Tables 5.6–5.7 & 5.9.

[122] CR/PR at Table 5.16.

[123] CR/PR at Table 5.16. The two purchasers that reported purchasing low-priced subject imports instead of the domestic like product with price a primary reason are *** and ***, two of Petitioner's top customers. *Id.* at 2.2. In 2024, *** was the largest purchaser of HCCIGM from Petitioner and *** was the third largest, accounting for *** and *** percent of Petitioner's sales, respectively. *Id.* *** acknowledged that it benefits from the price competition between Petitioner and Vega, as exemplified by the domestic share of ***'s purchases declining by *** percentage points over the POI while subject imports increased as a share of ***'s purchases by the same amount. *Id.* at Tables 5.15 & 5.17. The domestic share of ***'s purchases increased by *** percentage points over the POI, but its total purchases of subject imports were nonetheless higher than its purchases of the domestic like product during the period. *Id.* at Table 5.15.

[124] CR/PR at Tables 4.7, 5.15–5.16 & C.1. These lost sales also are equivalent to *** percent of total apparent U.S. consumption over the POI. *Id.*

[125] *Calculated from* ***'s and ***'s U.S. Purchaser Questionnaires at II-1, II-3. We note that *** and *** reported quantities of confirmed lost sales that *** their purchases of subject imports during the POI. *See id.*; CR/PR at Tables 5.15–5.16. We observe that the reported purchases of subject imports by *** and *** amount to *** short tons instead of the reported *** short tons of confirmed lost sales. *See id.* This discrepancy resulted from *** reporting a total of lost sales over the POI in an amount larger than the sum of its annual purchases of subject imports. *Compare* ***'s U.S. Purchaser Questionnaire at II-1, *with id.* at II-3(c). *** did not explain the conflicting data, but it confirmed that the figures are accurate. CR/PR at 5.24 n.10. We find that the lost sales during the POI are significant whether they total *** or *** short tons, and the difference in these figures does not affect our conclusions.

Given the high substitutability between subject imports and the domestic like product, the importance of price in purchasing decisions, the frequency and volume of underselling, and the evidence that Petitioner lost significant sales on the basis of price, we find that there has been significant underselling by subject imports during the POI.

As subject imports pervasively undersold the domestic like product throughout the POI, subject imports remained the dominant source of supply in the U.S. market. Subject imports' presence in the U.S. market during the POI reflects their large increase in volume and market share that occurred prior to the POI from 2021 to 2022 as subject imports increased *** percent and gained *** percentage points of market share, *** percentage points of which came at the direct expense of the domestic industry.[126] [127] We find that the underselling during

[126] The Commission normally focuses its analysis in antidumping and countervailing duty investigations on a three-year period of investigation, with interim period data if available. However, the Commission has the discretion to use information outside of the POI to inform its analysis. *See JMC Steel Grp. v. United States*, 24 F. Supp. 3d 1290, 1315 (Ct. Int'l Trade 2014) ("The ITC has discretion to use evidence outside of the POI in its investigations and may reasonably interpret the evidence and use these interpretations to determine the significance of any particular factor in its analysis." (citations omitted)). In these investigations, while we rely on a three-year period of investigation, we also rely on information from prior to the POI to inform our analysis, in particular that the presence of subject imports during the POI reflects the increase in subject import volume and market share that occurred from 2021 to 2022. Petitioner supports this approach. *See* Petitioner's Prehearing Br. at 23–24; Petitioner's Posthearing Br. at 3–4, Answers to Commissioner Questions, at 1–4; *accord* Petitioner's Final Comments at 3. While Respondents urge the Commission to disregard the pre-POI data as unnecessary, they argue in the alternative that if the Commission considers 2021 volume and market share data, it must recognize that the price of subject imports increased significantly from 2021 to 2022 as their volume and market share increased. Respondents' Final Comments at 7 (citing *Post-Conference Brief of AIA Engineering Limited and Vega Industries Limited USA* at 14, EDIS Doc. 822079 (May 22, 2024)); *accord* Respondents' Posthearing Br. at 9. As explained below, we have taken the increase in subject import prices from 2021 to 2022 into account.

We agree with Petitioner that the increases in subject import volume and market share between 2021 and 2022 as seen in the preliminary phase of these investigations provide useful historical context.

With respect to Respondents' observation that prices for subject imports increased between 2021 and 2022, data from the preliminary phase indicate that the average unit values ("AUVs") of subject imports increased from $*** per short ton in 2021 to $*** per short ton in 2022, for an increase of *** percent. Preliminary Confidential Report at Table IV-2. The AUVs of U.S. shipments of subject imports increased from $*** per short ton in 2021 to $*** per short ton in 2022, for an increase of *** percent. *Id.* at Table C-1. Similarly, the AUVs of Petitioner's U.S. shipments and net sales AUVs increased from 2021 to 2022, increasing from $*** and $*** per short ton in 2021 to $*** and $*** per short ton in 2022, for increases of *** and *** percent, respectively. *Id.* at Tables III-6, VI-1, VI-2 & C-1. These increases coincided with a *** percent increase in apparent U.S. consumption and increased raw material costs, which Petitioner reported increased by *** percent from 2021 to 2022. *Id.* at Tables IV-4, V-1, VI-2 & C-1. At the same time, we observe that subject imports undersold the domestic like (Continued…)

the POI by subject imports – which are highly substitutable with the domestic like product – enabled subject imports to maintain their market share throughout the POI and prevented domestic producers from regaining market share previously lost to subject imports. As reviewed above, the lost sales data confirm that subject imports gained sales from Petitioner due to their lower prices, supporting that subject import underselling enabled subject imports to maintain a market share during the POI that was higher than it otherwise would have been.[128]

We have also considered whether subject imports depressed or suppressed prices to a significant degree. During the POI, domestic prices for all six pricing products generally increased from the beginning of the POI to their peak in the second or third quarter of 2022, declined until the first or second quarter of 2023, and then fluctuated within a relatively narrow range for the remainder of the POI, for an overall decline between *** and *** percent.[129]

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(…Continued)
product in the majority of instances and had lower U.S. shipment AUVs than the domestic industry. *Id.* at Tables III-6, V-10 & C-1.

[127] The scope of the investigations and level of response to our domestic producer and importer questionnaires are largely the same in the preliminary and final phases of these investigations, such that the preliminary phase and final phase data on shipments and market share appear to be sufficiently comparable, allowing us to compare subject import volume and market share in 2021 to 2022. That comparison shows that subject imports increased from *** short tons in 2021 to *** short tons in 2022, for an increase of *** percent. Preliminary Confidential Report, Memorandum INV-WW-056 (June 3, 2024) ("Preliminary Confidential Report") at Table IV-2. U.S. shipments of subject imports increased from *** short tons in 2021 to *** short tons in 2022, for an increase of *** percent. *Id.* at Tables IV-4 & C-1. Subject imports' market share increased from *** percent in 2021 to *** percent in 2022, for an increase of *** percentage points. *Id.* By comparison, Petitioner's U.S. shipments decreased from *** short tons in 2021 to *** short tons in 2022, for a decrease of *** percent, and its market share declined from *** percent in 2021 to *** percent in 2022, for a decrease of *** percentage points. *Id.*

[128] We recall our finding above that there is evidence that the decreases in subject import volume and market share in 2024 are related in part to the pendency of the investigations.

[129] CR/PR at Tables 5.4–5.11, Figures 5.2–5.8. Specifically, prices for product 1 increased from $*** per short ton in the first quarter of 2022 to $*** per short ton in the third quarter of 2022, decreased to $*** per short ton in the first quarter of 2023, and then fluctuated for the remainder of the POI before ending at $*** per short ton in the fourth quarter of 2024. *Id.* at Table 5.4, Figure 5.2. Prices for product 2 increased from $*** per short ton in the first quarter of 2022 to $*** per short ton in the third quarter of 2022, decreased to $*** per short ton in the second quarter of 2023, and then fluctuated for the remainder of the POI before ending at $*** per short ton in the fourth quarter of 2024. *Id.* at Table 5.5, Figure 5.3. Prices for product 3 increased from $*** per short ton in the first quarter of 2022 to $*** per short ton in the second quarter of 2022, and then decreased for the remainder of the POI to $*** per short ton in the fourth quarter of 2024. *Id.* at Table 5.6, Figure 5.4. Prices for product 4 increased from $*** per short ton in the first quarter of 2022 to $*** per short ton in the second quarter of 2022, decreased to $*** per short ton in the first quarter of 2023, and then (Continued…)

Prices for subject imports of products 1–4 and 6 followed somewhat similar trends during the POI, with overall declines ranging between *** and *** percent.[130]

Petitioner's ratio of cost of goods sold ("COGS") to net sales increased from *** percent in 2022 to *** percent in 2023 and then decreased to *** percent in 2024, for an overall decrease of *** percentage points.[131] Petitioner's COGS to net sales ratio increased from 2022 to 2023 as its net sales AUVs declined to a greater degree than its unit total COGS, and its ratio

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(…Continued)
fluctuated for the remainder of the POI before ending at $*** per short ton in the fourth quarter of 2024. *Id.* at Table 5.7, Figure 5.5. Prices for product 5 decreased from $*** per short ton in the second quarter of 2022 (the first quarter in which data were available) to $*** per short ton in the first quarter of 2023, and then fluctuated for the remainder of the POI before ending at $*** per short ton in the fourth quarter of 2024. *Id.* at Table 5.8, Figure 5.6. Prices for product 6 increased from $*** per short ton in the first quarter of 2022 to $*** per short ton in the second quarter of 2022, and then decreased for the remainder of the POI (save for a slight increase between the first and second quarters of 2024) to $*** per short ton in the fourth quarter of 2024. *Id.* at Table 5.9, Figure 5.7.

Over the POI, domestic prices decreased by *** percent for product 1, *** percent for product 2, *** percent for product 3, *** percent for product 4, *** percent for product 5, and *** percent for product 6. *Id.* at Tables 5.10–5.11. The percent change for product 5 was calculated with respect to the second quarter of 2022, which is the first quarter in which data were available. *See id.* at Table 5.11 note.

[130] CR/PR at Tables 5.4–5.7 & 5.9–5.10, Figures 5.2–5.5 & 5.7. Specifically, prices for product 1 increased from $*** per short ton in the first quarter of 2022 to $*** per short ton in the third quarter of 2022, decreased to $*** per short ton in the first quarter of 2023, and then fluctuated for the remainder of the POI before ending at $*** per short ton in the fourth quarter of 2024. *Id.* at Table 5.4, Figure 5.2. Prices for product 2 fluctuated downward from $*** per short ton in the first quarter of 2022 to $*** per short ton in the second quarter of 2022 and back upward to $*** per short ton in the third quarter of 2022, decreased to $*** per short ton in the fourth quarter of 2023, and then fluctuated for the remainder of the POI before ending at $*** per short ton in the fourth quarter of 2024. *Id.* at Table 5.5, Figure 5.3. Prices for product 3 increased from $*** per short ton in the first quarter of 2022 to $*** per short ton in the second quarter of 2022, decreased to $*** in the second quarter of 2023, and then fluctuated for the remainder of the POI before ending at $*** per short ton in the fourth quarter of 2024. *Id.* at Table 5.6, Figure 5.4. Prices for product 4 increased from $*** per short ton in the first quarter of 2022 to $*** per short ton in the third quarter of 2022, decreased to $*** per short ton in the second quarter of 2023, and then fluctuated for the remainder of the POI before ending at $*** per short ton in the fourth quarter of 2024. *Id.* at Table 5.7, Figure 5.5. Prices for product 6 increased from $*** per short ton in the first quarter of 2022 to $*** per short ton in the second quarter of 2022, decreased to $*** per short ton in the second quarter of 2023, and then fluctuated for the remainder of the POI before ending at $*** per short ton in the fourth quarter of 2024. *Id.* at Table 5.9, Figure 5.7.

Over the POI, subject import prices decreased by *** percent for product 1, *** percent for product 2, *** percent for product 3, *** percent for product 4, and *** percent for product 6. *Id.* at Tables 5.10–5.11. Price trends are not available for imports of product 5 from India due to insufficient data. *Id.* at Table 5.8, Figure 5.6.

[131] CR/PR at Tables 6.1 & C.1.

decreased from 2023 to 2024 as its unit total COGS declined to a greater degree than its net sales AUVs.[132]

We find that pricing pressure from subject import underselling resulted in domestic prices declining more than they otherwise would have during the POI. While raw material costs also declined in 2023, the domestic industry's net sales AUVs declined substantially more than its unit total COGS.[133] As the decline of domestic sales prices outpaced the decline in the domestic industry's unit total COGS from 2022 to 2023, the industry experienced a cost-price squeeze, resulting in its COGS to net sales ratio rising from *** to *** percent, operating and net losses, and an operating margin of *** percent in 2023.[134] We acknowledge that from 2023 to 2024 the domestic industry's COGS to net sales ratio improved, as Petitioner's net sales AUVs declined to a lesser degree than its unit total COGS.[135] Nevertheless, Petitioner's COGS to net

[132] CR/PR at Tables 6.1–6.2 & C.1.

[133] Petitioner's net sales AUVs declined by $*** from 2022 to 2023 compared to a decline of $*** in its unit total COGS. CR/PR at Tables 6.1–6.2 & C.1.

[134] CR/PR at Tables 3.5, 6.1–6.2 & C.1. Between 2022 and 2023, the AUVs of Petitioner's net sales and U.S. shipments declined by $*** per short ton (*** percent) and $*** per short ton (*** percent), respectively, compared to the decline of $*** per short ton (*** percent) in its unit total COGS. *Id.* As Petitioner's unit total COGS declined by $*** per short ton (*** percent) between 2023 and 2024, its net sales AUVs decreased by $*** per short ton (*** percent), while U.S. shipments AUVs increased by $*** per short ton (*** percent). *Id.* Overall, the decline of $*** per short ton (*** percent) in Petitioner's unit total COGS exceeded the declines of $*** per short ton (*** percent) and $*** per short ton (*** percent) in the AUVs of its net sales and U.S. shipments, respectively, over the POI. *Id.*

[135] The improvement in Petitioner's COGS to net sales ratio is primarily attributable to a decline in unit total COGS, and particularly a decline in raw material costs, during a period of *** apparent U.S. consumption and prices, and Petitioner's temporary increase in exports during 2024 may have also contributed to the improved ratio by enabling Petitioner to spread its fixed costs over more production volume. CR/PR at Tables 5.1, 5.4–5.9, 6.1 & C.1, Figures 5.1–5.7. Additionally, while we observe that the filing of the petitions appears to have affected subject import volumes in 2024, the pendency of these investigations also appears to have affected subject import prices and price effects in 2024. Subject import prices for products 1, 2, and 4 increased in the third and fourth quarters of 2024 after the filing of the petitions. *Id.* at Tables 5.4–5.5 & 5.7, Figures 5.2–5.3 & 5.5. Prices for product 3 increased from the second quarter of 2024 to the third quarter, but prices in the fourth quarter of 2024 dropped below the second quarter price, while prices for product 6 decreased in both quarters. *Id.* at Tables 5.6 & 5.9, Figures 5.4 & 5.7. Products 1, 2, and 4 accounted for *** percent of the reported quantity of subject imports of the pricing products sold in the third and fourth quarters of 2024. *Calculated from* Tables 5.4–5.7 & 5.9. Additionally, four of the nine quarterly comparisons (44.4 percent) showing subject import overselling during the POI occurred during 2024, with one of those in the second quarter of 2024 (*i.e.*, April to June, around when the petitions were filed), and the remaining three overselling quarters in the third or fourth quarters of 2024, after the filing of the petitions. *Id.* at Tables 5.4–5.9 & 5.14. There was thus a disproportionate number of overselling quarters in 2024 after the filing of the petitions compared to the rest of the POI. In light of the above, as we observed with subject import (Continued…)

sales ratio remained high, its operating income to sales ratio remained low, and its net losses continued. Further, we recall our finding that domestic product and subject imports are highly substitutable and that subject imports and Petitioner's HCCIGM are the only sources of supply in the U.S. market, with subject imports holding the largest share of the market. This availability of highly substitutable, lower-priced subject imports enables subject imports to exert downward pricing pressure on Petitioner's prices, the only other competitor in the market. Indeed, record evidence also shows that subject import pricing exerted downward pressure on domestic prices.[136] For example, Petitioner's *** customer, ***, which accounted for *** percent of Petitioner's U.S. shipments in 2024, reported that Petitioner *** to compete with low-priced subject imports and that it benefitted from price competition between subject imports and the domestic like product.[137] In sum, the record indicates that subject import underselling significantly contributed to domestic price declines in 2023 and the continuation of low prices in 2024.[138] Accordingly, we conclude that subject imports depressed prices for the domestic like product to a significant degree.

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(…Continued)
volumes, subject import price effects after the filing of the petitions may have been lesser in magnitude than they otherwise would have been due to the pendency of the investigations. Regardless, both subject import volume and underselling were significant in 2024, which kept Petitioner's prices in a depressed state notwithstanding the decline in its unit total COGS.

[136] *See, e.g.*, Hearing Tr. at 22–23, 45, 72–73 (Jacaruso), 43, 71–72 (Drake) (discussing how Petitioner frequently receives feedback from customers about the lower prices of subject imports during sales negotiations).

[137] *** reported a price reduction of 0.0 percent and provided the following explanation: "***." CR/PR at 5.24–5.25. As noted above, Petitioner reported that *** was one of its top customers during the POI, and its largest in 2024, even though *** reported that Petitioner's share of its purchases decreased by *** percentage points over the POI as *** increased. *Id.* at 1.3, 2.2, Table 5.15. Although it claims that domestic prices increased despite Petitioner discounting its offered prices in an attempt to compete with subject imports, *** acknowledged that it has benefitted from price competition between subject imports and the domestic like product. *Id.* at Table 5.17.

[138] Although apparent U.S. consumption declined by *** from 2022 to 2023 and *** percent from 2023 to 2024, we find that weakening demand does not explain the extent of the declining domestic prices in 2023 or the continuation of low domestic prices in 2024, as subject imports exerted significant downward pressure on domestic prices, as discussed above. CR/PR at Tables 4.7 & C.1. As an initial matter, Respondents do not assert that a decline in demand is responsible for price declines from 2022 to 2023 or the continuation of relatively low prices in 2024. To the contrary, Respondents argue that declines in raw material costs account for the price declines, *see, e.g.*, Respondents' Prehearing Br. at 13–15, yet as discussed above, declining raw material costs cannot fully explain the price declines because Petitioner's net sales AUVs fell by a larger amount than its unit raw material COGS over the POI.

A *** percent decline in apparent U.S. consumption from 2022 to 2023 (or *** short tons), which led to a *** percent reduction in the domestic industry's U.S. shipments during that period (or *** short tons), is modest in the context of the *** percent decline in the industry's net sales AUVs and (Continued…)

In sum, we find that subject imports significantly undersold the domestic like product, enabling subject imports to maintain market share throughout the POI as they took sales from Petitioner and prevented Petitioner from regaining market share previously lost to subject imports. Further, we find that subject imports depressed prices for the domestic like product to a significant degree. We therefore find that subject imports had significant price effects.

### E. Impact of the Subject Imports[139]

Section 771(7)(C)(iii) of the Tariff Act provides that the Commission, in examining the impact of the subject imports on the domestic industry, "shall evaluate all relevant economic factors which have a bearing on the state of the industry."[140] These factors include output,

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(…Continued)
the decline in the industry's financial performance between 2022 and 2023. *See* CR/PR at Tables 4.7, 6.1–6.2 & C.1. In 2022, most of the domestic industry's financials were ***, but the industry *** in 2023 when it ***. *See id.* There is nothing in the record indicating that the *** percent decline in apparent U.S. consumption would explain the significant declines in the domestic industry's pricing and financial performance, especially when its unit raw material and total COGS were also declining during the period. Tellingly, the domestic industry's performance improved from 2023 to 2024 when apparent U.S. consumption was ***, down only *** percent, indicating that apparent U.S. consumption is not a complete explanation of the domestic industry's performance during the POI. Indeed, as discussed below, the domestic industry's improved financial performance in 2024 is primarily attributable to declining unit total COGS and post-petition effects somewhat alleviating the depressing effects of subject imports that year.

Further, significant volumes of subject imports, which are highly substitutable with the domestic like product, were sold to overlapping customers with the domestic industry in this price-sensitive market. Petitioner and Respondents were the only suppliers to nearly all of the U.S. market during the POI, yet subject imports undersold the domestic like product throughout the POI. Market participants confirm that subject import prices affected Petitioner's pricing decisions. Thus, even to the extent that a decline in demand had some effect on domestic prices, it would not negate the downward pricing pressure from subject imports.

[139] The statute instructs the Commission to consider the "magnitude of the dumping margin" in an antidumping proceeding as part of its consideration of the impact of imports. 19 U.S.C. § 1677(7)(C)(iii)(V). In its final determination of sales at LTFV, Commerce found a dumping margin of 9.58 percent. *Certain High Chrome Cast Iron Grinding Media from India: Final Affirmative Determination of Sales at Less Than Fair Value*, 90 Fed. Reg. 17577 (Apr. 28, 2025). We take into account in our analysis the fact that Commerce has made final findings that all subject producers in India are selling subject imports in the United States at LTFV. In addition to this consideration, our impact analysis has considered other factors affecting domestic prices. Our analysis of the significant underselling of subject imports, described in both the price effects discussion and below, is particularly probative to an assessment of the impact of the subject imports.

[140] 19 U.S.C. § 1677(7)(C)(iii); *see also* SAA at 851, 885 ("In material injury determinations, the Commission considers, in addition to imports, other factors that may be contributing to overall injury. While these factors, in some cases, may account for the injury to the domestic industry, they also may (Continued…)

sales, inventories, capacity utilization, market share, employment, wages, productivity, gross profits, net profits, operating profits, cash flow, return on investment, return on capital, ability to raise capital, ability to service debt, research and development ("R&D"), and factors affecting domestic prices. No single factor is dispositive and all relevant factors are considered "within the context of the business cycle and conditions of competition that are distinctive to the affected industry."[141]

Despite the overall decrease in apparent U.S. consumption during the POI, Petitioner's output indicia generally increased by most measures from 2022 to 2024.[142] Petitioner's practical capacity remained flat, but its production increased irregularly by *** percent over the POI.[143] As a result, Petitioner's practical capacity utilization rate increased irregularly by *** percentage points over the POI, declining from *** percent in 2022 to *** percent in 2023 and

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(…Continued)
demonstrate that an industry is facing difficulties from a variety of sources and is vulnerable to dumped or subsidized imports.").

[141] 19 U.S.C. § 1677(7)(C)(iii). This provision was amended by the Trade Preferences Extension Act of 2015, Pub. L. 114-27.

[142] Petitioner attributes some of this improvement to its increased exports in 2024. CR/PR at 3.7 & n.10. After Petitioner's affiliated producer in Canada suffered a fire that halted production, Petitioner increased its exports to Canada so that its affiliate could serve its customers. *Id.* The Canadian affiliate has since resumed production, and Petitioner has no expectations of similarly benefitting from exports in the future. *Id.* The increased production to assist its affiliate may have enabled Petitioner to spread its fixed costs over more production volume, which resulted in improvements to its unit total COGS. *Cf.* Petitioner's Prehearing Br. at 17–18; Hearing Tr. at 32 (Habermann); *see also* CR/PR at Tables 6.1–6.2. However, the record indicates that the domestic industry's financial performance was worse when accounting for its export shipments to an affiliated firm in Canada, with the low AUVs of its export shipments likely accounting for the differences in the industry's financial performance between its U.S. market data (excluding exports) and its total market data (including exports) in 2024. *Compare* CR/PR at Table 6.1, *with id.* at Table I.1. Accordingly, we find that the improvement to the domestic industry's financial performance in 2024 is largely attributable to a decline in its unit total COGS – primarily driven by declining raw material costs – during a period of *** apparent U.S. consumption and prices, as well as post-petition effects on subject imports. While the impact of subject imports on the domestic industry was somewhat alleviated in 2024, which contributed to the industry's improved financial performance, the depressing effects of subject imports remained and kept the industry's financial performance poorer than it otherwise would have been.

[143] CR/PR at Tables 3.4 & C.1. Petitioner's practical capacity was *** short tons during every year of the POI. *Id*. Petitioner's production decreased from *** short tons in 2022 to *** short tons in 2023, and then increased to *** short tons in 2024. *Id.*

increasing to *** percent in 2024.[144] It nonetheless had substantial excess capacity throughout the POI.[145]

Petitioner's U.S. shipments declined by *** percent over the POI, while its market share increased irregularly by *** percentage points.[146] End-of-period inventories increased by *** percent over the POI.[147]

Petitioner's employment indicia were mixed. Its number of production and related workers ("PRWs"), total hours worked, hours worked per PRW, wages paid, and unit labor costs decreased overall during the POI.[148] Its hourly wages and productivity increased over the POI.[149]

Petitioner's financial performance was generally poor, although it improved by some metrics over the POI. Petitioner's net sales value declined irregularly over the POI, while its gross profits and operating and net incomes improved irregularly.[150] Its operating income

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[144] CR/PR at Tables 3.4 & C.1.

[145] CR/PR at Tables 3.4 & C.1.

[146] CR/PR at Tables 3.5, 4.7 & C.1. Petitioner's U.S. shipments declined from *** short tons in 2022 to *** short tons in 2023 and *** short tons in 2024. *Id.* at Tables 3.5 & C.1. Petitioner's market share increased from *** percent in 2022 to *** percent in 2023, and then decreased to *** percent in 2024. *Id.* at Tables 4.7 & C.1.

[147] CR/PR at Tables 3.7 & C.1. Petitioner's end-of-period inventories increased from *** short tons in 2022 to *** short tons in 2023 and *** short tons in 2024. *Id.* As a ratio to total shipments, Petitioner's end-of-period inventories increased from *** percent in 2022 to *** percent in 2023 and *** percent in 2024, for an overall increase of *** percentage points. *Id.*

[148] Petitioner's number of PRWs decreased from *** in 2022 to *** in 2023, and then increased to *** in 2024, for an overall decrease of *** percent. CR/PR at Tables 3.8 & C.1. Total hours worked decreased from *** hours in 2022 to *** hours in 2023 and *** hours in 2024, for an overall decrease of *** percent. *Id*. Petitioner's hours worked per PRW decreased from *** hours in 2022 to *** hours in 2023 and *** hours in 2024, for an overall decrease of *** percent. *Id.* Wages paid decreased from $*** in 2022 to $*** in 2023, and then increased slightly to $*** in 2024, for an overall decrease of *** percent. *Id.* Unit labor costs decreased from $*** per short ton in 2022 to $*** per short ton in 2023 and $*** per short ton in 2024, for an overall decrease of *** percent. *Id.*

[149] Petitioner's hourly wages increased from $*** per hour in 2022 to $*** per hour in 2023 and $*** per hour in 2024, for an overall increase of *** percent. CR/PR at Tables 3.8 & C.1. Productivity increased from *** short tons per 1,000 hours in 2022 to *** short tons per 1,000 hours in 2023 and *** short tons per 1,000 hours in 2024. *Id.*

[150] Petitioner's net sales value decreased from $*** in 2022 to $*** in 2023, and then increased to $*** in 2024, for an overall decrease of *** percent. CR/PR at Tables 6.1 & C.1. Its gross profit decreased from $*** in 2022 to a gross loss of $*** in 2023, and then improved to a gross profit of $*** in 2024, for an overall increase of *** percent. *Id.* Its operating income decreased from $*** in 2022 to an operating loss of $*** in 2023, and then improved to an operating income of $*** in 2024, for an overall increase of *** percent. *Id.* Petitioner incurred a net loss of $*** in 2022, which worsened to a net loss of $*** in 2023, and then improved to a net loss of $*** in 2024. *Id.*

margin increased overall during the POI, while its net income margin worsened.[151] Petitioner's capital expenditures decreased irregularly over the POI, while R&D expenses were flat.[152] Its total assets increased irregularly during the POI, while its operating return on assets ("ROA") fluctuated with no net change between the beginning and end of the period.[153] Petitioner also reported actual and anticipated negative effects on investment, growth, and development due to subject imports.[154]

As discussed above, the significant volume of subject imports undersold the domestic like product to a significant degree and took significant sales from the domestic industry. Consequently, subject imports maintained a higher market share during the POI than they otherwise would have achieved, and Petitioner's U.S. shipments were accordingly lower than they otherwise would have been. The lower-priced subject imports also depressed domestic prices to a significant degree, reducing the profitability of Petitioner's lower volume of sales, and contributing materially to its poor financial performance. Accordingly, we find that subject imports had a significant impact on the domestic industry.

We also have considered whether there are other factors that may have had an impact on the domestic industry to ensure that we are not attributing injury from such other factors to subject imports. Although apparent U.S. consumption decreased overall during the POI, it cannot fully explain the declines in domestic prices during the POI, as discussed above, that led to a deterioration of Petitioner's financial performance. Additionally, declining apparent U.S. consumption cannot account for the Petitioner's confirmed lost sales to lower-priced subject imports during the POI.

We have considered whether nonsubject imports may have had an impact on the domestic industry. Although nonsubject imports gained *** percentage points of market share from 2022 to 2024, their share of apparent U.S. consumption was only *** percent in 2022 (or *** short tons), *** percent in 2023 (or *** short tons), and *** percent in 2024 (or *** short

[151] Petitioner's operating income as a share of net sales decreased from *** percent in 2022 to *** percent in 2023, and then improved to *** percent in 2024, for an overall increase of *** percentage points. CR/PR at Tables 6.1 & C.1. Its net income as a share of net sales worsened from *** percent in 2022 to *** percent in 2023, and then improved to *** percent in 2024. *Id.*

[152] Petitioner's capital expenditures decreased from $*** in 2022 to $*** in 2023, and then increased to $*** in 2024, for an overall decrease of *** percent. CR/PR at Tables 6.5 & C.1. Petitioner reported *** R&D expenses during each year of the POI. *Id.*

[153] Petitioner's total net assets decreased from $*** in 2022 to $*** in 2023, and then increased to $*** in 2024, for an overall increase of *** percent. CR/PR at Tables 6.5 & C.1. Its ROA declined from *** percent in 2022 to *** percent in 2023, and then improved to *** percent in 2024. *Id.*

[154] CR/PR at Tables 6.7–6.8.

tons).[155] These volumes are too small to account for the pricing pressure on domestic prices during the POI that caused a decline in the domestic industry's financial performance. Nonsubject imports also cannot account for the domestic industry's confirmed lost sales to lower-priced subject imports. Furthermore, ***.[156]

We have considered Respondents' arguments that the domestic industry's poor performance was not caused by subject imports, but rather was the result of competition with forged grinding media.[157] We acknowledge that competition between HCCIGM and forged grinding media in the domestic market existed during the POI to a limited degree, but we conclude that competition with forged grinding media does not explain the injury to the domestic industry during the POI that we have attributed to subject imports. There is evidence of only one purchaser (***) switching from HCCIGM to forged grinding media during the POI, but it switched back in less than a year, citing the increased storage and handling burden of forged grinding media.[158] Although six of nine responding purchasers reported buying HCCIGM and forged grinding media during the POI and some market participants reported that pricing drives purchasers' decision to purchase either HCCIGM or forged grinding media,[159] there is no evidence in the record of a widespread practice among customers of switching back and forth between HCCIGM and forged grinding media in response to relative price changes. There is also no evidence that forged grinding media had negative effects on domestic HCCIGM prices or accounts for the share of the market held by subject imports relative to the domestic producer. Indeed, ***, the only purchaser that reported switching from HCCIGM to forged grinding media during the POI, also reported benefiting from price competition between subject imports and domestically produced HCCIGM.[160] Any competition with forged grinding media also cannot explain the sales the domestic industry lost to subject imports that were confirmed by purchasers, including ***, as discussed above.[161] Moreover, even if increased demand for

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[155] CR/PR at Tables 4.7 & C.1.

[156] CR/PR at 4.6 n.8. *** reported the following as its reason for importing HCCIGM from nonsubject sources: "***." ***'s U.S. Importer Questionnaire at II-4.

[157] Respondents' Prehearing Br. at 5–10; Respondents' Posthearing Br. at 2–3.

[158] CR/PR at 2.11 & n.30.

[159] CR/PR at 2.10 & Table J.2; *accord* Respondents' Prehearing Br. at 3–4, 15–21, 24–26; Respondents' Posthearing Br. at 5–6, 8, 10, 11, Responses to Commission Questions, at 16–18, 20–21; Respondents' Final Comments at 2, 8, 10.

[160] CR/PR at Table 5.17.

[161] Although Respondents argue that *** shifted purchases of HCCIGM to forged grinding media during the POI, *see, e.g.*, Respondents' Posthearing Br. at 8, we observe that only its purchases of domestically produced HCCIGM decreased, while its purchases of low-priced subject imports increased. (Continued…)

forged grinding media caused the decline in demand for HCCIGM, we already found that the decline in apparent U.S. consumption during the POI does not fully explain the injury to the domestic industry during that period.

We have also considered Respondents' argument that any injury to the domestic industry reflects purchasers' view of Petitioner as "an unreliable supplier" because of its alleged supply issues and extended lead times.[162] We find that the alleged supply issues do not explain Petitioner's injury. Most purchasers rated the U.S. product to be comparable to subject imports in terms of availability and reliability of supply, although a minority of purchasers rated the U.S. product to be inferior on these factors.[163] Further, while three purchasers reported supply constraints with respect to the domestic like product in 2022, only one reported such constraints in 2023, and none reported constraints in 2024.[164] Nonetheless, Petitioner's market share increased ***, and it lost significant sales to subject imports in every year of the POI. In addition, if purchasers were truly buying imports because they considered Vega to be more "reliable," we would expect subject imports to command a price premium, and not to consistently undersell the domestic like product.[165]

## V. Conclusion

For the reasons stated above, we determine that an industry in the United States is materially injured by reason of subject imports of HCCIGM from India that are sold in the United States at LTFV and subsidized by the government of India.

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(…Continued)
*See* ***'s U.S. Purchaser Questionnaire at II-1; *accord* Petitioner's Posthearing Br., Answers to Commissioner Questions, at 34.

[162] Respondents' Final Comments at 3; *accord* Respondents' Prehearing Br. at 9–10; Respondents' Posthearing Br. at 2–3.

[163] CR/PR at Table 2.13.

[164] CR/PR at Table 2.5.

[165] For example, as discussed above, purchaser *** cited the importance of supplier diversity, but it acknowledged that it benefits from price competition between subject imports and the domestic like product. CR/PR at Table 5.17.

# Part 1: Introduction

## Background

These investigations result from a petition filed with the U.S. Department of Commerce ("Commerce") and the U.S. International Trade Commission ("USITC" or "Commission") by Magotteaux Inc., Franklin, Tennessee, on April 26, 2024, alleging that an industry in the United States is materially injured and threatened with material injury by reason of subsidized and less-than-fair-value ("LTFV") imports of high chrome cast iron grinding media ("HCCIGM")[1] from India. Table 1.1 presents information relating to the background of these investigations.[2] [3]

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

| Effective date | Action |
|---|---|
| April 26, 2024 | Petition filed with Commerce and the Commission; institution of the Commission's investigations (89 FR 35860, May 2, 2024) |
| May 16, 2024 | Commerce's notice of initiation of less-than-fair-value ("LTFV") investigation (89 FR 45630, May 23, 2024) |
| May 16, 2024 | Commerce's notice of initiation of countervailing duty investigation (89 FR 45640, May 23, 2024) |
| June 10, 2024 | Commission's preliminary determinations (89 FR 50632, June 14, 2024) |
| October 4, 2024 | Commerce's preliminary countervailing duty determination and alignment of final determination with final antidumping duty determination (89 FR 80865, October 4, 2024) |
| December 6, 2024 | Commerce's preliminary LTFV determination (89 FR 96939, December 6, 2024); scheduling of final phase of Commission investigations (89 FR 104560, December 23, 2024) |
| April 24, 2025 | Commission's hearing |
| April 28, 2025 | Commerce's final countervailing duty determination (90 FR 17575, April 28, 2025) |
| April 28, 2025 | Commerce's final LTFV determination (89 FR 17577, April 28, 2025) |
| May 22, 2025 | Commission's vote |
| June 11, 2025 | Commission's views |

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

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

[3] Appendix B presents the witnesses appearing at the Commission's hearing.

## Statutory criteria

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

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

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

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

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

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

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

## Organization of report

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

## Market summary

HCCIGM is generally used to crush or grind mineral ore or other raw materials in ball mills utilized in mining operations, cement production, and the utilities industry. The leading U.S. producer of HCCIGM is Magotteaux Inc. ("Magotteaux"), while a leading producer of HCCIGM outside the United States is AIA Engineering Limited ("AIA") of India. The leading U.S. importer of HCCIGM from India is Vega Industries Limited ("Vega"), while the leading U.S. importer of product from nonsubject countries (primarily ***) is ***. U.S. purchasers of HCCIGM are firms that purchase HCCIGM from the U.S. producer and U.S. importers and use the product predominantly in mining operations and cement production; leading purchasers include ***.

Apparent U.S. consumption of HCCIGM totaled approximately *** short tons ($***) in 2024. Currently, a single firm, Magotteaux, is known to produce HCCIGM in the United States. U.S. producer Magotteaux's U.S. shipments of HCCIGM totaled *** short tons ($***) in 2024 and accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value. U.S. shipments of imports from subject

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

sources totaled *** short tons ($***) in 2024 and accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value. U.S. shipments of imports from nonsubject sources totaled *** short tons ($***) in 2024 and accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value.

## Summary data and data sources

A summary of data collected in these investigations is presented in appendix C, tables C.1 and C.2. The Commission's questionnaires collected data for the years 2022 to 2024. Except as noted, U.S. industry data are based on questionnaire responses of one firm, Magotteaux, which accounted for the entirety of U.S. production of HCCIGM during 2024. U.S. imports are based on the questionnaire responses of five importers that accounted for virtually all of official import statistics for subject sources, and *** percent of official import statistics for nonsubject sources by quantity, under HTS statistical reporting number 7325.91.0000 in 2024.

## Previous and related investigations

HCCIGM has not been the subject of any prior countervailing or antidumping duty investigations in the United States.

## Nature and extent of subsidies and sales at LTFV

### Subsidies

On April 28, 2025, Commerce published a notice in the Federal Register of its final determination of countervailable subsidies for producers and exporters of HCCIGM from India.[6] Table 1.2 presents Commerce's findings of subsidization of HCCIGM in India.

[6] 90 FR 17575, April 28, 2025.

**Table 1.2 HCCIGM: Commerce's final subsidy determination with respect to imports from India**

| Entity | Final subsidy rate (percent) |
|---|---|
| AIA Engineering Limited; Vega Industries (Middle East) F.Z.C; Welcast Steels Ltd | 3.16 |
| All others | 3.16 |

Source: 90 FR 17575, April 28, 2025

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

## Sales at LTFV

On April 28, 2025, Commerce published a notice in the Federal Register of its final determination of sales at LTFV with respect to imports from India.[7] Table 1.3 presents Commerce's dumping margins with respect to imports of product from India.

**Table 1.3 HCCIGM: Commerce's final weighted-average LTFV margins with respect to imports from India**

| Entity | Weighted-average dumping margin (percent) |
|---|---|
| AIA Engineering Limited | 9.58 |
| All others | 9.58 |

Source: 90 FR 17577, April 28, 2025.

# The subject merchandise

## Commerce's scope

In the current proceeding, Commerce has defined the scope as follows:[8]

> *The scope of this investigation covers chrome cast iron grinding media in spherical (ball) or ovoid shape, with an alloy composition of seven percent or more (≥ 7 percent of total mass) chromium (Cr) content and produced through the casting method, with a nominal diameter of up to 127 millimeters (mm) and tolerance of plus or minus 10 mm.*

[7] 90 FR 17577, April 28, 2025.
[8] 90 FR 17575 and 90 FR 17577, April 28, 2025.

### Tariff treatment

Based upon the scope set forth by Commerce, information available to the Commission indicates that the merchandise subject to this investigation are imported under statistical reporting number 7325.91.0000 of the Harmonized Tariff Schedule of the United States ("HTS"). The 2025 general rate of duty is 2.9 percent for HTS subheading 7325.91. Decisions on the tariff classification and treatment of imported goods are within the authority of U.S. Customs and Border Protection.

Grinding media originating in India are subject to an additional 25 percent ad valorem duty under section 232 of the Trade Expansion Act of 1962, as amended.[9] In addition, grinding media from India are excluded from the additional reciprocal tariffs under the International Emergency Economic Powers Act ("IEEPA") announced on April 2, 2025.[10]

## The product

### Description and applications[11]

HCCIGM, as defined by the scope of this proceeding, include all cast iron grinding media (balls) in spherical or ovoid shape, with a nominal diameter of up to 127 mm and tolerance of plus or minus 10 mm, which have a chromium alloy content of at least seven percent (by mass), and that are produced via casting. Most HCCIGM do not have a chromium content exceeding 35

[9] Effective March 12, 2025, HCCIGM originating in India became subject to an additional 25 percent ad valorem duty under section 232 of the Trade Expansion Act of 1962, as amended. 90 FR 9817, February 18, 2025. See also HTS heading 9903.81.90 and U.S. note 16(m) to subchapter III of chapter 99 and related tariff provisions for this duty treatment. USITC, HTS (2025) Revision 5, USITC Publication 5602, March 2025, pp. 99.3.13, 99.3.320.

[10] Effective April 9, 2025, most imports from India became subject to the additional 26 percent ad valorem reciprocal tariffs under IEEPA, which were reduced to 10 percent effective April 10, 2025. However, articles subject to section 232 tariffs, including grinding media from India, are exempted from the additional reciprocal tariffs on imports from India. For more information see The White House, "Executive Order: Regulating Imports with a Reciprocal Tariff to Rectify Trade Practices that Contribute to Large and Persistent Annual United States Goods Trade Deficits," April 2, 2025; The White House, "Executive Order: Modifying Reciprocal Tariff Rates to Reflect Trading Partner Retaliation and Alignment," April 9, 2025.

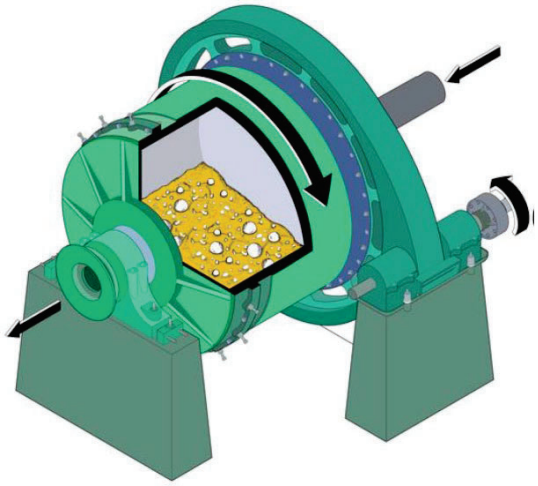
[11] Unless otherwise noted, the information in this section is based on High Chrome Cast Iron Grinding Media from India (Preliminary), Staff Report, June 3, 2024, p. I-6 to I-9.

percent.[12] There are no specific international technical standards for grinding media, including HCCIGM.[13]

**Industry Use**

Mineral processing operations, utilities, and cement processing facilities employ grinding media within 'ball mills' to reduce materials (e.g., ores) into small particles or fragments, a process known as comminution where the material is processed through multiple chambers containing different grinding media.[14] A ball mill is a type of grinder filled with grinding media, such as HCCIGM. Ball mills can be used in these industries to grind or blend materials. The process operates on the principle of impact and attrition: as the ball mill's container (shell) spins, the HCCIGM drop from near the top of the shell and contact/break the materials into smaller parts. By crushing or grinding the material, the HCCIGM can release the ore and concentrate minerals (figure 1.1).

**Figure 1.1 HCCIGM: Ball mill**



Source: Petition, Volume I, p. 8.

[12] These thresholds are a widely accepted industry standard. Magotteaux contends that it has established its own standards for size and chromium content which are considered benchmarks for HCCIGM throughout the global industry.

[13] Other types of grinding media include forged grinding media and low chrome cast iron grinding media.

[14] Conference transcript, p. 22 (Tallent).

The grinding conditions and environments within ball mills are influenced by factors such as required grinding action, mill size, ore characteristics,[15] and the manner of material discharge from the mill.[16] Each mill environment imposes specific conditions on grinding media, necessitating the use of tailored physical and chemical properties for optimal performance. Wear of HCCIGM during the grinding process results in the need for their replacement. Wearing arises from three recognized mechanisms: abrasion, impact, and corrosion. To mitigate grinding media consumption, producers manufacture HCCIGM according to precise specifications, including size and chemical composition, that are tailored to customer requirements.[17]

**Size**

HCCIGM typically range in size (diameter) from 11.8 to 127 mm. A mill's input feed size (the particle size of material[18] supplied to the mill) and the achieved degree of fineness (the size and percentage of required class size material at the exit of a ball mill) tend to drive customer decisions as to the appropriate HCCIGM size. Although smaller grinding media result in a smaller particle size of the final product, the grinding media need to be significantly larger than the largest pieces of material to be ground.

**Chemical composition**

HCCIGM are manufactured from a metal alloy primarily comprising steel scrap and supplemented by alloys such as ferrochrome (FeCr),[19] ***, among others. Of these components, the chromium ("Cr") content is of particular significance regarding the HCCIGM's performance. In particular, Cr content is important as it determines the HCCIGM's hardness level and wear resistance against abrasion and corrosion in a ball mill.[20]

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[15] Particular grinding applications have specific composition requirements, including if some of the grinding media will remain in the finished product or how the media will react with the material being ground.

[16] There are two main types of ball mills: grate type and overflow type, which discharge material differently.

[17] Since comminution operations are widely considered an expensive and energy-intensive process in the mineral industry, reducing HCCIGM consumption is a key concern for lowering costs.

[18] The material, also known as ore, is typically rock and dirt, that is to be finely crushed to release the metal contained within, such as copper, gold, iron, or zinc, prior to their further processing.

[19] Also referred to as ferrochromium, which is an alloy of chromium and iron.

[20] Higher hardness provides better wear resistance and size and shape maintenance, which prolongs the HCCIGM life.

The grinding media should be denser than the material being ground to prevent floating on top of the material. In addition, grinding media must be durable enough to grind the material effectively without excessively wearing down the mill or the media itself. High chrome content also provides corrosion resistance to protect against corrosive environments.

The chromium content of HCCIGM is determined by use of a spectrometer, which calculates the percentage of chromium relative to the total mass of the alloy. Testing of alloys occurs either before the casting stage in the production process or at any point thereafter.

Producers provide a range of alloy types by cultivating recipes that are tailored to vary the Cr content to accommodate the specific customer requirements and consider the end use environment (table 1.4).

**Table 1.4 HCCIGM: Grade Composition (Minimum – Maximum)**

| Grade | Carbon (C) % | Chromium (Cr) % |
|---|---|---|
| *** | *** | *** |
| *** | *** | *** |
| *** | *** | *** |
| *** | *** | *** |
| *** | *** | *** |
| *** | *** | *** |
| *** | *** | *** |
| *** | *** | *** |
| *** | *** | *** |
| *** | *** | *** |

Source: Petitioner's postconference brief, p. 2.

**Low Chrome Cast Iron Grinding Media (LCCIGM)**

LCCIGM are grinding media in spherical shape and produced through the casting method with a chromium content close to 1 percent. [21] LCCIGM have a nominal diameter of up to 127mm and tolerance of plus or minus 10mm. The hardness of LCCIGM is comparatively lower, with an average of less than 45 HRc (Rockwell Hardness Scale).[22]

LCCIGM are generally utilized in low corrosion and abrasion environments since the comparative decreased hardness of the LCCIGM prohibits their use.[23] Further, the wear performance of LCCIGM is lower than that of HCCIGM.

[21] Conference transcript, p. 2 (Hannemann).
[22] Hexin, "Chromium White Cast Iron Grinding Ball," accessed April 29, 2025.
[23] Petitioner's postconference brief, p. 2.

### Forged Grinding Media

Forged grinding media contain a very low chromium content close to 1 percent with a carbon content of typically under 1 percent.[24] The hardness rating of forged grinding media typically ranges between 55 and 65 HRc.[25] Forged grinding media are typically used in low abrasion environments.[26]

## Manufacturing processes[27]

HCCIGM production involves approximately eight key steps: (1) preparation of the alloy (raw material mix); (2) preparation of the sand molds; (3) casting; (4) breaking of the sand mold; (5) heat treatment; (6) quenching; (7) testing and quality control; and (8) shipping. Reportedly, these steps and materials are essentially the same in the United States as in India.[28]

### Preparation of the alloy

The first step involves creating the alloy mixture from various materials to add specific chemical and metallurgical properties to the HCCIGM. Steel scrap is the primary input, with a preference for scrap with a high Cr content—such as stainless steel. Other types of steel scrap can also be used, with adjustments made by adding ferrochromium (FeCr) to increase the Cr content.

The scrap metal is sorted according to type and grade, then loaded into electric induction melting furnaces where it is melted down to a liquid state. Once molten, the alloy's chemical composition is tested with a spectrometer, and corrective additions, primarily ferrochromium, are made until the alloy's properties fall within the desired tolerance range. After confirmation, the molten metal undergoes degassing in a ladle,[29] followed by the

[24] Hearing transcript, pp. 15, 17 (Hannemann); Petitioner's postconference brief, p. 2; MSE Supplies, "MSE PRO Forging Steel Grinding Balls," accessed April 29, 2025.

[25] Alpha Grinding Media, "Forged Steel Grinding Balls," April 20, 2022.

[26] Stanford Advanced Materials, "Cast Grinding Balls vs. Forged Grinding Balls: Making the Right Choice," October 24, 2024.

[27] Unless otherwise noted, the information in this section is based on Petition, Volume I, pp. 7 to 15.

[28] Petition Volume II, p. 3.

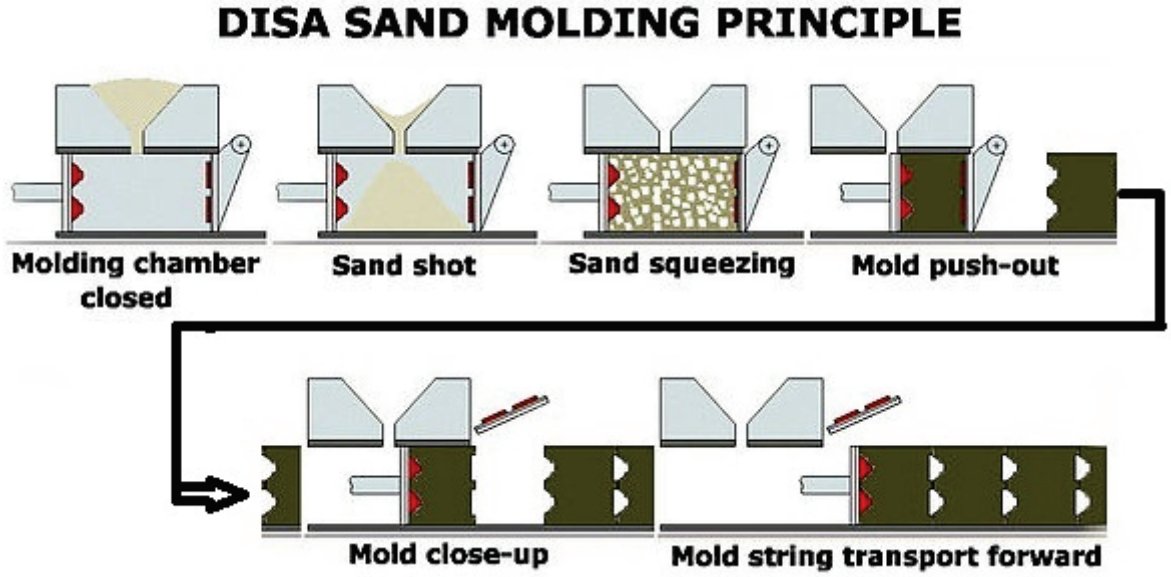
[29] A degassing ladle is used to remove unwanted dissolved gasses from molten steel. VAC AERO International, Inc., "Vacuum degassing of steel," https://vacaero.com/information-resources/vac-aero-training/101401-vacuum-degassing-steel.html, accessed April 10, 2025.

skimming off of slag.[30] The metal is then transferred to a pouring vessel located above the casting line,[31] from which it is poured into sand molds.

**Preparation of the sand molds[32]**

Sand molds, made of green sand,[33] are used to shape the molten alloy into HCCIGM. Each mold is used once before the sand is recycled. The shaping of sand molds is an automated process along the molding line (figure 1.2).

**Figure 1.2 HCCIGM: Automatic sand molding line**




Source: Tecco Industrial, "Disamatic casting," https://www.vn-castings.com.vn/Disamatic-casting/, accessed April 10, 2025.

[30] Slag is a waste material produced when molten steel is separated from impurities.

[31] Magotteaux uses the DISAMATIC®, (https://www.disagroup.com/disamatic) casting and molding lines. Petition Volume I, p. 9.

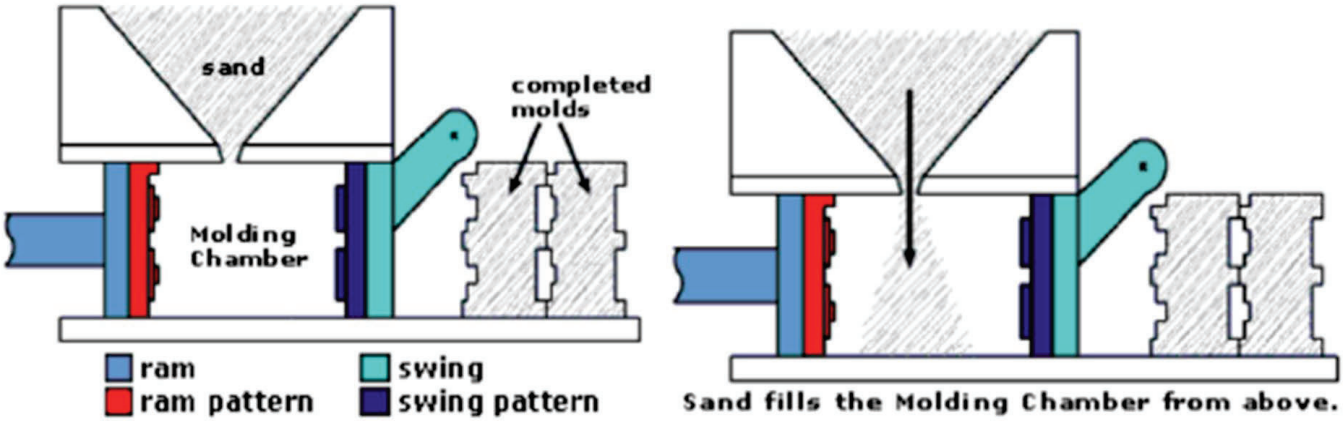
[32] For additional information, see Metal Technologies, "DISAMATIC® Molding Explained," https://www.metal-technologies.com/docs/default-source/education/disamaticmolding.pdf, accessed May 7, 2024.

[33] Green sand is used in metal casting processes. The sand is not green in color; it is called "green" because it's moist. Willman Industries, Inc, "What are green sand castings?" https://willmanind.com/what-are-green-sand-castings/, accessed May 7, 2024.

The molding line comprises a molding machine and an automatic mold transporting conveyor. In the process, a molding sand mixture, made up of a green sand mix (consisting of moist sand and bentonite clay), is blown into a rectangular steel chamber using compressed air (figure 1.3). This sand mixture is then pressed against two patterns located at the ends of the chamber: the "ram" and the "swing." Both the ram and the swing are equipped with corresponding pattern plates.

The process is largely automated (figure 1.2):[34] the sand shot introduces sand into the machine for molding; the sand squeeze shapes the ball pattern in the mold (see figures 1.4 and 1.5 for the shape created in the sand); stripping of the swing plant mechanically clears the sand mold; and mold push out moves the mold downward towards the pouring stage.

**Figure 1.3 HCCIGM: Molding chamber, ram and swing**




Source: Petition, Volume I, p. 10.

The pattern plates can be changed, depending on the grinding media size that is being produced; there are different patterns for different sizes of media (figure I.4).

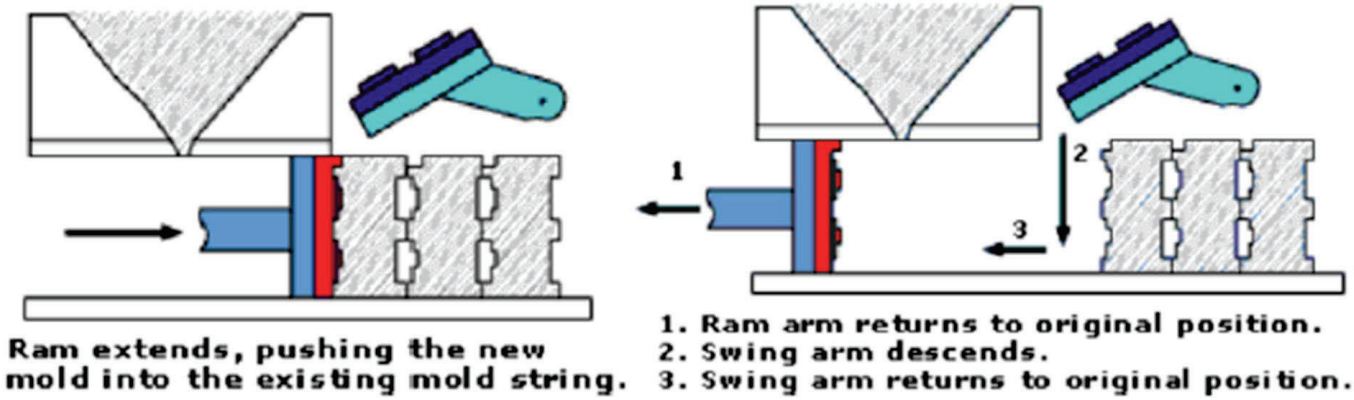
[34] Certain steps require oversight from an operator.

**Figure 1.4 HCCIGM: Casting pattern for HCCIGM**

Source: IndiaMART, "Mild Steel Grinding Media Patterns," accessed May 6, 2025.

As the ram automatically advances, it pushes the ram pattern forward, compressing the sand in the molding chamber to form mold impressions. This compression results in positioning the opposite halves of consecutive molds placed in the mold string. Simultaneously, the swing arm moves backward and upward to allow the mold to exit the molding chamber (figure 1.5).

**Figure 1.5 HCCIGM: Assembly of the sand mold**



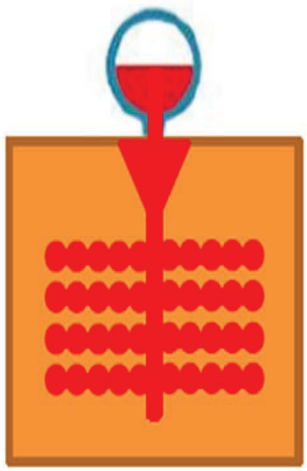

Source: Petition, Volume I, p. 11.

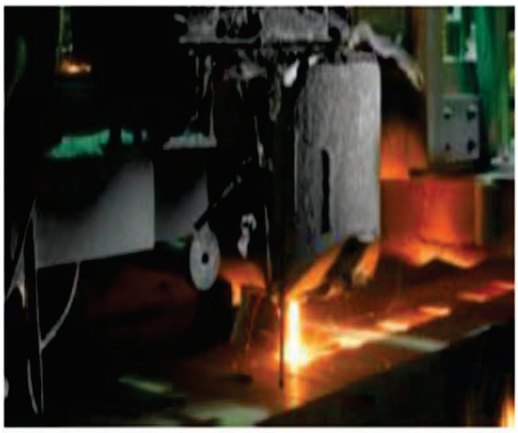
To finalize the mold, the automated molding line inserts a new mold into the mold string, with its leading edge meeting the trailing edge of the previous mold to form a complete mold cavity. After use, these molds are broken down, and the sand is reused for new molds. This process is repeated continuously and automatically on the molding line, ensuring a constant supply of molds.

**Casting**

The completed mold is positioned below the pouring vessel, which contains the molten alloy, and is prepared to receive the molten alloy through the pouring sprue[35] created by the pattern impressions. The molten alloy flows into the inner cavities, shaped to the correct ball sizes by the pattern plates (figure 1.6).

**Figure 1.6 HCCIGM: Pouring alloy in sand mold**





Source: Petition, Volume I, p. 12

Once the sand mold is filled with the molten alloy, it is left to cool, allowing the metal to solidify inside. As the alloy solidifies within the cavities of the mold, it forms a set of solid metal balls connected by metal sprues. The alloy also solidifies in the pouring sprue. Later in the process, the metal sprues will be detached from the balls and removed.

**Breaking the sand mold**

Once the alloy has cooled and solidified inside the sand mold, the sand mold is fed into a shaker drum. The shaker drum agitates the sand mold, causing the mold to break apart and the sand to separate from the HCCIGM and sprues.

After the sand has been removed, the HCCIGM and the sprues are fed to a breaker drum to separate the balls from each other and the sprues that connect to the media.[36]

[35] A sprue is the channel through which the molten metal is poured into the mold.
[36] The sprue pieces are returned to the furnace to be added back into the scrap and melted again.

**Heat treatment**

After cooling, the HCCIGM are transferred to the heat treatment process. They pass through a furnace on trays, where they are evenly heated.[37] The media are gradually heated to a temperature ranging from 1,500 to 2,000 degrees Fahrenheit. In addition to the Cr content, heat treatment enhances the hardness of the final product.

**Quenching**

Following heat treatment, the HCCIGM are quenched by immersing the batch in a bath filled with a polymer-based quenching fluid or through forced air quenching. This controlled cooling process transitions the metal from a high temperature to a cooler one, facilitating the formation of the desired microstructure and physical properties. The thermal shock induced by quenching creates internal stress within the balls, resulting in the desired hardness level.[38]

**Testing and quality control**

The producer then performs quality tests, including metallurgical microscopic observations, ball mill abrasion tests, impact testing, and hardness tests, to verify the hardness of the HCCIGM.

**Shipping**

The HCCIGM can be stored into one metric ton (MT) drums or packaged into one or two MT capacity polybags. Shipments are made either in bulk or on palletized containers (drums or bags), based on the customer's preference (figure 1.7).

[37] Based on the producer’s production capacity one or more heat treating furnaces will be used.
[38] Hardness is measured on the Rockwell C scale using a durometer.

**Figure 1.7 HCCIGM: Packed HCCIGM stored for shipment**


Source: Petition, Volume I, p. 15.

**LCCIGM**

The manufacturing process of LCCIGM is the same as HCCIGM except that significant amounts of ferrochromium are not required. The LCCIGM manufacturing process requires simpler heat-treatment and quenching equipment because of the lower chromium content.[39] The heat-treatment cycle for LCCIGM operates at a lower temperature and has less stringent quenching requirements than HCCIGM.[40]

[39] Ferro Alloys, "High Chrome Grinding Balls vs. Chrome Alloy Cast Balls," December 22, 2024.
[40] Ferro Alloys, "High Chrome Grinding Balls vs. Chrome Alloy Cast Balls," December 22, 2024.

**Forged Grinding Media**

Forged grinding media production begins with the purchase of steel bars from an external steel mill, then these bars are heated and balls are formed through either rolling or forging in a press-like machine.[41] The balls are then quenched in water after forging. The forging process does not allow for a high chromium content.[42]

## Domestic like product issues

In the preliminary phase of these investigations, the Commission defined a single domestic like product, coextensive with the scope.[43] In the preliminary phase of these investigations and in their comments on draft final phase questionnaires, respondent Holcim (US) Inc. ("Holcim"), a U.S. purchaser of HCCIGM, argued that HCCIGM used in the cement industry should be considered a separate like product from other grinding media covered by these investigations. Petitioner argued that the Commission should find a single domestic like product that encompasses HCCIGM for both mining and cement customers.[44] The question of whether to consider HCCIGM used in the cement industry as a separate domestic like product was considered by the Commission in the preliminary phase of these investigations, and the Commission concluded, based on the preponderance of similarities, not to define HCCIGM for use in the cement and mining industries as separate domestic like products.[45]

In the preliminary phase of these investigations, respondents AIA/Vega and Grinding Media Inc. d/b/a Molycop USA, LLC ("Molycop"), a U.S. importer of subject merchandise from India, argued that HCCIGM and forged grinding media are competitive and substitutable products, and requested that the Commission collect additional questionnaire responses on forged grinding media to be able to better assess whether the domestic like product should be expanded to include forged grinding media.[46] By contrast, Petitioner stated that the domestic like product should not be expanded to include forged grinding media or LCCIGM.[47] The Commission noted in the preliminary phase of these investigations that in any final phase of

[41] Stanford Advanced Materials, "Cast Grinding Balls vs. Forged Grinding Balls: Making the Right Choice," October 24, 2024.
[42] Hearing transcript, p. 16 (Hannemann).
[43] High Chrome Cast Iron Grinding Media from India, Inv. Nos. 701-TA-726 and 731-TA-1694 (Preliminary), USITC Publication 5518, June 2024 ("Preliminary phase publication"), p. 9.
[44] Petitioner's postconference brief, p. 4.
[45] Preliminary phase publication, pp. 16-17.
[46] AIA/Vega's postconference brief, p. 6; Molycop's postconference brief, p. 27.
[47] Petitioner's postconference brief, p. 4.

these investigations, it intended to investigate further whether the definition of the domestic like product should include out-of-scope forged grinding media or LCCIGM.[48] Consequently, in the final phase of these investigations, the Commission collected additional information from U.S. producers, importers, and purchasers to assess whether the definition of the domestic like product should be expanded to include forged grinding media and/or LCCIGM.[49]

In the final phase of these investigations, petitioner proposes the Commission should find that there is a single domestic like product coextensive with the scope and not expand the definition of the domestic like product to include forged grinding media.[50] Respondents AIA/Vega and Holcim do not contest the domestic like product definition proposed by the Petitioner.[51] [52]

[48] Preliminary phase publication, p. 12.

[49] U.S. producers, importers, and purchasers were asked to rank the comparability of (1) HCCIGM to out-of-scope LCCIGM, and (2) HCCIGM to out-of-scope forged grinding media, for each of the six-factors and provide a narrative explanation for their ranking. These responses are shown in Appendix D.

[50] Hearing transcript, p. 188 (Drake) and petitioner's posthearing brief, p. 1.

[51] AIA/Vega's prehearing brief, p. 4. While AIA/Vega does not contest the domestic like product definition, it does request that the Commission carefully consider the impact of forged grinding media on the market for HCCIGM as an important condition of competition, stating that forged grinding media is a substitute for, and competitive with, HCCIGM. AIA/Vega's prehearing brief, pp. 4, 15.

[52] Molycop, which participated in the preliminary phase of these investigations and argued that HCCIGM and forged grinding media are competitive and substitutable products, and requested that the Commission collect additional questionnaire responses on forged grinding media to be able to better assess whether the domestic like product should be expanded to include forged grinding media, did not submit a prehearing or post hearing brief, nor appear at the hearing.

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

## U.S. market characteristics

HCCIGM are used in ball mills by the mining, cement, and utility industries, to crush or grind ores, cement clinker, minerals, and coal.[1] Mining is the largest market for HCCIGM, with a smaller share used in cement and a very small percentage sold to utilities.[2] Chromium content affects the grinding media's wear resistance and can be altered to meet a customer's needs.[3] Other types of grinding media are also used in ball mills, specifically forged grinding media and LCCIGM. The use of a particular type of grinding media depends on the type of ore being processed, the conditions, and type of mill, with HCCIGM tending to have superior performance in corrosive and abrasive applications and forged media typically used in mills involving high impacts.[4] HCCIGM last longer but are more expensive than other types of grinding media.[5]

For mining uses, HCCIGM are usually custom-made whereas for cement, the HCCIGM used are more standardized.[6] For the mining industry, the HCCIGM ball size and the chrome and alloy content selected for a particular operation will vary depending on the mill diameter and other impact conditions.[7] The cement market uses almost exclusively HCCIGM for grinding media, with 18 percent chrome content used in the first chamber of a ball mill for the initial grinding and 12 percent chrome content in a second chamber to more finely grind the material.[8]

[1] Petition, Volume I, p. 7; AIA/Vega's postconference brief, p. 1. In mining applications, grinding media balls are constantly being added as ore is added into the mill, and some large customers will use several hundred tons of grinding media per month. Conference transcript, p. 61 (Hannemann).

[2] Conference transcript, p. 22, 40 (Tallent).

[3] Conference transcript, p. 13 (Hannemann).

[4] Conference transcript, p. 14 (Hannemann).

[5] Conference transcript, p. 15 (Hannemann).

[6] Conference transcript, pp. 121-122 (Hurlock).

[7] Conference transcript, p. 107 (Shah), pp. 121-122 (Hurlock), p. 140 (Gilani).

[8] About 10 percent of the cement market will use HCCIGM with more specialized recipes. Conference transcript, p. 22 (Tallent).

U.S. supply of HCCIGM is concentrated, with one U.S. producer, Magotteaux, and one major importer of HCCIGM from India, Vega (which imports from its related producer AIA).[9] In addition, importer questionnaires were received from ***, ***, which imported trial volumes of HCCIGM from India, and ***, an end user of HCCIGM.[10]

Purchases are somewhat concentrated among a relatively small number of U.S. purchasers. *** reported that in 2024, ***.[11] Importer *** reported that in 2024, ***.[12] Importers *** reported *** in 2024.

When asked whether there were distinct conditions of competition, U.S. producer Magotteaux reported ***. Importer *** reported that distinct conditions exist because there is only a single domestic producer and because foreign producer AIA has a lengthy qualification process to supply grinding media to new customers. Pricing, however, was not the primary consideration for customers' purchasing decisions. Importer *** reported that HCCIGM directly compete with forged grinding media on a total effective cost basis. Importer *** reported that mining operations drive demand for HCCIGM.

The U.S. producer and *** importers reported *** when asked if there had been any significant changes in the product range, product mix, or marketing of grinding media since January 1, 2022 with the exception of ***. It reported no new products but the production and sales profile changes, and there is variation in the average chrome content sold from quarter to quarter. *** reported no changes but stated, “Most producers of grinding media advertise that they can supply the entire range of grinding media including forged, high chrome, and ceramic balls.”

Apparent U.S. consumption of HCCIGM decreased steadily overall during 2022 to 2024. Overall, apparent U.S. consumption, by quantity, in 2024 was *** percent lower than in 2022.

[9] Conference transcript, p. 8 (Jacobson) and pp. 89-90 (Shah). AIA/Vega’s postconference brief, exhibit 1.

[10] ***.

[11] ***.

[12] See Part 5, “Lost sales and lost revenue,” for more information on purchasers.

## U.S. purchasers

The Commission received nine usable questionnaire responses from firms that had purchased HCCIGM during January 2022 to December 2024.[13] [14] [15] Seven responding purchasers are mining companies and two are cement companies. Large purchasers of HCCIGM include ***.

## Channels of distribution

HCCIGM are sold directly to end users.[16] *** comprised the majority of both the U.S. producer's and importers' sales from 2022 to 2024 (table 2.1). The U.S. producer and subject importers also sold HCCIGM to ***, whereas nonsubject shipments were sold *** to mining companies and cement producers.[17]

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

[14] Of the nine responding purchasers, eight purchased domestic HCCIGM, and eight purchased imports of the subject merchandise from India.

[15] Eight purchasers indicated they had marketing/pricing knowledge of domestic HCCIGM, nine of HCCIGM from India, and two of HCCIGM from nonsubject countries.

[16] Magotteaux's postconference brief, p. 3.

[17] Magotteaux reported that ***.

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

Shares in percent

| Source | Channel | 2022 | 2023 | 2024 |
|---|---|---|---|---|
| United States | Distributors | *** | *** | *** |
| United States | Mining companies | *** | *** | *** |
| United States | Cement producers | *** | *** | *** |
| United States | All other end users | *** | *** | *** |
| India | Distributors | *** | *** | *** |
| India | Mining companies | *** | *** | *** |
| India | Cement producers | *** | *** | *** |
| India | All other end users | *** | *** | *** |
| Nonsubject | Distributors | *** | *** | *** |
| Nonsubject | Mining companies | *** | *** | *** |
| Nonsubject | Cement producers | *** | *** | *** |
| Nonsubject | All other end users | *** | *** | *** |
| All imports | Distributors | *** | *** | *** |
| All imports | Mining companies | *** | *** | *** |
| All imports | Cement producers | *** | *** | *** |
| All imports | All other end users | *** | *** | *** |

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

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

Table 2.2 provides a comparison of the top 10 customer lists provided by U.S. producer Magotteaux and U.S. importer Vega. Of their top 10 customers, each firm reported *** unique customers and *** customers that purchased HCCIGM from both companies.

**Table 2.2 HCCIGM: U.S. producer Magotteaux's and U.S. importer Vega's top 10 customer list, by category**

Count in number of firms; Shares in percent

| Category | Count | Share |
|---|---|---|
| Overlapping customers | *** | *** |
| Nonoverlapping customers: Magotteaux | *** | *** |
| Nonoverlapping customers: Vega | *** | *** |
| Total top customers listed | *** | 100.0 |

## Geographic distribution

U.S. producer Magotteaux reported selling HCCIGM to *** (table 2.3). Importer *** reported selling to *** and *** reported selling to *** regions. For ***, *** percent of sales were within 100 miles of its production facility, *** percent were between 101 and 1,000 miles, and *** percent were over 1,000 miles. Importer Vega sold *** percent within 100 miles of its U.S. point of

shipment, *** percent between 101 and 1,000 miles, and *** percent over 1,000 miles. Importer Molycop sold *** percent within 100 miles of its U.S. point of shipment, *** percent between 101 and 1,000 miles, and *** percent over 1,000 miles.

**Table 2.3 HCCIGM: Count of U.S. producers' and U.S. importers' geographic markets**

| Region | U.S. producer | India |
|---|---|---|
| Northeast | *** | *** |
| Midwest | *** | *** |
| Southeast | *** | *** |
| Central Southwest | *** | *** |
| Mountains | *** | *** |
| Pacific Coast | *** | *** |
| Other | *** | *** |
| All regions (except Other) | *** | *** |
| Reporting firms | 1 | 2 |

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

Note: Other U.S. markets include AK, HI, PR, and VI.

# Supply and demand considerations

## U.S. supply

Table 2.4 provides a summary of the supply factors regarding HCCIGM from U.S. producer Magotteaux and Indian producer AIA. Reported capacity in both countries was *** from 2022 to 2024 but capacity in India far exceeded U.S. capacity. Most of the U.S. producer's shipments were to *** whereas AIA's shipments were primarily to *** in 2024.

**Table 2.4 HCCIGM: Supply factors that affect the ability to increase shipments to the U.S. market, by country**

Quantity in short tons; ratio and share in percent

| Factor | Measure | United States | India |
|---|---|---|---|
| Capacity 2022 | Quantity | *** | *** |
| Capacity 2024 | Quantity | *** | *** |
| Capacity utilization 2022 | Ratio | *** | *** |
| Capacity utilization 2024 | Ratio | *** | *** |
| Inventories to total shipments 2022 | Ratio | *** | *** |
| Inventories to total shipments 2024 | Ratio | *** | *** |
| Home market shipments 2024 | Share | *** | *** |
| Non-US export market shipments 2024 | Share | *** | *** |
| Ability to shift production | Count | *** | *** |

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

Note: The responding U.S. producer accounted for all of U.S. production of HCCIGM in 2024. The responding foreign producer/exporter firm accounted for virtually all of U.S. imports of HCCIGM from India during 2024. For additional data on the number of responding firms and their share of U.S. production and of U.S. imports from India, please refer to Part 1.

## Domestic production

Based on available information, the U.S. producer of HCCIGM has the ability to respond to changes in demand with *** changes in the quantity of shipments of U.S.-produced HCCIGM to the U.S. market. The main contributing factors to this degree of responsiveness of supply is the availability of ***. Factors mitigating responsiveness of supply include ***.

Magotteaux reported that its U.S. production capacity *** from 2022 to 2024. Its production increased by *** percent during the period, with a slight decrease from 2022 to 2023, then increased in 2024. The increased production resulted in a *** percentage point increase in capacity utilization between 2022 and 2024. Magotteaux's export shipments increased over the period, both absolutely and as a share of its total shipments (from *** percent in 2022 to *** percent in 2024). It reported that its major export markets are ***.[18] Magotteaux reported it ***. Magotteaux

[18] ***. Staff verification report, Magotteaux, May 7, 2025.

reported that "{f}ollowing the surge of Indian imports in 2022, we've had to shorten our shifts and periodically stop production for the equivalent of months."[19]

**Subject imports from India**

Based on available information, producers of HCCIGM from India have the ability to respond to changes in demand with large changes in the quantity of shipments of HCCIGM to the U.S. market. The main contributing factors to this degree of responsiveness of supply are the availability of unused capacity, the ability to shift shipments from alternate markets, and some inventories. A factor mitigating responsiveness of supply is limited ability to shift production to or from alternate products.

AIA reported that its capacity ***, and its production and capacity utilization decreased from 2022 to 2024. Most of its shipments were to ***. It reported exporting to *** and listed *** among its major export markets. AIA reported *** on the same equipment used to produce HCCIGM.

**Imports from nonsubject sources**

U.S. shipments of imports from nonsubject sources accounted for *** percent of apparent U.S. consumption in 2024, up from *** percent in 2022. Nonsubject imports were reported ***.

**Supply constraints**

*** reported that they had not experienced supply constraints since January 1, 2022. Some purchasers reported that Magotteaux was unable to supply sufficient quantities of HCCIGM or had long lead times (see Part 5). Purchaser Holcim reported that Magotteaux had long lead times and supply issues during the period, particularly in 2022, when Magotteaux had extended lead times of 8 to 9 months, but that lead times improved in 2023.[20]

[19] Conference transcript, p. 16 (Hannemann).

[20] Conference transcript, p. 102 (Jeong). Holcim stated that "***. The improvements in lead times in 2023 did lead to Holcim *** However, as shown in the emails, ***." Holcim's postconference brief, appendix, p. 2.

Three of nine responding purchasers reported that they had experienced supply constraints, with three reporting supply constraints from the domestic producer in 2022 and one reporting supply constraints in 2023. Constraints purchasers reported from the domestic producer were limited supply due to plant and staffing issues, and inability to meet delivery time requirements.

**Table 2.5 HCCIGM: Count of firms' responses regarding timing of supply constraints, by firm type and source**

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

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

### New suppliers

One of nine responding purchasers indicated that new suppliers entered the U.S. market since January 1, 2022. That purchaser cited Molycop as a new entrant into the market.[21]

## U.S. demand

U.S. demand for HCCIGM depends on the demand by the U.S. mining and cement industries, as well as demand by utilities and other smaller users. Based on available information, the overall demand for HCCIGM is likely to experience moderate changes in response to changes in price. The main contributing factors are the small cost share of HCCIGM in end-use products and the availability of substitute products.

[21] Though cited by the purchaser as a new entrant, we note that Molycop reported ***.

**End uses and cost share**

Purchasers reported a variety of responses regarding the demand trends for end-use products.[22] HCCIGM account for a small share of the cost of the end-use products in which it is used. ***.

**Business cycles**

The U.S. producer, importers, and 3 of 8 responding purchasers indicated that the market was subject to business cycles. Magotteaux reported that the cement market, but not the mining market, has some seasonality, with about half of all cement sales taking place in the first quarter of the year.[23] *** reported that ***. *** reported that ***.

**Demand trends**

In questionnaire responses, firms were mixed in their response to trends in both domestic and foreign demand since January 1, 2022 (table 2.6). Magotteaux reported that ***. *** reported that demand has steadily increased, stating that ***. AIA also reported that it is constantly working to convert customers from forged grinding media to HCCIGM.[24] Four of five responding purchasers reported no change in domestic demand, while the remaining firm reporting an upward fluctuation driven by an increase in cement demand. One purchaser reported irregular fluctuations in foreign demand, while two purchasers reported no change.

[22] Three purchasers reported that demand for end use products increased steadily since January 1, 2022, two reported that demand fluctuated upwards, three reported no change in demand, and one reported that demand fluctuated irregularly.

[23] Conference transcript, p. 23 (Tallent). Hearing transcript, p. 150 (Martinez).

[24] Hearing Transcipt, pp. 156, 159, 162 (Jacobsen), pp. 160-161 (Shah).

**Table 2.6 HCCIGM: Count of firms' responses regarding overall domestic and foreign demand, by firm type**

| Market | Firm type | Steadily increase | Fluctuate up | No change | Fluctuate irregularly | Fluctuate down | Steadily decrease |
|---|---|---|---|---|---|---|---|
| Domestic demand | U.S. producer | *** | *** | *** | *** | *** | *** |
| Domestic demand | Importers | *** | *** | *** | *** | *** | *** |
| Domestic demand | Purchasers | *** | *** | *** | *** | *** | *** |
| Foreign demand | U.S. producer | *** | *** | *** | *** | *** | *** |
| Foreign demand | Importers | *** | *** | *** | *** | *** | *** |
| Foreign demand | Purchasers | *** | *** | *** | *** | *** | *** |
| Demand for end use products | Purchasers | *** | *** | *** | *** | *** | *** |

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

**Substitute products**

Substitutes for HCCIGM include forged grinding media. Magotteaux reported that *** but importers *** reported that ***. *** reported that changes in the price of forged grinding media have affected the price for HCCIGM, that customers can switch between types of grinding media, and that "the products directly compete on a ratio of the useful life and total cost of ownership". Magotteaux's witness at the preliminary conference also reported that purchasers look at total cost of ownership in evaluating the type of grinding media to use.[25] AIA/Vega's witness stated that "customers must determine the tradeoff between the reliability and less frequent replacement costs of high chrome products versus the lower upfront cost of forged products."[26] Of nine responding purchasers, four reported forged grinding media as a substitute for HCCIGM.

Parties reported that customer switching from HCCIGM to other types of grinding media rarely occurs. Magotteaux could only recall one customer that switched to forged media and reported that this customer has since switched back to HCCIGM.[27] AIA/Vega reported that none of its customers have switched from HCCIGM to forged product.[28] Purchaser

[25] "The decision to switch is obviously based on the total cost of ownership, because we would have a firstly, the risk is fairly low because we would have done a trial with the customer using what we call a mark ball, a ball trial to demonstrate that high chromium media is the better media to use in the mill." Conference transcript, p. 30 (Hannemann).

[26] Conference transcript, p. 92 (Shah).

[27] Conference transcript, p. 70 (Hannemann).

[28] Conference transcript, p. 134 (Gilani).

***.[29] ***.[30]

Most cement customers currently use HCCIGM for their grinding media.[31] Cement producer Holcim reported, "{F}orged grinding media is used in the cement industry for very limited application and only where the grinding mill technology permits."[32] AIA/Vega reported increased demand for HCCIGM resulting from mining customers switching from forged to HCCIGM and that most of the mining market still uses forged grinding media,[33] but Magotteaux reported that the "vast majority of such conversions occurred many years ago."[34]

## Substitutability issues

This section assesses the degree to which U.S.-produced HCCIGM and imports of HCCIGM from India can be substituted for one another by examining the importance of certain purchasing factors and the comparability of HCCIGM from domestic and imported sources based on those factors. Based on available data, staff believes that there is a high degree of substitutability between domestically produced HCCIGM and HCCIGM imported from India.[35]

[29] ***. AIA/Vega's postconference brief, appendix, p. 4.

[30] ***. Magotteaux's postconference brief, Answers to staff questions, p. 5.

[31] Conference transcript, p. 144 (Shah).

[32] Holcim's postconference brief, p. 5 n.11.

[33] Conference transcript, p. 92 (Shah).

[34] Magotteaux's postconference brief, p. 10.

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

Factors contributing to this level of substitutability include similar quality, comparability on most purchase factors, little preference for particular country of origin or producers, interchangeability between domestic and subject sources, and limited significant factors other than price. Purchaser preferences for multiple suppliers and some lead time and availability differences at times during the period may somewhat limit substitutability.

## Factors affecting purchasing decisions

### Purchaser decisions based on source

As shown in table 2.7 most purchasers and their customers never make purchasing decisions based on the producer or country of origin. *** reported that the producer and country of origin are always factors in their purchasing decisions, citing producers' capability and past performance in terms of quality and delivery as well as lead times and risk of delays for country of origin.

**Table 2.7 HCCIGM: Count of purchasers' responses regarding frequency of purchasing decisions based on producer and country of origin**

| Firm making decision | Decision based on | Always | Usually | Sometimes | Never |
|---|---|---|---|---|---|
| Purchaser | Producer | 1 | 1 | 2 | 5 |
| Customer | Producer | 0 | 0 | 0 | 4 |
| Purchaser | Country | 1 | 0 | 2 | 5 |
| Customer | Country | 0 | 0 | 0 | 4 |

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

### Importance of purchasing domestic product

All responding purchasers reported that most or all of their purchases did not require purchasing U.S.-produced product.

### Most important purchase factors

The most often cited top three factors firms consider in their purchasing decisions for HCCIGM were price/cost (nine firms), quality (seven firms), and availability/supply (six firms) as shown in table 2.8. Quality was the most frequently cited first-most important factor (cited by four firms), followed by availability/supply (three firms), price/cost (one firm) and other factors (one firm); price/cost was the most frequently reported second-most important factor (five

firms); and other factors were the most frequently reported third-most important factor (four firms).

**Table 2.8 HCCIGM: Count of ranking of factors used in purchasing decisions as reported by purchasers, by factor**

| Factor | First | Second | Third | Total |
|---|---|---|---|---|
| Price / Cost | 1 | 6 | 2 | 9 |
| Quality | 4 | 2 | 1 | 7 |
| Availability / Supply | 3 | 1 | 2 | 6 |
| All other factors | 1 | 0 | 4 | NA |

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

Note: Other factors include shipping and distribution plan, lead times, technical and service support, safety and environmental compliance, sustainable sourcing.

### Importance of specified purchase factors

Purchasers were asked to rate the importance of 16 factors in their purchasing decisions (table 2.9). The factors rated as very important by more than half of responding purchasers were availability (nine firms), price (eight firms), delivery time, and reliability of supply (seven firms each), delivery terms, product consistency, quality meeting industry standards, and U.S. transportation costs (six firms each).

**Table 2.9 HCCIGM: Count of purchasers' responses regarding importance of purchase factors, by factor**

| Factor | Very important | Somewhat important | Not important |
|---|---|---|---|
| Availability | 9 | 0 | 0 |
| Delivery terms | 6 | 3 | 0 |
| Delivery time | 7 | 2 | 0 |
| Discounts offered | 2 | 7 | 0 |
| Longevity | 3 | 5 | 0 |
| Minimum quantity requirements | 4 | 1 | 4 |
| Packaging | 1 | 5 | 3 |
| Payment terms | 1 | 6 | 2 |
| Price | 8 | 1 | 0 |
| Product consistency | 6 | 3 | 0 |
| Product range | 2 | 4 | 3 |
| Quality meets industry standards | 6 | 3 | 0 |
| Quality exceeds industry standards | 5 | 3 | 1 |
| Reliability of supply | 7 | 2 | 0 |
| Technical support/service | 3 | 5 | 1 |
| U.S. transportation costs | 6 | 2 | 0 |

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

### Lead times

HCCIGM is primarily produced-to-order. U.S. producer Magotteaux reported that *** percent of its commercial shipments in 2024 were produced-to-order, with lead times

averaging *** days, as seen in table 2.10. The remaining *** percent of its commercial shipments came from inventories, with lead times averaging *** days. Importer *** reported that *** percent of their commercial shipments were produced-to-order, with lead times averaging *** days.[36] The remaining *** percent of its commercial shipments came from U.S. inventories, with lead times averaging *** days.

Suppliers keep inventories of some commonly used products, particularly for cement customers, as well as some buffer stocks for specific mining customers. Cement customers typically keep grinding media in inventory to use throughout the year, and Magotteaux also stocks some commonly used products for cement customers that may need more material than originally ordered.[37] Magotteaux "***."[38] AIA also stocks some inventory in the United States for cement customers and some buffer stocks for specific mining customers.[39]

**Table 2.10 HCCIGM: U.S. producers' and U.S. importers lead times, by period and type of order fulfillment**

Lead times in average number of days

| Order fulfillment type | Firm type | 2022 | 2023 | 2024 |
|---|---|---|---|---|
| From U.S. inventories | U.S. producers | *** | *** | *** |
| From U.S. inventories | Importers | *** | *** | *** |
| Produced-to-order | U.S. producers | *** | *** | *** |
| Produced-to-order | Importers | *** | *** | *** |

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

### Supplier certification

Seven of nine responding purchasers require their suppliers to become certified or qualified to sell HCCIGM to their firm. Purchasers reported that the time to qualify a new

[36] In its brief, AIA reported that its lead time is ***. AIA/Vega's postconference brief, appendix, p. 4.
[37] Conference transcript, p. 23 (Tallent).
[38] Magotteaux's postconference brief, Answers to staff questions, p. 13.
[39] AIA stated, ***. AIA/Vega's postconference brief, appendix, p. 5.

supplier ranged from 10 to 275 days. No purchasers reported that a supplier had failed in its attempt to qualify HCCIGM or had lost its approved status since 2022.

### Minimum quality specifications

As can be seen from table 2.11, seven responding purchasers reported that domestically produced product always met minimum quality specifications. Eight responding purchasers also reported that the HCCIGM imported from India always met minimum quality specifications.

**Table 2.11 HCCIGM: Count of purchasers' responses regarding suppliers' ability to meet minimum quality specifications, by source**

| Source of purchases | Always | Usually | Sometimes | Rarely or never | Don't Know |
|---|---|---|---|---|---|
| United States | 7 | 0 | 0 | 0 | 2 |
| India | 8 | 0 | 0 | 0 | 1 |
| All other sources | 0 | 0 | 1 | 0 | 2 |

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

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

All responding purchasers reported factors that determined quality including wear rate (five firms), Chrome content (four firms), hardness, metallurgy and shape (two each), size, and consistency.

### Changes in purchasing patterns

Three purchasers reported that they had changed suppliers since January 1, 2022, while six reported that they had not. Specifically, one firm added or increased purchases from Magotteaux due to better pricing while the remaining firms added or increased purchases from Vega because the U.S. supplier was not able to meet the firm's delivery time requirements and because Vega offered a lower price.

Purchasers were also asked about changes in their purchasing patterns from different countries since January 1, 2022 (table 2.12). Three reported increased (either steadily or fluctuating upwards) purchases of U.S. produced HCCIGM because of new contracts, plant maintenance in previous years, and shortened lead times by the U.S. producer in recent years. The purchasers that reported decreased purchases of U.S.-produced product cited long lead times, supply issues, decreased consumption, and the entry of alternative suppliers in the U.S. market. Five purchasers reported increased (either steadily or fluctuating upwards) purchases of product from India citing diversified supply and availability.

**Table 2.12 HCCIGM: Count of purchasers' responses regarding changes in purchase patterns from U.S., subject, and nonsubject countries**

| Source of purchases | Steadily Increase | Fluctuate Up | No change | Fluctuate Down | Steadily Decrease | Did not purchase |
|---|---|---|---|---|---|---|
| United States | 2 | 1 | 1 | 3 | 1 | 1 |
| India | 2 | 3 | 0 | 2 | 1 | 0 |
| All other sources | 0 | 0 | 0 | 0 | 0 | 5 |
| Sources unknown | 0 | 0 | 0 | 0 | 0 | 5 |

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

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

Purchasers were asked a number of questions comparing HCCIGM produced in the United States, subject countries, and nonsubject countries. First, purchasers were asked for a country-by-country comparison on the same 16 factors (table 2.13) for which they were asked to rate the importance in their purchasing decisions for HCCIGM.

Most purchasers reported that U.S.-produced HCCIGM and HCCIGM imported from India were comparable on availability, price, quality meets industry standards, reliability of supply, delivery terms, and product consistency. Purchasers were split between ranking U.S. produced HCCIGM as superior or comparable for technical support and service.

**Table 2.13 HCCIGM: Count of purchasers' responses comparing U.S.-produced and imported product, by factor and country pair**

| Factor | Country pair | Superior | Comparable | Inferior |
|---|---|---|---|---|
| Availability | U.S. vs India | 0 | 7 | 1 |
| Delivery terms | U.S. vs India | 0 | 8 | 0 |
| Delivery time | U.S. vs India | 3 | 4 | 1 |
| Discounts offered | U.S. vs India | 1 | 5 | 1 |
| Longevity | U.S. vs India | 0 | 8 | 0 |
| Minimum quantity requirements | U.S. vs India | 0 | 8 | 0 |
| Packaging | U.S. vs India | 0 | 8 | 0 |
| Payment terms | U.S. vs India | 0 | 8 | 0 |
| Price | U.S. vs India | 0 | 5 | 3 |
| Product consistency | U.S. vs India | 0 | 7 | 1 |
| Product range | U.S. vs India | 0 | 8 | 0 |
| Quality meets industry standards | U.S. vs India | 0 | 8 | 0 |
| Quality exceeds industry standards | U.S. vs India | 0 | 8 | 0 |
| Reliability of supply | U.S. vs India | 0 | 5 | 2 |
| Technical support/service | U.S. vs India | 3 | 3 | 2 |
| U.S. transportation costs | U.S. vs India | 3 | 5 | 0 |

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

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

## Comparison of U.S.-produced and imported HCCIGM

In order to determine whether U.S.-produced HCCIGM can generally be used in the same applications as imports from India, U.S. producers, importers, and purchasers were asked whether the products can always, frequently, sometimes, or never be used interchangeably. As shown in table 2.14, the U.S. producer reported that U.S.-produced HCCIGM and HCCIGM from India are *** interchangeable. In its prehearing brief, the petitioner stated that AIA is the successor of a joint venture with Magotteaux, and as a result, the two companies have very similar technologies and capabilities.[40] U.S. importers reported that U.S. produced HCCIGM and HCCIGM from India are *** interchangeable. Most purchasers reported that U.S. produced HCCIGM and HCCIGM from India are *** interchangeable.

Few firms cited limitations to interchangeability, including material variability between manufacturers creating issues with media wear characteristics and different material inputs being better for certain uses.

**Table 2.14 HCCIGM: Count of U.S. firms reporting the interchangeability between product produced in the United States and in other countries, by country pair**

| Country pair | Firm type | Always | Frequently | Sometimes | Never |
|---|---|---|---|---|---|
| United States vs. India | U.S. producer | 1 | 0 | 0 | 0 |
| United States vs. Other | U.S. producer | 1 | 0 | 0 | 0 |
| India vs. Other | U.S. producer | 1 | 0 | 0 | 0 |
| United States vs. India | Importers | 1 | 3 | 0 | 0 |
| United States vs. Other | Importers | 1 | 3 | 0 | 0 |
| India vs. Other | Importers | 1 | 2 | 0 | 0 |
| United States vs. India | Purchasers | 5 | 1 | 2 | 0 |
| United States vs. Other | Purchasers | 2 | 0 | 2 | 0 |
| India vs. Other | Purchasers | 1 | 0 | 1 | 0 |

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

In addition, U.S. producers, importers, and purchasers were asked to assess how often differences other than price were significant in sales of HCCIGM from the United States, subject, or nonsubject countries. As seen in table 2.15, the U.S. producer reported that differences other than price were *** significant. U.S. imports were split between differences *** being significant. Most U.S. purchasers reported that differences other than price were ***.

[40] See Petitioner's prehearing brief, p. 19

Of firms that reported significant differences other than price, importers cited availability, long-term relationships, technical support, lead times, product lines, and quality. Purchasers cited availability, lead time, quality, and delivery time.

**Table 2.15 HCCIGM: Count of U.S. firms reporting the significance of differences other than price between product produced in the United States and in other countries, by country pair**

| Country pair | Firm Type | Always | Frequently | Sometimes | Never |
|---|---|---|---|---|---|
| United States vs. India | U.S. producer | 0 | 0 | 0 | 1 |
| United States vs. Other | U.S. producer | 0 | 0 | 0 | 1 |
| India vs. Other | U.S. producer | 0 | 0 | 0 | 1 |
| United States vs. India | Importers | 1 | 1 | 0 | 1 |
| United States vs. Other | Importers | 1 | 1 | 0 | 1 |
| India vs. Other | Importers | 1 | 1 | 0 | 1 |
| United States vs. India | Purchasers | 4 | 1 | 1 | 2 |
| United States vs. Other | Purchasers | 3 | 0 | 0 | 1 |
| India vs. Other | Purchasers | 3 | 0 | 0 | 0 |

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

## Elasticity estimates

This section discusses elasticity estimates; parties were encouraged to comment on these estimates and none did so.

### U.S. supply elasticity

The domestic supply elasticity for HCCIGM measures the sensitivity of the quantity supplied by U.S. producers to changes in the U.S. market price of HCCIGM. The elasticity of domestic supply depends on several factors including the level of excess capacity, the ease with which producers can alter capacity, producers' ability to shift to production of other products, the existence of inventories, and the availability of alternate markets for U.S.-produced HCCIGM. Analysis of these factors above indicates that the U.S. industry has the ability to greatly increase or decrease shipments to the U.S. market; an estimate in the range of 4 to 7 is suggested.

### U.S. demand elasticity

The U.S. demand elasticity for HCCIGM measures the sensitivity of the overall quantity demanded to a change in the U.S. market price of HCCIGM. This estimate depends on factors discussed above such as the existence, availability, and commercial viability of substitute products, as well as the component share of the HCCIGM in the production of any downstream

products. Based on the available information, the aggregate demand for HCCIGM is likely to be very to moderately inelastic; a range of -0.25 to -0.75 is suggested.

## Substitution elasticity

The elasticity of substitution depends upon the extent of product differentiation between the domestic and imported products.[41] Product differentiation, in turn, depends upon such factors as quality (e.g., chemistry, appearance, etc.) and conditions of sale (e.g., availability, sales terms/discounts/promotions, etc.). Based on available information, the elasticity of substitution between U.S.-produced HCCIGM and imported HCCIGM is likely to be in the range of 4 to 6. Factors contributing to this level of substitutability include similar quality, comparability on most purchase factors, little preference for particular country of origin or producers, interchangeability between domestic and subject sources, and limited significant factors other than price. Purchaser preferences for multiple suppliers and some lead time and availability differences at times during the period may somewhat limit substitutability.

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

# Part 3: U.S. producer's production, shipments, and employment

The Commission analyzes a number of factors in making injury determinations (see 19 U.S.C. §§ 1677(7)(B) and 1677(7)(C)). Information on the subsidies and dumping margins was presented in Part 1 of this report and information on the volume and pricing of imports of the subject merchandise is presented in Part 4 and Part 5. Information on the other factors specified is presented in this section and/or Part 6 and (except as noted) is based on the questionnaire response of Magotteaux, which accounted for 100.0 percent of U.S. production of HCCIGM during 2024.

## U.S. producers

The Commission issued a U.S. producer questionnaire to four firms based on information contained in the petition and in the preliminary phase of these investigations. Three firms provided usable data on their operations, one producer of HCCIGM and three producers of forged grinding media.[1] [2] Table 3.1 lists the U.S. producer of HCCIGM, its production location, position on the petition, and share of total production.

**Table 3.1 HCCIGM: U.S. producer Magotteaux, its position on the petition, production location, and shares of reported production, 2024**

Share in percent

| Firm | Position on petition | Production location(s) | Share of production |
|---|---|---|---|
| Magotteaux | Petitioner | Pulaski, TN | 100.0 |

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

[1] Gerdau Ameristeel US Inc. ("Gerdau"), Molycop, and Vinton Ball LLC ("Vinton") reported production of exclusively forged grinding media, with no reported production of high chrome cast iron grinding media. Data on these firms' operations on forged grinding media are presented in table C-2, Appendix E, and Appendix F of this report.

[2] No firm reported producing LCCIGM in the United States since January 1, 2022.

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

**Table 3.2 HCCIGM: U.S. producer Magotteaux's ownership, related and/or affiliated firms**

| Reporting firm | Relationship type and related firm | Details of relationship |
|---|---|---|
| Magotteaux | *** | *** |
| Magotteaux | *** | *** |
| Magotteaux | *** | *** |
| Magotteaux | *** | *** |
| Magotteaux | *** | *** |
| Magotteaux | *** | *** |
| Magotteaux | *** | *** |

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

As indicated in table 3.2, Magotteaux is related to foreign producers of in-scope products in non-subject countries (i.e., Brazil, Canada, South Africa, and Thailand) and *** related to U.S. importers of the subject merchandise.[3] In addition, as discussed in greater detail below, Magotteaux reported that it *** and that it *** the subject merchandise from U.S. importers.[4]

[3] Conference transcript, p. 97 (Jacobson); hearing transcript, p. 93 (Shah).

[4] Although Magotteaux ***, it did import HCCIGM from nonsubject sources, specifically from related firms in Canada and Thailand. The ratio of these imports to Magotteaux production ranged from *** percent to *** percent. Magotteaux's U.S. importer questionnaire, section II-6a. Hearing transcript, p. 79-80 (Drake); pp. 79-80 (Hannemann); p. 101 (Martinez).

Producers in the United States were asked to report any change in the character of their operations or organization relating to the production of HCCIGM since January 1, 2022. Magotteaux indicated in its questionnaire that it had experienced such changes, as shown in table 3.3.

**Table 3.3 HCCIGM: U.S. producer Magotteaux's reported changes in operations, since January 1, 2022**

| Item | Firm name and narrative response on changes in operations |
|---|---|
| Production curtailments | ***. |
| Weather-related or force majeure events | ***. |

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

## U.S. production, capacity, and capacity utilization

Table 3.4 presents Magotteaux's installed and practical capacity and production on the same equipment. Installed overall capacity, practical overall capacity, and practical HCCIGM capacity remained flat from 2022 to 2024.[5] [6] The production line at Magotteaux's Pulaski, Tennessee, facility used to produce HCCIGM is ***.[7] Production initially decreased from 2022 to 2023 by *** percent, then increased from 2023 to 2024 by *** percent, for a net increase of *** percent from 2022 to 2024. As capacity remained flat, the fluctuations in production resulted in practical HCCIGM capacity utilization decreasing by *** percentage points between 2022 and 2023 before increasing by *** percentage points from 2023 to 2024, for an overall increase of *** percentage points.[8]

**Table 3.4 HCCIGM: U.S. producer Magotteaux's installed and practical capacity and production on the same equipment as in-scope production, by period**

Capacity and production in short tons; utilization in percent

| Item | Measure | 2022 | 2023 | 2024 |
|---|---|---|---|---|
| Installed overall | Capacity | *** | *** | *** |
| Installed overall | Production | *** | *** | *** |
| Installed overall | Utilization | *** | *** | *** |
| Practical overall | Capacity | *** | *** | *** |
| Practical overall | Production | *** | *** | *** |
| Practical overall | Utilization | *** | *** | *** |
| Practical HCCIGM | Capacity | *** | *** | *** |
| Practical HCCIGM | Production | *** | *** | *** |
| Practical HCCIGM | Utilization | *** | *** | *** |

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

[5] Regarding the ability to reach installed overall capacity, Magotteaux stated that, ***. Magotteaux's U.S. producer questionnaire, section II-3e.

[6] Magotteaux ***. Magotteaux's U.S. producer questionnaire response, sections II-3c and II-3d.

[7] Magotteaux's U.S. producer questionnaire, section II-4b.

[8] Magotteaux indicated that, for its Pulaski, Tennessee facility, a capacity utilization rate of 85 percent is considered a "target" or "basic threshold" needed to achieve profitability. Conference transcript, p. 65 (Hannemann).

**Figure 3.1 HCCIGM: U.S. producer Magotteaux's output, by period**

*  *  *  *  *  *

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

## Alternative products

Magotteaux ***.

## U.S. producer's U.S. shipments and exports

Table 3.5 presents U.S. producer Magotteaux's U.S. shipments, export shipments, and total shipments.[9]

**Table 3.5 HCCIGM: U.S. producer Magotteaux's total shipments, by destination and period**

Quantity in short tons; value in 1,000 dollars; unit value in dollars per short ton; shares in percent

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

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

Magotteaux's U.S. shipments by quantity and by value decreased annually from 2022 to 2024, for overall declines of *** and *** percent, respectively. The quantity of U.S. shipments declined by *** percent during 2022 to 2023 and by *** percent during 2023 to 2024, while U.S. shipments by value first declined by *** percent during 2022 to 2023, then declined by a further *** percent during 2023 to 2024. The average unit values ("AUV") of U.S. shipments initially declined by *** percent during 2022 to 2023, and increased by *** percent during 2023 to 2024.

U.S. shipments as a share of total shipments remained at roughly *** percent during 2022 to 2023, both in terms of quantity and value, and subsequently declined by *** and *** percentage points, respectively, from 2023 to 2024. Over the same 2023 to 2024 period,

[9] Magotteaux's U.S. shipments ***. Magotteaux's U.S. producer questionnaire, section II-8.

the quantity and value of Magotteaux's export shipments increased by *** and *** percent, respectively. Unlike with U.S. shipments, the AUV of export shipments peaked in 2023 and decreased in 2024 for a net 2022 to 2024 decrease of *** percent.

Total shipments in terms of both quantity and value initially declined during 2022 to 2023, and then increased from 2023 to 2024 for a 2022 to 2024 net increase of *** percent in quantity and a net decrease of *** percent in value. The increases in the quantity and value of Magotteaux's total shipments from 2023 to 2024 were driven solely by the increase in export shipments over the same period.[10] [11] The 2022 to 2024 net increase in the quantity of total shipments, alongside the simultaneous net decrease in value, resulted in a *** percent decrease in the AUV of Magotteaux's total shipments of HCCIGM from 2022 to 2024. The 2022 to 2024 decrease in the AUV of Magotteaux's total shipments corresponded to decreases in the AUV of U.S. shipments and exports over the same period.

Table 3.6 presents U.S. producer Magotteaux's U.S. shipments of HCCIGM by chrome content and period. Despite small fluctuations, HCCIGM of a chrome content greater than or equal to 15 percent comprised *** of Magotteaux's U.S. shipments of HCCIGM during the period for which data were collected. U.S. shipments of HCCIGM with a chrome content greater than or equal to 10 percent and less than 15 percent, as well as HCCIGM with a chrome content greater than or equal to 15 percent, each declined overall from 2022 to 2024, with declines of *** and *** percent, respectively.

[10] Regarding the increase in export shipments, Magotteaux explained that, "{Its} sister plant in Canada experienced a significant fire in 2024 that actually did impair the Canadian plant's production and deliveries. This exceptional circumstance led Magotteaux to step up and increase shipments from the United States to {Canada}in 2024, as reflected in the increased export volumes reported in the company's questionnaire response. {…} However, because Magotteaux's sister facility in Canada has now resumed production, the need to source material from Magotteaux's U.S. operations has decreased with the aim of not serving any Canadian customers from the United States. Accordingly. Magotteaux will not see this same economic bump from increased exports in the future." Magotteaux's prehearing brief, p. 22 and hearing transcript, p. 8 (Cloutier).

[11] ***. Staff verification report, May 7, 2025.

**Table 3.6 HCCIGM: U.S. producer Magotteaux's U.S. shipments, by chrome content and period**

Quantity in short tons; share in percent

| Chrome content | Measure | 2022 | 2023 | 2024 |
|---|---|---|---|---|
| >=7 and <10 percent | Quantity | *** | *** | *** |
| >=10 and <15 percent | Quantity | *** | *** | *** |
| >=15 percent | Quantity | *** | *** | *** |
| All chrome contents | Quantity | *** | *** | *** |
| >=7 and <10 percent | Share | *** | *** | *** |
| >=10 and <15 percent | Share | *** | *** | *** |
| >=15 percent | Share | *** | *** | *** |
| All chrome contents | Share | 100.0 | 100.0 | 100.0 |

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

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

## U.S. producer's inventories

Table 3.7 presents U.S. producer Magotteaux's end-of-period inventories and the ratio of these inventories to Magotteaux's production, U.S. shipments, and total shipments. Magotteaux's inventories of HCCIGM steadily increased by *** percent from 2022 to 2024. Inventories of HCCIGM as a ratio to U.S. production, U.S. shipments, and total shipments likewise increased each year during 2022 to 2024, with overall increases ranging from *** to *** percentage points.

**Table 3.7 HCCIGM: U.S. producer Magotteaux's inventories and their ratio to select items, by period**

Quantity in short tons; ratio in percent

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

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

## U.S. producer's imports from subject sources

Magotteaux ***.

## U.S. producer's purchases of imports from subject sources

Magotteaux ***.

## U.S. employment, wages, and productivity

Table 3.8 shows U.S. producer Magotteaux's employment-related data. The number of PRWs decreased overall by *** percent from 2022 to 2024, decreasing by *** percent during 2022 to 2023 and subsequently increasing by *** percent from 2023 to 2024.[12] Total hours worked declined annually from 2022 to 2024, for an overall decline of *** percent. The decrease in total hours worked outpaced the decrease in PRWs, leading to a decline of *** percent in hours worked per PRW from 2022 to 2024.[13]

Wages paid decreased by *** percent from 2022 to 2024, while hourly wages increased by *** percent and productivity increased by *** over the same period. Unit labor costs steadily declined by *** percent over the period reported.

**Table 3.8 HCCIGM: U.S. producer Magotteaux's employment related information, by period**

| Item | 2022 | 2023 | 2024 |
|---|---|---|---|
| Production and related workers (PRWs) (number) | *** | *** | *** |
| Total hours worked (1,000 hours) | *** | *** | *** |
| Hours worked per PRW (hours) | *** | *** | *** |
| Wages paid ($1,000) | *** | *** | *** |
| Hourly wages (dollars per hour) | *** | *** | *** |
| Productivity (short tons per 1,000 hours) | *** | *** | *** |
| Unit labor costs (dollars per short ton) | *** | *** | *** |

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

[12] Magotteaux stated at the hearing that "Following the surge of Indian imports in 2022, we've had to shorten shifts and even sometimes stop production due to a lack of orders." Hearing transcript, p. 20 (Hannemann).

[13] Magotteaux stated that it ***. Magotteaux's U.S. producer questionnaire, section II-10.

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

## U.S. importers

The Commission issued importer questionnaires to nine firms believed to be importers of subject HCCIGM, as well as to the only producer of HCCIGM.[1] Usable questionnaire responses were received from five companies, representing virtually all U.S. imports from India in 2024 under HTS subheading 7325.91.00, a "basket" category and *** percent of official import statistics for nonsubject sources in 2024.[2] Table 4.1 lists all responding U.S. importers of HCCIGM from India and other sources, their locations, and their shares of U.S. imports, in 2024.

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

Share in percent

| Firm | Headquarters | India | Nonsubject sources | All import sources |
|---|---|---|---|---|
| Ash Grove | Overland Park, KS | *** | *** | *** |
| Magotteaux | Franklin, TN | *** | *** | *** |
| Molycop | Omaha, NE | *** | *** | *** |
| Teck Alaska | Anchorage, AK | *** | *** | *** |
| Vega | Brentwood, TN | *** | *** | *** |
| All firms | Various | 100.0 | 100.0 | 100.0 |

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

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

[1] The Commission issued questionnaires to those firms identified in the petition; staff research; and proprietary, Census-edited Customs' import records. Commission staff also issued questionnaires to potential importers of forged grinding media and LCCIGM. There were no responding firms which reported imports from any source of LCCIGM. Only one responding firm, ***, reported imports of forged grinding media since January 1, 2022. *** U.S. importer questionnaire, section V-1. Data on imports of forged grinding media are presented in Appendix E of this report.

[2] Imports of HCCIGM reported by Vega, which accounted for *** reported subject imports, were reported in the firm's questionnaire response ***. As a result, in 2023 subject import questionnaire data in this report ***. Vega's U.S. importer questionnaire, section II-5a. Appendix G contains the official import statistics for the period of investigation, under HTS reporting number 7325.91.0000.

## U.S. imports

Tables 4.2 and 4.3 as well as figure 4.1 present data for U.S. imports of HCCIGM from India and all other sources.

**Table 4.2 HCCIGM: U.S. imports by source and period**

Quantity in short tons; value in 1,000 dollars; unit value in dollars per short ton

| Source | Measure | 2022 | 2023 | 2024 |
|---|---|---|---|---|
| India | Quantity | *** | *** | *** |
| Nonsubject sources | Quantity | *** | *** | *** |
| All import sources | Quantity | *** | *** | *** |
| India | Value | *** | *** | *** |
| Nonsubject sources | Value | *** | *** | *** |
| All import sources | Value | *** | *** | *** |
| India | Unit value | *** | *** | *** |
| Nonsubject sources | Unit value | *** | *** | *** |
| All import sources | Unit value | *** | *** | *** |

Table continued.

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

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

| Source | Measure | 2022 | 2023 | 2024 |
|---|---|---|---|---|
| India | Share of quantity | *** | *** | *** |
| Nonsubject sources | Share of quantity | *** | *** | *** |
| All import sources | Share of quantity | 100.0 | 100.0 | 100.0 |
| India | Share of value | *** | *** | *** |
| Nonsubject sources | Share of value | *** | *** | *** |
| All import sources | Share of value | 100.0 | 100.0 | 100.0 |
| India | Ratio | *** | *** | *** |
| Nonsubject sources | Ratio | *** | *** | *** |
| All import sources | Ratio | *** | *** | *** |

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

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

* * * * * * *

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

U.S. imports of HCCIGM from India decreased year-on-year over the period reported, with an overall decline of *** percent from 2022 to 2024. Vega accounted for no less than *** percent of subject imports in each period reported, followed by ***, which accounted for between *** and *** percent of subject imports over the 2022 to 2024 period.[3] [4] By value, subject imports also decreased annually from 2022 to 2024 for a net

[3] Molycop reported ***. Molycop also reported ***. Molycop's U.S. importer questionnaire, sections I-8 and II-7. Email from ***, March 28, 2025. Magotteaux ***. Magotteaux's U.S. importer questionnaire, section II-5a. Ash Grove ***. Ash Grove's U.S. importer questionnaire, section II-5a. Email from ***, March 24, 2025.

[4] ***. Email from ***, March 20, 2025. Email from ***, March 24, 2025.

decrease of *** percent. Although both the quantity and value of subject imports decreased from 2022 to 2024, the magnitude of the decrease in value outpaced that of quantity, resulting in a *** percent decrease in the average unit value ("AUV") of subject imports over that period. As Vega never comprised less than *** percent of subject imports in terms of value, and *** percent in terms of quantity, the 2022 to 2024 decline in the AUV of subject imports was driven primarily by the decline in the AUVs reported by Vega over that period.[5]

The quantity of imports of HCCIGM from nonsubject sources initially declined by *** percent from 2022 to 2023 before increasing by *** percent from 2023 to 2024, for a 2022 to 2024 net increase of *** percent.[6] Nonsubject imports by value followed a similar trajectory, but unlike with quantity, the 2023-24 increase in the value of nonsubject imports topped out at a level still below the beginning of the period, with a net decline of *** percent from 2022 to 2024. As with subject imports, the AUV of imports from nonsubject sources decreased from 2022 to 2024 for a decline of *** percent, with the AUV of imports from nonsubject sources higher than reported imports from subject sources in all periods reported.

Subject imports accounted for *** of HCCIGM imports, by quantity and by value, throughout the period reported. Thus, the 2022 to 2024 decreases in the quantity and value of subject imports drove similar trends in the quantity and value of total imports, despite the 2022 to 2024 increase in the quantity of nonsubject imports. Imports of HCCIGM from all sources decreased by *** percent, by quantity, and *** percent, by value, over the period reported. The AUV of total imports declined by *** percent over the same period, driven by the similar decrease in the AUV of subject imports.

As a ratio to U.S. production, imports from India peaked in 2023 and decreased overall by *** percentage points during 2022 to 2024, whereas nonsubject imports increased by *** percentage points.

[5] In response to staff questions about changes in the AUV of subject imports, *** Email from ***, May 20, 2024.

[6] Imports from all other sources consisted *** ***.

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

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

| Source | Measure | 2022 to 2024 | 2022 to 2023 | 2023 to 2024 |
|---|---|---|---|---|
| India | %Δ Quantity | ▼*** | ▼*** | ▼*** |
| Nonsubject sources | %Δ Quantity | ▲*** | ▼*** | ▲*** |
| All import sources | %Δ Quantity | ▼*** | ▼*** | ▼*** |
| India | %Δ Value | ▼*** | ▼*** | ▼*** |
| Nonsubject sources | %Δ Value | ▼*** | ▼*** | ▲*** |
| All import sources | %Δ Value | ▼*** | ▼*** | ▼*** |
| India | %Δ Unit value | ▼*** | ▼*** | ▲*** |
| Nonsubject sources | %Δ Unit value | ▼*** | ▼*** | ▼*** |
| All import sources | %Δ Unit value | ▼*** | ▼*** | ▲*** |
| India | ppt Δ Quantity | ▼*** | ▲*** | ▼*** |
| Nonsubject sources | ppt Δ Quantity | ▲*** | ▼*** | ▲*** |
| All import sources | ppt Δ Quantity | *** | *** | *** |
| India | ppt Δ Value | ▼*** | ▲*** | ▼*** |
| Nonsubject sources | ppt Δ Value | ▲*** | ▼*** | ▲*** |
| All import sources | ppt Δ Value | *** | *** | *** |
| India | ppt Δ Ratio | ▼*** | ▲*** | ▼*** |
| Nonsubject sources | ppt Δ Ratio | ▲*** | ▼*** | ▲*** |
| All import sources | ppt Δ Ratio | ▼*** | ▲*** | ▼*** |

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

Note: Zeroes, null values, and undefined calculations are suppressed and shown as "—". Period changes preceded by a "▲" represent an increase, while period changes preceded by a "▼" represent a decrease.

Table 4.4 presents U.S. importers' U.S. shipments of HCCIGM imports from India by chrome content level and by period. Importer's U.S. shipments of HCCIGM across all chrome levels decreased during 2022 to 2024, and HCCIGM with a chrome content greater than or equal to 15 percent comprised the *** of importer's U.S. shipments of HCCIGM throughout the period for which data was collected.[7]

[7] ***. *** U.S. importer questionnaire, section II-5b.

**Table 4.4 HCCIGM: U.S. importers' U.S. shipments of imports from India, by chrome content and period**

Quantity in short tons; share in percent

| Chrome content | Measure | 2022 | 2023 | 2024 |
|---|---|---|---|---|
| >=7 and <10 percent | Quantity | *** | *** | *** |
| >=10 and <15 percent | Quantity | *** | *** | *** |
| >=15 percent | Quantity | *** | *** | *** |
| All chrome contents | Quantity | *** | *** | *** |
| >=7 and <10 percent | Share | *** | *** | *** |
| >=10 and <15 percent | Share | *** | *** | *** |
| >=15 percent | Share | *** | *** | *** |
| All chrome contents | Share | 100.0 | 100.0 | 100.0 |

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

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

Table 4.5 presents U.S. importers' U.S. shipments of HCCIGM from nonsubject sources by chrome content level and by period. With the exception of 2024, importers' U.S. shipments of HCCIGM from nonsubject sources throughout the period for which data were collected were comprised entirely of HCCIGM ***.[8]

**Table 4.5 HCCIGM: U.S. importers' U.S. shipments of imports from nonsubject sources, by chrome content and period**

Quantity in short tons; share in percent

| Chrome content | Measure | 2022 | 2023 | 2024 |
|---|---|---|---|---|
| >=7 and <10 percent | Quantity | *** | *** | *** |
| >=10 and <15 percent | Quantity | *** | *** | *** |
| >=15 percent | Quantity | *** | *** | *** |
| All chrome contents | Quantity | *** | *** | *** |
| >=7 and <10 percent | Share | *** | *** | *** |
| >=10 and <15 percent | Share | *** | *** | *** |
| >=15 percent | Share | *** | *** | *** |
| All chrome contents | Share | 100.0 | 100.0 | 100.0 |

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

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

[8] ***. *** U.S. importer questionnaire, section II-4.

## Negligibility

The statute requires that an investigation be terminated without an injury determination if imports of the subject merchandise are found to be negligible.[9] Negligible imports are generally defined in the Act, as amended, as imports from a country of merchandise corresponding to a domestic like product where such imports account for less than 3 percent of the volume of all such merchandise imported into the United States in the most recent 12-month period for which data are available that precedes the filing of the petition or the initiation of the investigation. However, if there are imports of such merchandise from a number of countries subject to investigations initiated on the same day that individually account for less than 3 percent of the total volume of the subject merchandise, and if the imports from those countries collectively account for more than 7 percent of the volume of all such merchandise imported into the United States during the applicable 12-month period, then imports from such countries are deemed not to be negligible.[10] Imports from India accounted for *** percent of total imports of HCCIGM by quantity during April 2023 through March 2024.

**Table 4.6 HCCIGM: U.S. imports in the twelve-month period preceding the filing of the petition, April 2023 through March 2024**

Quantity in short tons; share in percent

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

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

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

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

## Apparent U.S. consumption and market shares

### Quantity

Table 4.7 presents data on apparent U.S. consumption and U.S. market shares by quantity for HCCIGM. The overall market for HCCIGM, by quantity, steadily decreased from 2022 to 2024, for a net decline of *** percent.[11] U.S. shipments of HCCIGM by U.S. producer Magotteaux decreased annually from 2022 to 2024 for an overall decline of *** percent.[12] U.S. shipments of imports of HCCIGM also regularly declined from 2022 to 2024, driven primarily by the *** percent decline in U.S. shipments of subject imports over that period.[13] The market share of subject imports and of U.S. producer Magotteaux each increased from 2022 to 2023 and decreased from 2023 to 2024. The market share of subject imports was *** percentage points lower in 2024 compared to 2022, while the market share of U.S. producer Magotteaux was *** percentage points higher. Nonsubject sources' market share decreased by *** percentage points from 2022 to 2023 and then increased in 2024, with a 2024 market share *** percentage points higher than in 2022.

[11] ***. Magotteaux's U.S. importer questionnaire, section III-14; Magotteaux's U.S. producer questionnaire, section IV-14.

[12] Magotteaux stated that increased inventories were possibly linked to "overbuying in 2022 as we were coming out of COVID…that…sometimes weighs down the market in the following years as that huge surge …couldn't actually all be absorbed in the market." Hearing transcript, p. 54—55 (Drake).

[13] ***.

**Table 4.7 HCCIGM: Apparent U.S. consumption and market shares based on quantity, by source and period**

Quantity in short tons; share in percent

| Source | Measure | 2022 | 2023 | 2024 |
|---|---|---|---|---|
| U.S. producer | Quantity | *** | *** | *** |
| India | Quantity | *** | *** | *** |
| Nonsubject sources | Quantity | *** | *** | *** |
| All import sources | Quantity | *** | *** | *** |
| All sources | Quantity | *** | *** | *** |
| U.S. producers | Share | *** | *** | *** |
| India | Share | *** | *** | *** |
| Nonsubject sources | Share | *** | *** | *** |
| All import sources | Share | *** | *** | *** |
| All sources | Share | 100.0 | 100.0 | 100.0 |

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

**Figure 4.2 HCCIGM: Apparent U.S. consumption based on quantity, by source and period**

* * * * * * *

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

## Value

Table 4.8 presents data on apparent U.S. consumption and U.S. market shares by value for HCCIGM. The overall market for HCCIGM, by value, regularly decreased from 2022 to 2024, for a net decline of *** percent. The value of U.S. producer Magotteaux's shipments, as well as that of total imports of HCCIGM, both contributed to the overall 2022 to 2024 decline, with U.S. producer Magotteaux's shipments declining by *** percent and the value of total imports of HCCIGM declining by *** percent. Among imports, the value of subject imports steadily declined from 2022 to 2024 for a net decline of *** percent, while the value of imports from nonsubject sources initially decreased by *** percent from 2022 to 2023, before rising in 2024 for a net 2022 to 2024 decline of *** percent.[14] The market share of U.S. producer Magotteaux and of nonsubject imports each decreased from 2022 to 2023 and then increased from 2023 to 2024, with net decreases of *** and *** percentage points, respectively. The market share of subject imports increased by *** percentage points from 2022 to 2023 and decreased from 2023 to 2024, for an overall increase of *** percentage points from 2022 to 2024.

**Table 4.8 HCCIGM: Apparent U.S. consumption and market shares based on value, by source and period**

Value in 1,000 dollars; share in percent

| Source | Measure | 2022 | 2023 | 2024 |
|---|---|---|---|---|
| U.S. producer | Value | *** | *** | *** |
| India | Value | *** | *** | *** |
| Nonsubject sources | Value | *** | *** | *** |
| All import sources | Value | *** | *** | *** |
| All sources | Value | *** | *** | *** |
| U.S. producer | Share | *** | *** | *** |
| India | Share | *** | *** | *** |
| Nonsubject sources | Share | *** | *** | *** |
| All import sources | Share | *** | *** | *** |
| All sources | Share | 100.0 | 100.0 | 100.0 |

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

[14] *** reported U.S. shipments of imports from nonsubject sources. *** U.S. importer questionnaire, section II-6a.

**Figure 4.3 HCCIGM: Apparent U.S. consumption based on value, by source and period**

* * * * * * *

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

# Part 5: Pricing data

## Factors affecting prices

### Raw material costs

The major raw materials to produce HCCIGM are ferrochrome and steel scrap. Magotteaux reported that, in 2024, ferrochrome comprised *** percent of its total raw material costs, stainless steel and other steel scrap comprised *** percent, and other raw materials comprised *** percent (see Part 6). Ferrochrome prices increased sharply in 2022, reaching a period high in June 2022, at a level over *** percent higher than the price in January 2022 (figure 5.1 and table 5.1). Ferrochrome prices declined after June 2022 and fell below January 2022 levels in November of 2023. Steel scrap prices fluctuated within a narrow range over the period.

**Figure 5.1 Raw materials: Price indices of ferrochrome and steel scrap, January 2022 to February 2025**

*  *  *  *  *  *  *

Source: ***, accessed March 18, 2025.

**Table 5.1 Raw materials: Ferrochrome and steel scrap, monthly average prices and index, January 2022 to February 2025**

Price for ferrochrome in cents per pound; Price for steel scrap in dollars per ton

| Period | Ferrochrome index | Steel Scrap index | Ferrochrome price | Steel scrap price |
|---|---|---|---|---|
| January 2022 | *** | *** | *** | *** |
| February 2022 | *** | *** | *** | *** |
| March 2022 | *** | *** | *** | *** |
| April 2022 | *** | *** | *** | *** |
| May 2022 | *** | *** | *** | *** |
| June 2022 | *** | *** | *** | *** |
| July 2022 | *** | *** | *** | *** |
| August 2022 | *** | *** | *** | *** |
| September 2022 | *** | *** | *** | *** |
| October 2022 | *** | *** | *** | *** |
| November 2022 | *** | *** | *** | *** |
| December 2022 | *** | *** | *** | *** |
| January 2023 | *** | *** | *** | *** |
| February 2023 | *** | *** | *** | *** |
| March 2023 | *** | *** | *** | *** |
| April 2023 | *** | *** | *** | *** |
| May 2023 | *** | *** | *** | *** |
| June 2023 | *** | *** | *** | *** |
| July 2023 | *** | *** | *** | *** |
| August 2023 | *** | *** | *** | *** |
| September 2023 | *** | *** | *** | *** |
| October 2023 | *** | *** | *** | *** |
| November 2023 | *** | *** | *** | *** |
| December 2023 | *** | *** | *** | *** |
| January 2024 | *** | *** | *** | *** |
| February 2024 | *** | *** | *** | *** |
| March 2024 | *** | *** | *** | *** |
| April 2024 | *** | *** | *** | *** |
| May 2024 | *** | *** | *** | *** |
| June 2024 | *** | *** | *** | *** |
| July 2024 | *** | *** | *** | *** |
| August 2024 | *** | *** | *** | *** |
| September 2024 | *** | *** | *** | *** |
| October 2024 | *** | *** | *** | *** |
| November 2024 | *** | *** | *** | *** |
| December 2024 | *** | *** | *** | *** |
| January 2025 | *** | *** | *** | *** |
| February 2025 | *** | *** | *** | *** |

Source: ***, accessed March 18, 2025.

### Transportation costs to the U.S. market

Transportation costs for HCCIGM shipped from India to the United States averaged 5.8 percent during 2024. These estimates were derived from official import data and represent the transportation and other charges on imports.[1]

### U.S. inland transportation costs

*** reported that they typically arrange transportation to their customers. Magotteaux reported U.S. inland transportation costs of *** percent, *** reported *** percent, and *** reported *** percent. Magotteaux typically ships HCCIGM by truck (either in the back of a tip truck, in drums, or in one-metric-ton bags) from its production facility in Pulaski, Tennessee, although for longer distances such as shipping to Nevada, rail may be used.[2]

## Pricing practices

### Pricing methods

Magotteaux sells to mining companies on ***. The raw material price adjustments "may be subject to additional negotiation" and Magotteaux may also attempt to adjust prices annually for inflation.[3] Magotteaux's sales to cement customers are typically on a spot basis although it has a small amount of contract sales.[4]

[1] The estimated transportation costs were obtained by subtracting the customs value from the c.i.f. value of the imports for 2024 and then dividing by the customs value based on the HTS statistical reporting number 7325.91.0000.

[2] Conference transcript, p. 80 (Hannemann); Petition Volume 1, p. 15.

[3] Conference transcript, pp. 18 to 19, 46 to 49 (Jacaruso).

[4] Conference transcript, p. 22 (Tallent).

AIA/Vega has ***.[5] Magotteaux reported setting prices ***, *** (table 5.2).

**Table 5.2 HCCIGM: Count of U.S. producer's and importers' reported price setting methods**

| Method | U.S. producer | Importers |
|---|---|---|
| Transaction-by-transaction | *** | *** |
| Contract | *** | *** |
| Set price list | *** | *** |
| Other | *** | *** |
| Responding firms | 1 | 2 |

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

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

Magotteaux's sales were mainly via *** (table 5.3). ***.

Importer *** reported that ***.

Importer *** reported that ***.

[5] AIA/Vega's postconference brief, appendix, p. 6.

**Table 5.3 HCCIGM: U.S. producers' and importers' shares of commercial U.S. shipments by type of sale, 2024**

Share in percent

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

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

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

Two purchasers reported that they purchase product weekly, four purchase monthly, two purchase quarterly, and two purchase annually. Seven of nine responding purchasers reported that their purchasing frequency had not changed since 2022. Most (eight of nine) purchasers contact one to three suppliers before making a purchase.

## Sales terms and discounts

The U.S. producer and importers typically ***. Firms generally reported ***, although Magotteaux reported ***. Vega reported ***.

## Price leadership

One purchaser, ***, reported that there were price leaders in the HCCIGM market, citing *** as a price leader. The purchaser indicated the presence of price leaders by the firm having the lowest total price for a delivered product.

## Price data

The Commission requested the U.S. producer and importers to provide quarterly data for the total quantity and f.o.b. value of the following HCCIGM products shipped to unrelated U.S. customers during January 2022 to December 2024.

***Product 1***.-- Cast iron grinding media with a nominal diameter of 50mm (+/-3 mm) and chrome content between 18.5 and 22 percent.

***Product 2***.-- Cast iron grinding media with a nominal diameter of 40mm (+/-3 mm) and chrome content between 18.5 and 22 percent.

***Product 3***.-- Cast iron grinding media with a nominal diameter of 25mm (+/-3 mm) and chrome content between 10 and 13.5 percent.

***Product 4***.-- Cast iron grinding media with a nominal diameter of 90mm (+/-3 mm) and chrome content between 15.5 and 19 percent.

***Product 5***.-- Cast iron grinding media with a nominal diameter of 40mm (+/-3 mm) and chrome content between 25 and 28 percent.

***Product 6***.-- Cast iron grinding media with a nominal diameter of 80mm (+/-3 mm) and chrome content between 16 and 19 percent.

One U.S. producer and one importer provided usable pricing data for sales of the requested products, although not all firms reported pricing for all products for all quarters.[6] Pricing data reported by these firms accounted for approximately *** percent of the U.S. producer's commercial U.S. shipments of HCCIGM and *** percent of commercial U.S. shipments of subject imports from India in 2024.[7]

Price data for products 1-6 are presented in tables 5.4 to 5.9 and figures 5.2 to 5.7.[8]

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

[7] Pricing coverage is based on U.S. shipments reported in questionnaires.

[8] Importer ***.

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

Price in dollars per short ton, quantity in short tons, margin in percent.

| Period | U.S. price | U.S. quantity | India price | India quantity | India margin |
|---|---|---|---|---|---|
| 2022 Q1 | *** | *** | *** | *** | *** |
| 2022 Q2 | *** | *** | *** | *** | *** |
| 2022 Q3 | *** | *** | *** | *** | *** |
| 2022 Q4 | *** | *** | *** | *** | *** |
| 2023 Q1 | *** | *** | *** | *** | *** |
| 2023 Q2 | *** | *** | *** | *** | *** |
| 2023 Q3 | *** | *** | *** | *** | *** |
| 2023 Q4 | *** | *** | *** | *** | *** |
| 2024 Q1 | *** | *** | *** | *** | *** |
| 2024 Q2 | *** | *** | *** | *** | *** |
| 2024 Q3 | *** | *** | *** | *** | *** |
| 2024 Q4 | *** | *** | *** | *** | *** |

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

Note: Product 1: Cast iron grinding media with a nominal diameter of 50mm (+/-3 mm) and chrome content between 18.5 and 22 percent.

**Figure 5.2 HCCIGM: Weighted-average f.o.b. prices and quantities of domestic and imported product 1, by source and quarter**

**Price of product 1**

*  *  *  *  *  *  *

**Volume of product 1**

*  *  *  *  *  *  *

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

Note: Product 1: Cast iron grinding media with a nominal diameter of 50mm (+/-3 mm) and chrome content between 18.5 and 22 percent.

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

Price in dollars per short ton, quantity in short tons, margin in percent.

| Period | U.S. price | U.S. quantity | India price | India quantity | India margin |
|---|---|---|---|---|---|
| 2022 Q1 | *** | *** | *** | *** | *** |
| 2022 Q2 | *** | *** | *** | *** | *** |
| 2022 Q3 | *** | *** | *** | *** | *** |
| 2022 Q4 | *** | *** | *** | *** | *** |
| 2023 Q1 | *** | *** | *** | *** | *** |
| 2023 Q2 | *** | *** | *** | *** | *** |
| 2023 Q3 | *** | *** | *** | *** | *** |
| 2023 Q4 | *** | *** | *** | *** | *** |
| 2024 Q1 | *** | *** | *** | *** | *** |
| 2024 Q2 | *** | *** | *** | *** | *** |
| 2024 Q3 | *** | *** | *** | *** | *** |
| 2024 Q4 | *** | *** | *** | *** | *** |

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

Note: Product 2: Cast iron grinding media with a nominal diameter of 40mm (+/-3 mm) and chrome content between 18.5 and 22 percent.

**Figure 5.3 HCCIGM: Weighted-average f.o.b. prices and quantities of domestic and imported product 2, by source and quarter**

**Price of product 2**

*  *  *  *  *  *  *

**Volume of product 2**

*  *  *  *  *  *  *

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

Note: Product 2: Cast iron grinding media with a nominal diameter of 40mm (+/-3 mm) and chrome content between 18.5 and 22 percent.

**Table 5.6 HCCIGM: Weighted-average f.o.b. prices and quantities of domestic and imported product 3 and margins of underselling/(overselling), by source and quarter**

Price in dollars per short ton, quantity in short tons, margin in percent.

| Period | U.S. price | U.S. quantity | India price | India quantity | India margin |
|---|---|---|---|---|---|
| 2022 Q1 | *** | *** | *** | *** | *** |
| 2022 Q2 | *** | *** | *** | *** | *** |
| 2022 Q3 | *** | *** | *** | *** | *** |
| 2022 Q4 | *** | *** | *** | *** | *** |
| 2023 Q1 | *** | *** | *** | *** | *** |
| 2023 Q2 | *** | *** | *** | *** | *** |
| 2023 Q3 | *** | *** | *** | *** | *** |
| 2023 Q4 | *** | *** | *** | *** | *** |
| 2024 Q1 | *** | *** | *** | *** | *** |
| 2024 Q2 | *** | *** | *** | *** | *** |
| 2024 Q3 | *** | *** | *** | *** | *** |
| 2024 Q4 | *** | *** | *** | *** | *** |

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

Note: Product 3: Cast iron grinding media with a nominal diameter of 25mm (+/-3 mm) and chrome content between 10 and 13.5 percent.

**Figure 5.4 HCCIGM: Weighted-average f.o.b. prices and quantities of domestic and imported product 3, by source and quarter**

**Price of product 3**

* * * * * * *

**Volume of product 3**

* * * * * * *

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

Note: Product 3: Cast iron grinding media with a nominal diameter of 25mm (+/-3 mm) and chrome content between 10 and 13.5 percent.

**Table 5.7 HCCIGM: Weighted-average f.o.b. prices and quantities of domestic and imported product 4 and margins of underselling/(overselling), by source and quarter**

Price in dollars per short ton, quantity in short tons, margin in percent.

| Period | U.S. price | U.S. quantity | India price | India quantity | India margin |
|---|---|---|---|---|---|
| 2022 Q1 | *** | *** | *** | *** | *** |
| 2022 Q2 | *** | *** | *** | *** | *** |
| 2022 Q3 | *** | *** | *** | *** | *** |
| 2022 Q4 | *** | *** | *** | *** | *** |
| 2023 Q1 | *** | *** | *** | *** | *** |
| 2023 Q2 | *** | *** | *** | *** | *** |
| 2023 Q3 | *** | *** | *** | *** | *** |
| 2023 Q4 | *** | *** | *** | *** | *** |
| 2024 Q1 | *** | *** | *** | *** | *** |
| 2024 Q2 | *** | *** | *** | *** | *** |
| 2024 Q3 | *** | *** | *** | *** | *** |
| 2024 Q4 | *** | *** | *** | *** | *** |

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

Note: Product 4: Cast iron grinding media with a nominal diameter of 90mm (+/-3 mm) and chrome content between 15.5 and 19 percent.

**Figure 5.5 HCCIGM: Weighted-average f.o.b. prices and quantities of domestic and imported product 4, by source and quarter**

**Price of product 4**

* * * * * * *

**Volume of product 4**

* * * * * * *

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

Note: Product 4: Cast iron grinding media with a nominal diameter of 90mm (+/-3 mm) and chrome content between 15.5 and 19 percent.

**Table 5.8 HCCIGM: Weighted-average f.o.b. prices and quantities of domestic and imported product 5 and margins of underselling/(overselling), by source and quarter**

Price in dollars per short ton, quantity in short tons, margin in percent.

| Period | U.S. price | U.S. quantity | India price | India quantity | India margin |
|---|---|---|---|---|---|
| 2022 Q1 | *** | *** | *** | *** | *** |
| 2022 Q2 | *** | *** | *** | *** | *** |
| 2022 Q3 | *** | *** | *** | *** | *** |
| 2022 Q4 | *** | *** | *** | *** | *** |
| 2023 Q1 | *** | *** | *** | *** | *** |
| 2023 Q2 | *** | *** | *** | *** | *** |
| 2023 Q3 | *** | *** | *** | *** | *** |
| 2023 Q4 | *** | *** | *** | *** | *** |
| 2024 Q1 | *** | *** | *** | *** | *** |
| 2024 Q2 | *** | *** | *** | *** | *** |
| 2024 Q3 | *** | *** | *** | *** | *** |
| 2024 Q4 | *** | *** | *** | *** | *** |

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

Note: Product 5: Cast iron grinding media with a nominal diameter of 40mm (+/-3 mm) and chrome content between 25 and 28 percent.

**Figure 5.6 HCCIGM: Weighted-average f.o.b. prices and quantities of domestic and imported product 5, by source and quarter**

**Price of product 5**

*  *  *  *  *  *  *

**Volume of product 5**

*  *  *  *  *  *  *

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

Note: Product 5: Cast iron grinding media with a nominal diameter of 40mm (+/-3 mm) and chrome content between 25 and 28 percent.

**Table 5.9 HCCIGM: Weighted-average f.o.b. prices and quantities of domestic and imported product 6 and margins of underselling/(overselling), by source and quarter**

Price in dollars per short tons, quantity in short tons, margin in percent.

| Period | U.S. price | U.S. quantity | India price | India quantity | India margin |
|---|---|---|---|---|---|
| 2022 Q1 | *** | *** | *** | *** | *** |
| 2022 Q2 | *** | *** | *** | *** | *** |
| 2022 Q3 | *** | *** | *** | *** | *** |
| 2022 Q4 | *** | *** | *** | *** | *** |
| 2023 Q1 | *** | *** | *** | *** | *** |
| 2023 Q2 | *** | *** | *** | *** | *** |
| 2023 Q3 | *** | *** | *** | *** | *** |
| 2023 Q4 | *** | *** | *** | *** | *** |
| 2024 Q1 | *** | *** | *** | *** | *** |
| 2024 Q2 | *** | *** | *** | *** | *** |
| 2024 Q3 | *** | *** | *** | *** | *** |
| 2024 Q4 | *** | *** | *** | *** | *** |

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

Note: Product 6: Cast iron grinding media with a nominal diameter of 80mm (+/-3 mm) and chrome content between 16 and 19 percent.

**Figure 5.7 HCCIGM: Weighted-average f.o.b. prices and quantities of domestic and imported product 6, by source and quarter**

**Price of product 6**

*  *  *  *  *  *  *

**Volume of product 6**

*  *  *  *  *  *  *

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

Note: Product 6: Cast iron grinding media with a nominal diameter of 80mm (+/-3 mm) and chrome content between 16 and 19 percent.

## Price trends

Prices decreased overall during 2022 to 2024, increasing from Q1 2022 to Q2 2022 and then decreasing during the remainder of the period. Table 5.10 summarizes the price trends, by source and by product. Domestic price decreases ranged from *** percent during 2022 to 2024 and import price decreases ranged from *** percent.

**Table 5.10 HCCIGM: Summary of price data, by product and source, January 2022 to December 2024**

Quantity in short tons, price in dollars per short ton

| Product | Source | Number of quarters | Quantity of shipments | Low price | High price | First quarter price | Last quarter price | Percent change in price over period |
|---|---|---|---|---|---|---|---|---|
| Product 1 | United States | 12 | *** | *** | *** | *** | *** | *** |
| Product 1 | India | 12 | *** | *** | *** | *** | *** | *** |
| Product 2 | United States | 12 | *** | *** | *** | *** | *** | *** |
| Product 2 | India | 12 | *** | *** | *** | *** | *** | *** |
| Product 3 | United States | 12 | *** | *** | *** | *** | *** | *** |
| Product 3 | India | 12 | *** | *** | *** | *** | *** | *** |
| Product 4 | United States | 12 | *** | *** | *** | *** | *** | *** |
| Product 4 | India | 12 | *** | *** | *** | *** | *** | *** |
| Product 5 | United States | 11 | *** | *** | *** | *** | *** | *** |
| Product 5 | India | 4 | *** | *** | *** | *** | *** | *** |
| Product 6 | United States | 12 | *** | *** | *** | *** | *** | *** |
| Product 6 | India | 12 | *** | *** | *** | *** | *** | *** |

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

Note: Percent change column is percentage change from the first quarter 2022 to the last quarter in 2024.

**Table 5.11 HCCIGM: Indexed U.S. producer prices, by quarter and product**

Indices in percent, 2022 Q1 = 100.0 percent

| Period | Product 1 | Product 2 | Product 3 | Product 4 | Product 5 | Product 6 |
|---|---|---|---|---|---|---|
| 2022 Q1 | 100.0 | 100.0 | 100.0 | 100.0 | — | 100.0 |
| 2022 Q2 | *** | *** | *** | *** | 100.0 | *** |
| 2022 Q3 | *** | *** | *** | *** | *** | *** |
| 2022 Q4 | *** | *** | *** | *** | *** | *** |
| 2023 Q1 | *** | *** | *** | *** | *** | *** |
| 2023 Q2 | *** | *** | *** | *** | *** | *** |
| 2023 Q3 | *** | *** | *** | *** | *** | *** |
| 2023 Q4 | *** | *** | *** | *** | *** | *** |
| 2024 Q1 | *** | *** | *** | *** | *** | *** |
| 2024 Q2 | *** | *** | *** | *** | *** | *** |
| 2024 Q3 | *** | *** | *** | *** | *** | *** |
| 2024 Q4 | *** | *** | *** | *** | *** | *** |

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

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as “—". Product 5 is indexed to 2022 Q2.

**Figure 5.8 HCCIGM: Indexed U.S. producer prices, by quarter**

* * * * * * *

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

Note: Product 5 is indexed to 2022 Q2.

**Table 5.12 HCCIGM: Indexed U.S. importer prices, by quarter and product**

Indices in percent, 2022 Q1 = 100.0 percent

| Period | Product 1 | Product 2 | Product 3 | Product 4 | Product 5 | Product 6 |
|---|---|---|---|---|---|---|
| 2022 Q1 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2022 Q2 | *** | *** | *** | *** | *** | *** |
| 2022 Q3 | *** | *** | *** | *** | *** | *** |
| 2022 Q4 | *** | *** | *** | *** | *** | *** |
| 2023 Q1 | *** | *** | *** | *** | *** | *** |
| 2023 Q2 | *** | *** | *** | *** | *** | *** |
| 2023 Q3 | *** | *** | *** | *** | *** | *** |
| 2023 Q4 | *** | *** | *** | *** | *** | *** |
| 2024 Q1 | *** | *** | *** | *** | *** | *** |
| 2024 Q2 | *** | *** | *** | *** | *** | *** |
| 2024 Q3 | *** | *** | *** | *** | *** | *** |
| 2024 Q4 | *** | *** | *** | *** | *** | *** |

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

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

**Figure 5.9 HCCIGM: Indexed U.S. importer prices, by quarter and product**

* * * * * * *

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

## Price comparisons

Most price comparisons of domestic prices and prices for imported HCCIGM show underselling. As shown in tables 5.13 and 5.14, prices for HCCIGM imported from India were below those for U.S.-produced HCCIGM in 54 of 63 instances (*** short tons); margins of underselling ranged from *** percent. In the remaining 9 instances (*** short tons), prices for HCCIGM from India were between *** percent above prices for the domestic product.

**Table 5.13 HCCIGM: Instances of underselling and overselling and the range and average of margins, by product**

Quantity in short tons; margin in percent

| Product | Type | Number of quarters | Quantity | Average margin | Min margin | Max margin |
|---|---|---|---|---|---|---|
| Product 1 | Underselling | 11 | *** | *** | *** | *** |
| Product 2 | Underselling | 11 | *** | *** | *** | *** |
| Product 3 | Underselling | 10 | *** | *** | *** | *** |
| Product 4 | Underselling | 11 | *** | *** | *** | *** |
| Product 5 | Underselling | 2 | *** | *** | *** | *** |
| Product 6 | Underselling | 9 | *** | *** | *** | *** |
| All products | Underselling | 54 | *** | *** | *** | *** |
| Product 1 | Overselling | 1 | *** | *** | *** | *** |
| Product 2 | Overselling | 1 | *** | *** | *** | *** |
| Product 3 | Overselling | 2 | *** | *** | *** | *** |
| Product 4 | Overselling | 1 | *** | *** | *** | *** |
| Product 5 | Overselling | 1 | *** | *** | *** | *** |
| Product 6 | Overselling | 3 | *** | *** | *** | *** |
| All products | Overselling | 9 | *** | *** | *** | *** |

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

Note: These data include only quarters in which there is a comparison between the U.S. and subject product.

**Table 5.14 HCCIGM: Instances of underselling and overselling and the range and average of margins, by year**

Quantity in short tons; margin in percent

| Year | Type | Number of quarters | Quantity | Average margin | Min margin | Max margin |
|---|---|---|---|---|---|---|
| 2022 | Underselling | 18 | *** | *** | *** | *** |
| 2023 | Underselling | 19 | *** | *** | *** | *** |
| 2024 | Underselling | 17 | *** | *** | *** | *** |
| All periods | Underselling | 54 | *** | *** | *** | *** |
| 2022 | Overselling | 2 | *** | *** | *** | *** |
| 2023 | Overselling | 3 | *** | *** | *** | *** |
| 2024 | Overselling | 4 | *** | *** | *** | *** |
| All periods | Overselling | 9 | *** | *** | *** | *** |

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

Note: These data include only quarters in which there is a comparison between the U.S. and subject product.

## Lost sales and lost revenue

In the preliminary phase of these investigations, the Commission requested that the U.S. producer of HCCIGM report purchasers with which they experienced instances of lost sales or revenue due to competition from imports of HCCIGM from India since January 1, 2021. Magotteaux submitted lost sales and lost revenue allegations in the petition and identified eight firms with which it lost sales or revenue ***. Most allegations spanned 2022 to 2024; two spanned 2021 to 2024; and in one allegation, the lost sale was reported to have occurred in 2020.[9]

In the final phase of the investigations, the responding U.S. producer of HCCIGM reported that it had to reduce prices and that it had lost sales.

Staff contacted 20 purchasers and received responses from 11 purchasers with nine purchasers providing usable data. Responding purchasers reported purchasing 98,805 short tons of HCCIGM during January 2022 to December 2024 (table 5.15).

[9] ***.

**Table 5.15 HCCIGM: Purchasers' reported purchases and imports, by firm and source**

Quantity in short tons, share in percent

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

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

Note: Change is the percentage point change in the share of the firm's total purchases of domestic and/or subject country imports between first and last years. Zeroes, null values, and undefined calculations are suppressed and shown as "—".

Of the nine responding purchasers, six reported that, since 2022, they had purchased imported HCCIGM from India instead of U.S.-produced product. Four of these purchasers reported that subject import prices were lower than U.S.-produced product, and two of these purchasers reported that price was a primary reason for the decision to purchase imported product rather than U.S.-produced product. The two purchasers estimated the quantity of HCCIGM from India purchased instead of domestic product; quantities ranged from 3,924 short tons to 4,190 short tons (table 5.16).[10] Purchasers identified difficulties working with the domestic producer and establishing price and lead times, availability, product qualification, quality, delivery time, and technical service support as non-price reasons for purchasing imported rather than U.S.-produced product.

When asked if U.S. producers had reduced prices in order to compete with lower priced imports from India, one of the nine purchasers responded "yes"; two responded "no" and six reported that they did not know (table 5.17). The sole firm (***) responding "yes" reported a price reduction of 0.0 percent and provided the following explanation: ***.[11]

[10] The purchasers confirmed that price was a primary reason for purchasing imported HCCIGM instead of domestic HCCIGM and that the quantities given were accurate. See email from *** and staff telephone interview with ***.

[11] See email from ***.

**Table 5.16 HCCIGM: Purchasers' responses to purchasing subject imports instead of domestic product, by firm**

Quantity in short tons

| Purchaser | Purchased subject imports instead of domestic | Imports priced lower | Choice based on price | Quantity | Explanation |
|---|---|---|---|---|---|
| *** | *** | *** | *** | *** | *** |
| *** | *** | *** | *** | *** | *** |
| *** | *** | *** | *** | *** | *** |
| *** | *** | *** | *** | *** | *** |
| *** | *** | *** | *** | *** | *** |
| *** | *** | *** | *** | *** | *** |
| *** | *** | *** | *** | *** | *** |
| *** | *** | *** | *** | *** | *** |
| *** | *** | *** | *** | *** | *** |
| All firms | Yes--6; No--3 | Yes--4; No--2 | Yes--2; No--4 | *** | NA |

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

**Table 5.17 HCCIGM: Purchasers' responses to U.S. producer price reductions, by firm**

| Purchaser | Reported producers lowered prices | Estimated percent of U.S. price reduction | Explanation |
|---|---|---|---|
| *** | *** | *** | *** |
| *** | *** | *** | *** |
| *** | *** | *** | *** |
| *** | *** | *** | *** |
| *** | *** | *** | *** |
| *** | *** | *** | *** |
| *** | *** | *** | *** |
| *** | *** | *** | *** |
| *** | *** | *** | *** |
| All firms | Yes--1; No--2 | *** | NA |

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

# Part 6: Financial experience of U.S. producer

## Background[1]

Magotteaux, the petitioner, is the only U.S. producer of HCCIGM. Magotteaux reported financial data for a fiscal year ending December 31 and provided their financial data on the basis of International Financial Reporting Standards ("IFRS"). Its ultimate parent company is Sigdo Koppers SA, a publicly traded company headquartered in Chile.[2]

## Operations on HCCIGM

Table 6.1 presents data on Magotteaux's operations in relation to HCCIGM, while table 6.2 presents corresponding changes in AUVs.[3] Appendix F presents aggregated financial data on U.S. producers' operations for HCCIGM and forged grinding media.[4] [5] Appendix I presents Magotteaux's HCCIGM operations for domestic sales of HCCIGM in the United States.

[1] The following abbreviations are used in the tables and/or text of this section: generally accepted accounting principles ("GAAP"), fiscal year ("FY"), net sales ("NS"), cost of goods sold ("COGS"), selling, general, and administrative expenses ("SG&A expenses"), average unit values ("AUVs"), research and development expenses ("R&D expenses"), and return on assets ("ROA").

[2] Conference transcript, p. 55 (Hanneman).

[3] Staff conducted a verification of Magotteaux's questionnaire data and incorporated revisions resulting from verification within the report. Magotteaux's questionnaire data was revised as follows: ***. Magotteaux Verification Report, May 7, 2025.

[4] No firms reported producing LCCIGM in the United States since January 1, 2022.

[5] Data presented in Appendix F reflect the financial data of forged grinding media reported by Gerdau, Molycop and Vinton, and the combined financial data of HCCIGM and forged grinding media. ***.

**Table 6.1 HCCIGM: U.S. producer's results of operations, by item and period**

Quantity in short tons; value in 1,000 dollars; ratios in percent

| Item | Measure | 2022 | 2023 | 2024 |
|---|---|---|---|---|
| Commercial sales | Quantity | *** | *** | *** |
| Transfers to related firms | Quantity | *** | *** | *** |
| Total net sales | Quantity | *** | *** | *** |
| Commercial sales | Value | *** | *** | *** |
| Transfers to related firms | Value | *** | *** | *** |
| Total net sales | Value | *** | *** | *** |
| COGS: Ferrochrome | Value | *** | *** | *** |
| COGS: Steel scrap | Value | *** | *** | *** |
| COGS: Other raw materials | Value | *** | *** | *** |
| COGS: Total raw materials | Value | *** | *** | *** |
| COGS: Direct labor | Value | *** | *** | *** |
| COGS: Other factory | Value | *** | *** | *** |
| COGS: Total | Value | *** | *** | *** |
| Gross profit or (loss) | Value | *** | *** | *** |
| SG&A expenses | Value | *** | *** | *** |
| Operating income or (loss) | Value | *** | *** | *** |
| Interest expense | Value | *** | *** | *** |
| All other expenses | Value | *** | *** | *** |
| All other income | Value | *** | *** | *** |
| Net income or (loss) | Value | *** | *** | *** |
| Depreciation/amortization | Value | *** | *** | *** |
| Cash flow | Value | *** | *** | *** |
| COGS: Ferrochrome | Ratio to NS | *** | *** | *** |
| COGS: Steel scrap | Ratio to NS | *** | *** | *** |
| COGS: Other raw materials | Ratio to NS | *** | *** | *** |
| COGS: Total raw materials | Ratio to NS | *** | *** | *** |
| COGS: Direct labor | Ratio to NS | *** | *** | *** |
| COGS: Other factory | Ratio to NS | *** | *** | *** |
| COGS: Total | Ratio to NS | *** | *** | *** |
| Gross profit | Ratio to NS | *** | *** | *** |
| SG&A expense | Ratio to NS | *** | *** | *** |
| Operating income or (loss) | Ratio to NS | *** | *** | *** |
| Net income or (loss) | Ratio to NS | *** | *** | *** |

Table continued.

**Table 6.1 (Continued) HCCIGM: U.S. producer's results of operations, by item and period**

Shares in percent; unit values in dollars per short ton; count in number of firms reporting

| Item | Measure | 2022 | 2023 | 2024 |
|---|---|---|---|---|
| COGS: Raw materials | Share | *** | *** | *** |
| COGS: Direct labor | Share | *** | *** | *** |
| COGS: Other factory | Share | *** | *** | *** |
| COGS: Total | Share | 100.0 | 100.0 | 100.0 |
| Total net sales | Unit value | *** | *** | *** |
| COGS: Ferrochrome | Unit value | *** | *** | *** |
| COGS: Steel scrap | Unit value | *** | *** | *** |
| COGS: Other raw materials | Unit value | *** | *** | *** |
| COGS: Total raw materials | Unit value | *** | *** | *** |
| COGS: Direct labor | Unit value | *** | *** | *** |
| COGS: Other factory | Unit value | *** | *** | *** |
| COGS: Total | Unit value | *** | *** | *** |
| Gross profit or (loss) | Unit value | *** | *** | *** |
| SG&A expenses | Unit value | *** | *** | *** |
| Operating income or (loss) | Unit value | *** | *** | *** |
| Net income or (loss) | Unit value | *** | *** | *** |
| Operating losses | Count | *** | *** | *** |
| Net losses | Count | *** | *** | *** |
| Data | Count | *** | *** | *** |

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

Note: Shares represent the share of COGS. Zeroes, null values, and undefined calculations are suppressed and shown as "—".

Note: ***.

**Table 6.2 HCCIGM: Changes in AUVs between comparison periods**

Changes in percent

| Item | 2022–24 | 2022–23 | 2023–24 |
|---|---|---|---|
| Total net sales | ▼*** | ▼*** | ▼*** |
| COGS: Ferrochrome | ▼*** | ▼*** | ▼*** |
| COGS: Steel scrap | ▼*** | ▼*** | ▼*** |
| COGS: Other raw materials | ▼*** | ▼*** | ▼*** |
| COGS: Total raw materials | ▼*** | ▼*** | ▼*** |
| COGS: Direct labor | ▼*** | ▼*** | ▼*** |
| COGS: Other factory | ▼*** | ▼*** | ▼*** |
| COGS: Total | ▼*** | ▼*** | ▼*** |

Table continued.

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

Changes in dollars per short ton

| Item | 2022–24 | 2022–23 | 2023–24 |
|---|---|---|---|
| Total net sales | ▼*** | ▼*** | ▼*** |
| COGS: Ferrochrome | ▼*** | ▼*** | ▼*** |
| COGS: Steel scrap | ▼*** | ▼*** | ▼*** |
| COGS: Other raw materials | ▼*** | ▼*** | ▼*** |
| COGS: Total raw materials | ▼*** | ▼*** | ▼*** |
| COGS: Direct labor | ▼*** | ▼*** | ▼*** |
| COGS: Other factory | ▼*** | ▼*** | ▼*** |
| COGS: Total | ▼*** | ▼*** | ▼*** |
| Gross profit or (loss) | ▲*** | ▼*** | ▲*** |
| SG&A expense | ▲*** | ▲*** | ▲*** |
| Operating income or (loss) | ▼*** | ▼*** | ▲*** |
| Net income or (loss) | ▲*** | ▼*** | ▲*** |

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

Note: Zeroes, null values, and undefined calculations are suppressed and shown as "---". Period changes preceded by a "▲" represent an increase, while period changes preceded by a "▼" represent a decrease.

## Net sales

Total net sales are composed of commercial sales and transfers to related firms. Transfers to related firms ***.[6] [7] As shown in table 6.1, total net sales quantity increased irregularly by *** percent from 2022 to 2024, with the increase occurring from 2023 to 2024. Total net sales value decreased irregularly by *** percent during the same period, with the decrease occurring from 2022 to 2023.[8] Net sales AUV decreased overall from $*** per short ton in 2022 to $*** per short ton in 2024. [9]

[6] Transfers to related firms accounted for *** percent of total net sales quantity in 2024. The *** was due to ***. Petitioner's posthearing brief, p. 20.

[7] Staff verification report, Magotteaux, May 7, 2025.

[8] ***. Email from ***, March 10, 2025.

[9] A Magotteaux official stated that the production of HCCIGM is "… a capital-intensive one where we need as much production volume in order to absorb our fixed costs". Hearing transcript, p.23 (Jacaruso). Another Magotteaux official stated, "A company like ours needs to sell as many tons as it can in order to spread these fixed costs over more product, and the volume of sales over which we can spread these costs determines the company's profitability". Hearing transcript, p. 30 (Haberman). Another Magotteaux official stated that "… fewer tons running through our facility means that each ton we do produce carries a larger portion of fixed costs". Hearing transcript, p. 28 (Tallent).

## Cost of goods sold and gross profit or loss

Raw materials, direct labor and other factory costs accounted for ***, ***, and *** percent of total COGS, respectively, in 2024.

Raw materials costs, which represented the *** component of COGS throughout the period for which data were collected, decreased overall by *** percent from 2022 to 2024. On a per-short-ton basis, raw material cost AUVs decreased from $*** in 2022 to $*** in 2024.[10] Table 6.3 presents raw materials, by type. Ferrochrome and steel scrap were the primary raw material inputs and ferrochrome accounted for the largest share of total raw material costs in 2024.

**Table 6.3 HCCIGM: U.S. producer's raw material costs in 2024**

Value in 1,000 dollars; unit values in dollars per short ton; share of value in percent

| Item | Value | Unit value | Share of value |
|---|---|---|---|
| Steel scrap | *** | *** | *** |
| Ferrochrome | *** | *** | *** |
| Other material inputs | *** | *** | *** |
| All raw materials | *** | *** | 100.0 |

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

Direct labor costs were the *** component of COGS in all years and decreased overall by *** percent from 2022 to 2024. Direct labor costs AUVs decreased from $*** per short ton in 2022 to $*** per short ton in 2024. Other factory costs were the *** component of COGS in all years. They decreased by *** percent from 2022 to 2023, and increased by *** percent from 2023 to 2024, decreasing overall by *** percent from 2022 to 2024.[11] On a per-short-ton basis, other factory costs decreased from $*** in 2022 to $*** in 2024.

[10] ***. Email from ***, March 10, 2025.

[11] In response to staff questions, ***. Email from ***, March 10, 2025.

Total COGS decreased overall by *** percent from 2022 to 2024 and total COGS AUVs decreased from $*** per short ton in 2022 to $*** per short ton in 2024. In response to staff questions, ***.[12] As a ratio to net sales, total COGS increased from *** percent in 2022 to *** percent in 2023, then decreased to *** percent in 2024.

Gross profit decreased from $*** in 2022 to *** in 2023, then increased to *** in 2024 for an irregular increase of *** percent between 2022 and 2024. [13] The gross profit margin (gross profit as a ratio to net sales) followed the same directional trend, decreasing from *** percent in 2022 to *** percent in 2023, then increasing to *** percent in 2024.

## SG&A expenses and operating income or loss

SG&A expenses increased irregularly by *** percent from 2022 to 2024 with the increase occurring from 2023 to 2024.[14] As a ratio to net sales, SG&A expenses increased overall from *** percent in 2022 to *** percent in 2024.

Operating income declined from $*** in 2022 to *** in 2023, then improved to *** in 2024. The operating margin declined from *** percent in 2022 to *** percent in 2023, then improved to *** percent in 2024.

[12] Email from ***, March 10, 2025.

[13] The improvement in Magotteaux's financial performance in 2024 was primarily due to the increased production and shipments of HCCIGM to its related firm in Canada (which experienced a fire in 2024 that significantly impaired its production). Petitioner's prehearing brief, p. 22. Hearing transcript, p. 53, 54 (Drake).

[14] ***. Email from ***, March 10, 2025.

## All other expenses and net income or loss

Classified below the operating income level are interest expense and other expenses. Interest expense increased overall from 2022 to 2024, which the company attributed to ***.[15] All other expenses decreased irregularly from 2022 to 2024.

Net income declined from a *** in 2022 to a *** in 2023, then improved to a *** in 2024. The net income margin followed the same directional trend as net income, worsening from *** percent in 2022 to *** percent in 2023, then improving to *** percent in 2024.

[15] Email from ***, March 10, 2025.

## Variance analysis

A variance analysis for the operations of the U.S. producer of HCCIGM is presented in table 6.4.[16] The information for this variance analysis is derived from table 6.1.

The variance analysis shows that the increase in operating income from 2022 to 2024 was due to favorable cost and volume variances that outweighed an unfavorable price variance, indicating that the positive effect of the decline in costs/expenses and higher sales volume were greater than the negative effects of the decline in net sales AUVs.

**Table 6.4 HCCIGM: Variance analysis on the operations of the U.S. producer between comparison periods**

Value in 1,000 dollars

| Item | 2022-24 | 2022-23 | 2023-24 |
|---|---|---|---|
| Net sales price variance | *** | *** | *** |
| Net sales volume variance | *** | *** | *** |
| Net sales total variance | *** | *** | *** |
| COGS cost variance | *** | *** | *** |
| COGS volume variance | *** | *** | *** |
| COGS total variance | *** | *** | *** |
| Gross profit variance | *** | *** | *** |
| SG&A cost variance | *** | *** | *** |
| SG&A volume variance | *** | *** | *** |
| SG&A total variance | *** | *** | *** |
| Operating income price variance | *** | *** | *** |
| Operating income cost variance | *** | *** | *** |
| Operating income volume variance | *** | *** | *** |
| Operating income total variance | *** | *** | *** |

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

Note: These data are derived from the data in table 6.1. Unfavorable variances (which are negative) are shown in parentheses, all others are favorable (positive).

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

## Capital expenditures, research and development expenses assets, and return on assets

Table 6.5 presents Magotteaux's capital expenditures, R&D expenses, assets, and return on assets. Table 6.6 presents the firm's narrative explanations of the nature, focus, and significance of the items. [17]

**Table 6.5 HCCIGM: U.S. producer's capital expenditures, R&D expenses, total net assets, and ROA, by item and period**

Value in 1,000 dollars

| Firm | 2022 | 2023 | 2024 |
|---|---|---|---|
| Capital expenditures | *** | *** | *** |
| R&D expenses | *** | *** | *** |
| Total net assets | *** | *** | *** |
| ROA | *** | *** | *** |

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

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

**Table 6.6 HCCIGM: U.S. producer's narrative descriptions of capital expenditures, R&D expenses, and total net assets**

| Firm | Narrative on capital expenditures, R&D expenses and total net assets |
|---|---|
| Capital expenditures | *** |
| R&D expenses | *** |
| Total net assets | *** |

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

[17] The operating ROA is calculated as operating income divided by total assets. With respect to a firm's overall operations, the total asset value reflects an aggregation of a number of assets which are generally not product specific. Thus, high-level allocations are generally required in order to report a total asset value on a product-specific basis.

## Capital and investment

The Commission requested the U.S. producer of HCCIGM to describe any actual or potential negative effects of imports of HCCIGM from India on the firm's growth, investment, ability to raise capital, development and production efforts, or the scale of capital investments. Table 6.7 presents the impact in each category and table 6.8 provides Magotteaux's narrative responses.

**Table 6.7 HCCIGM: Count of firms indicating actual and anticipated negative effects of imports from subject sources on investment, growth, and development since January 1, 2022, by effect**

Number of firms reporting

| Effect | Category | Count |
|---|---|---|
| Cancellation, postponement, or rejection of expansion projects | Investment | *** |
| Denial or rejection of investment proposal | Investment | *** |
| Reduction in the size of capital investments | Investment | *** |
| Return on specific investments negatively impacted | Investment | *** |
| Other investment effects | Investment | *** |
| Any negative effects on investment | Investment | *** |
| Rejection of bank loans | Growth | *** |
| Lowering of credit rating | Growth | *** |
| Problem related to the issue of stocks or bonds | Growth | *** |
| Ability to service debt | Growth | *** |
| Other growth and development effects | Growth | *** |
| Any negative effects on growth and development | Growth | *** |
| Anticipated negative effects of imports | Future | *** |

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

**Table 6.8 HCCIGM: U.S. producer's narratives relating to actual and anticipated negative effects of imports on investment, growth, and development, since January 1, 2022, by firm and effect**

| Item | Firm name and narrative on impact of imports |
|---|---|
| *** | *** |
| *** | *** |
| *** | *** |
| *** | *** |

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

# Part 7: Threat considerations and information on nonsubject countries

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

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

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

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

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

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

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

Information on the nature of the subsidies was presented earlier in this report; information on the volume and pricing of imports of the subject merchandise is presented in Parts 4 and 5; and information on the effects of imports of the subject merchandise on U.S. producers' existing development and production efforts is presented in Part 6. Information on inventories of the subject merchandise; foreign producers' operations, including the potential for "product-shifting;" any other threat indicators, if applicable; and any dumping in third-country markets, follows. Also presented in this section of the report is information obtained for consideration by the Commission on nonsubject countries.

[2] Section 771(7)(F)(iii) of the Act (19 U.S.C. § 1677(7)(F)(iii)) further provides that, in antidumping investigations, ". . . the Commission shall consider whether dumping in the markets of foreign countries (as evidenced by dumping findings or antidumping remedies in other WTO member markets against the same class or kind of merchandise manufactured or exported by the same party as under investigation) suggests a threat of material injury to the domestic industry."

## The industry in India

The Commission issued foreign producers' or exporters' questionnaires to nine firms believed to produce and/or export HCCIGM from India.[3] Usable responses to the Commission's questionnaire were received from one firm, AIA Engineering Limited ("AIA"). According to official import statistics from Commerce, as well as imports reported in questionnaire responses, AIA's exports to the United States accounted for virtually all U.S. imports of grinding media from India in 2024.[4] According to estimates requested of the responding producer in India, the production of HCCIGM in India reported in questionnaires accounts for approximately *** percent of overall production of HCCIGM in India.[5] Tables 7.1 and 7.2 present information on the HCCIGM operations of the responding producer and exporter in India.

**Table 7.1 HCCIGM: Number of responding producers/exporters, approximate share of production, and exports to the United States as a share of U.S. imports, by subject foreign industry, 2024**

| Subject foreign industry | Number of responding firms | Approximate share of production (percent) | Exports as a share of U.S. imports from subject country (percent) |
|---|---|---|---|
| India | 1 | *** | *** |

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

Note: "Approximate share of production" reflects the responding firm's estimates of its production as a share of total production of HCCIGM in India in 2024.

[3] These firms were identified through a review of information submitted in the petition and presented in third-party sources.

[4] According to official import statistics under HTS 7325.91.000, as well as imports reported in questionnaire responses. Although AIA's reported exports to the United States account for virtually all of reported subject imports in each period reported, AIA estimated in its foreign producer questionnaire that it accounts for ***. AIA's foreign producer questionnaire, sections II-7a and II-7b. ***. Commission staff reached out to Shri Balaji for a foreign producer questionnaire in these final phase investigations, but did not receive a response. At the hearing, AIA/Vega stated that AIA is the only major supplier of HCCIGM to the U.S. market other than Magotteaux. Hearing transcript, p. 10 (Jacobson).

[5] AIA's foreign producer questionnaire, section II-7a.

**Table 7.2 HCCIGM: Summary data for subject foreign producers in India, 2024**

| Producer | Production (short tons) | Share of reported production (percent) | Exports to the United States (short tons) | Share of reported exports to the United States (percent) | Total shipments (short tons) | Share of firm's total shipments exported to the United States (percent) |
|---|---|---|---|---|---|---|
| AIA | *** | 100.0 | *** | 100.0 | *** | *** |

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

There were no major developments in the industry in India since January 1, 2022 identified by interested parties in the proceeding and no relevant information from outside sources was found.

## Changes in operations

Producers in India were asked to report any change in the character of their operations or organization relating to the production of HCCIGM since January 1, 2022. AIA indicated in its questionnaire that it ***.[6]

## Installed and practical overall capacity

Table 7.3 presents data on AIA's installed capacity, practical overall capacity, and practical HCCIGM capacity and production on the same equipment. AIA's installed overall capacity increased by *** percent from 2022 to 2023, and remained flat from 2023 to 2024, while practical overall capacity and practical HCCIGM capacity remained flat across the period

[6] AIA's foreign producer questionnaire, section II-7a. In its preliminary phase postconference brief, AIA stated that, "AIA's Board has approved a brownfield capacity addition that will offer an additional installed capacity of approximately *** and practical capacity of approximately ***. This extra capacity will allow AIA to fulfil{l} strong demand from its home country, India, which is in midst of a massive infrastructure investment, as well from its customers in more than 100 countries around the world." AIA/Vega's postconference brief, appendix, p. 2. In the final phase of these investigations, AIA stated that it "is not planning on expanding HCCIGM production capacity at all." AIA/Vega's prehearing brief, pp. 48-49. AIA "***." Email from ***, March 11, 2025.

for which data were collected.[7] [8] Practical overall production and practical HCCIGM production increased by *** and *** percent from 2022 to 2023, and then decreased by *** and *** percent from 2023 to 2024.[9] This resulted in a 2022 to 2024 net decrease of *** percent in practical overall production and *** percent in practical HCCIGM production.[10] As capacity remained flat from 2022 to 2024, practical overall capacity utilization declined by *** percentage points and practical HCCIGM capacity utilization declined by *** percentage points. Installed overall capacity utilization declined by *** percentage points by the same period.

[7] Regarding the 2022 to 2023 increase in installed overall capacity, AIA stated that ***, and that, ***. Email from ***, May 20, 2024. AIA's foreign producer questionnaire, section II-3c.

[8] AIA ***. AIA's foreign producer questionnaire, section II-3d.

[9] ***. AIA stated that, ***, and that ***. Email from ***, March 11, 2025. AIA's foreign producer questionnaire, section II-4.

[10] Regarding the decline in practical overall production and practical HCCIGM production reported from 2022 to 2024, AIA stated that, ***. Email from ***, March 11, 2025.

**Table 7.3 HCCIGM: AIA's installed and practical capacity and production on the same equipment as in-scope production, by item and period**

Capacity and production in short tons; utilization in percent

| Item | Measure | 2022 | 2023 | 2024 |
|---|---|---|---|---|
| Installed overall | Capacity | *** | *** | *** |
| Installed overall | Production | *** | *** | *** |
| Installed overall | Utilization | *** | *** | *** |
| Practical overall | Capacity | *** | *** | *** |
| Practical overall | Production | *** | *** | *** |
| Practical overall | Utilization | *** | *** | *** |
| Practical HCCIGM | Capacity | *** | *** | *** |
| Practical HCCIGM | Production | *** | *** | *** |
| Practical HCCIGM | Utilization | *** | *** | *** |

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

## Operations on HCCIGM

Table 7.4 presents information on the HCCIGM operations of AIA.

**Table 7.4 HCCIGM: Data on subject foreign industry in India, by period**

Quantity in short tons; ratio and share in percent

| Item | 2022 | 2023 | 2024 | Projection 2025 | Projection 2026 |
|---|---|---|---|---|---|
| Capacity | *** | *** | *** | *** | *** |
| Production | *** | *** | *** | *** | *** |
| End-of-period inventories | *** | *** | *** | *** | *** |
| Internal consumption | *** | *** | *** | *** | *** |
| Commercial home market shipments | *** | *** | *** | *** | *** |
| Home market shipments | *** | *** | *** | *** | *** |
| Exports to the United States | *** | *** | *** | *** | *** |
| Exports to all other markets | *** | *** | *** | *** | *** |
| Export shipments | *** | *** | *** | *** | *** |
| Total shipments | *** | *** | *** | *** | *** |
| Capacity utilization ratio | *** | *** | *** | *** | *** |
| Inventory ratio to production | *** | *** | *** | *** | *** |
| Inventory ratio to total shipments | *** | *** | *** | *** | *** |
| Internal consumption share | *** | *** | *** | *** | *** |
| Commercial home market shipments share | *** | *** | *** | *** | *** |
| Home market shipments share | *** | *** | *** | *** | *** |
| Exports to the United States share | *** | *** | *** | *** | *** |
| Exports to all other markets share | *** | *** | *** | *** | *** |
| Export shipments share | *** | *** | *** | *** | *** |
| Total shipments share | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

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

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

AIA's capacity stayed constant during 2022 to 2024 while HCCIGM production decreased by *** percent over the same period. Production initially increased by *** percent during 2022 to 2023 and then decreased by *** percent during 2023-24. AIA projects production to increase by *** percent from 2024 to 2025, subsequently decreasing by *** percent from 2025 to 2026, with projected 2026 production levels *** percent lower relative to 2022. Peaking in 2023, AIA's capacity utilization rate declined by *** percentage points from 2022 to 2024, and in 2025 and 2026 is projected to return to levels comparable to those reported for 2022.

Home market shipments decreased irregularly from 2022 to 2024 for an overall decrease of *** percent.[11] In 2025, AIA projects home market shipments to increase by ***

[11] As AIA ***. AIA's foreign producer questionnaire, section II-9.

percent relative to 2024 and to remain flat in 2026, with 2025 and 2026 home market shipments at the highest levels of any period reported. As a share of total shipments, home market shipments initially declined in 2023 by *** percentage points before rebounding back to a level comparable to 2022, and are projected to stay relatively flat in 2025 and 2026.[12] Whereas home market shipments were at their lowest in 2023 and decreased overall during 2022 to 2024, AIA's exports to the United States decreased during 2022 to 2024, for a net decline of *** percent. Exports to the United States are projected to further decrease by *** percent from 2024 to 2025, and by a further *** percent from 2025 to 2026, ending 2026 at a level *** percent lower than reported in 2022.[13] As a share of total shipments, exports to the United States remained relatively flat from 2022 to 2024, but are projected to decrease by *** percentage points during 2024 to 2025 and a further *** percentage points from 2025 to 2026, as the decline in exports to the United States is projected to outpace the decline in total shipments over the same period.

The quantity of AIA's exports to all other markets initially increased by *** percent during 2022 to 2023 before decreasing during 2023 to 2024 by *** percent for an overall 2022 to 2024 decrease of *** percent. Exports to all other markets are projected to increase in 2025 and 2026, with exports to all other markets peaking in 2026.[14] Exports to all other markets as a share of total shipments increased by *** percentage points in 2023 but in 2024 returned to a level comparable to 2022, in similar fashion to home market shipments and exports to the United States. In 2025 and 2026, however, the share of exports to all other markets are projected to increase by *** and *** percentage points, respectively, ending 2026 at roughly *** of total shipments of HCCIGM by AIA.[15]

In contrast to production, home market, and export shipments, AIA's end-of-period inventories of HCCIGM increased over the 2022 to 2024 period. Inventories first increased by

[12] Commission staff collected data in the foreign producer questionnaire on exports to the United States of HCCIGM not produced by the responding firm (i.e., resales of HCCIGM). AIA reported ***. AIA's foreign producer questionnaire, section II-10.

[13] Regarding its projected exports to the United States, AIA/Vega stated that, "because of the Section 232 tariffs at 25 percent, that's going to be a significant drag on the ability of AIA and Vega to make sales going forward. That's a big tariff, and it's going to have some impact on the market for sure." Hearing transcript, p. 113 (Jacobson).

[14] Regarding exports of HCCIGM to all other markets, AIA cited current and projected growth in the mining industry, which comprises the largest market for HCCIGM in developing countries, as a factor driving projected increases in exports to all other markets. AIA/Vega prehearing brief, pp. 50-51. AIA noted that ***." Email from ***, March 11, 2025.

[15] AIA/Vega stated that "the Indian home market is strong and growing due to infrastructure spending. The third-country markets in particular, in terms of mining but also cement, are strong and growing." Hearing transcript, p. 112 (Jacobson).

*** percent from 2022 to 2023, and then decreased by *** percent from 2023 to 2024, for an overall increase of *** percent during 2022 to 2024. Inventories are projected to increase in 2025 and remain flat in 2026, representing a projected *** percentage point increase relative to 2022. As a ratio to production and total shipments, inventories were highest in 2023, then decreased by *** and *** percentage points, respectively, from 2023 to 2024 and are projected to remain between *** and *** percent from 2025 to 2026.

## Alternative products

As shown in table 7.5, AIA ***. HCCIGM accounted for *** of AIA's production in all periods reported. ***.[16]

[16] AIA stated that it ***, and that ***. Email from ***, March 11, 2025.

**Table 7.5 HCCIGM: AIA's overall production on the same equipment as in-scope production, by product type and period**

Quantity in short tons; share in percent

| Product type | Measure | 2022 | 2023 | 2024 |
|---|---|---|---|---|
| HCCIGM | Quantity | *** | *** | *** |
| LCCIGM | Quantity | *** | *** | *** |
| Forged grinding media | Quantity | *** | *** | *** |
| Other products | Quantity | *** | *** | *** |
| All out-of-scope products | Quantity | *** | *** | *** |
| All products | Quantity | *** | *** | *** |
| HCCIGM | Share | *** | *** | *** |
| LCCIGM | Share | *** | *** | *** |
| Forged grinding media | Share | *** | *** | *** |
| Other products | Share | *** | *** | *** |
| All out-of-scope products | Share | *** | *** | *** |
| All products | Share | 100.0 | 100.0 | 100.0 |

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

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

## Exports

According to GTA, the leading export markets for grinding balls and similar articles for mills, cast, of iron or steel, other than nonmalleable cast iron ("grinding balls") from India are Australia, Brazil, and Ghana (table 7.6). During 2023, the United States was the fourth-largest export market for grinding balls from India, accounting for 10.4 percent. Australia was the largest export market for grinding balls from India, accounting for 17.6 percent, followed by Brazil at 15.5 percent, and Ghana at 13.4 percent.

**Table 7.6 Grinding balls and similar articles for mills, cast, of iron or steel, other than nonmalleable cast iron: Exports from India, by destination market and by period**

Quantity in short tons; value in 1,000 dollars

| Destination market | Measure | 2021 | 2022 | 2023 |
|---|---|---|---|---|
| United States | Quantity | 22,939 | 27,790 | 23,146 |
| Australia | Quantity | 40,416 | 41,605 | 39,209 |
| Brazil | Quantity | 11,662 | 8,793 | 34,599 |
| Ghana | Quantity | 25,164 | 23,134 | 29,727 |
| Canada | Quantity | 5,786 | 10,367 | 11,561 |
| Mexico | Quantity | 11,474 | 13,861 | 9,418 |
| Tanzania | Quantity | 5,003 | 8,961 | 6,050 |
| Russia | Quantity | 1,281 | 2,814 | 5,636 |
| Netherlands | Quantity | 6,403 | 4,267 | 5,059 |
| All other destination markets | Quantity | 69,788 | 74,906 | 58,217 |
| Non-U.S. destination markets | Quantity | 176,979 | 188,707 | 199,475 |
| All destination markets | Quantity | 199,918 | 216,498 | 222,622 |
| United States | Value | 25,262 | 37,378 | 26,390 |
| Australia | Value | 43,771 | 50,597 | 43,109 |
| Brazil | Value | 15,047 | 13,877 | 41,966 |
| Ghana | Value | 27,504 | 30,235 | 35,114 |
| Canada | Value | 6,262 | 13,264 | 14,251 |
| Mexico | Value | 12,265 | 17,796 | 10,795 |
| Tanzania | Value | 5,131 | 12,324 | 7,944 |
| Russia | Value | 1,288 | 3,320 | 6,850 |
| Netherlands | Value | 7,482 | 5,523 | 6,099 |
| All other destination markets | Value | 70,902 | 92,272 | 67,580 |
| Non-U.S. destination markets | Value | 189,653 | 239,207 | 233,707 |
| All destination markets | Value | 214,915 | 276,586 | 260,097 |

Table continued.

**Table 7.6 (Continued) Grinding balls and similar articles for mills, cast, of iron or steel, other than nonmalleable cast iron: Exports from India, by destination market and by period**

Unit value in dollars per short ton; share in percent

| Destination market | Measure | 2021 | 2022 | 2023 |
|---|---|---|---|---|
| United States | Unit value | 1,101 | 1,345 | 1,140 |
| Australia | Unit value | 1,083 | 1,216 | 1,099 |
| Brazil | Unit value | 1,290 | 1,578 | 1,213 |
| Ghana | Unit value | 1,093 | 1,307 | 1,181 |
| Canada | Unit value | 1,082 | 1,279 | 1,233 |
| Mexico | Unit value | 1,069 | 1,284 | 1,146 |
| Tanzania | Unit value | 1,025 | 1,375 | 1,313 |
| Russia | Unit value | 1,006 | 1,180 | 1,216 |
| Netherlands | Unit value | 1,169 | 1,294 | 1,206 |
| All other destination markets | Unit value | 1,016 | 1,232 | 1,161 |
| Non-U.S. destination markets | Unit value | 1,072 | 1,268 | 1,172 |
| All destination markets | Unit value | 1,075 | 1,278 | 1,168 |
| United States | Share of quantity | 11.5 | 12.8 | 10.4 |
| Australia | Share of quantity | 20.2 | 19.2 | 17.6 |
| Brazil | Share of quantity | 5.8 | 4.1 | 15.5 |
| Ghana | Share of quantity | 12.6 | 10.7 | 13.4 |
| Canada | Share of quantity | 2.9 | 4.8 | 5.2 |
| Mexico | Share of quantity | 5.7 | 6.4 | 4.2 |
| Tanzania | Share of quantity | 2.5 | 4.1 | 2.7 |
| Russia | Share of quantity | 0.6 | 1.3 | 2.5 |
| Netherlands | Share of quantity | 3.2 | 2.0 | 2.3 |
| All other destination markets | Share of quantity | 34.9 | 34.6 | 26.2 |
| Non-U.S. destination markets | Share of quantity | 88.5 | 87.2 | 89.6 |
| All destination markets | Share of quantity | 100.0 | 100.0 | 100.0 |

Source: Official exports statistics under HS subheading 7325.91 as reported by the Indian Ministry of Commerce in the Global Trade Atlas Suite database, accessed March 11, 2025.

Note: United States is shown at the top followed by the top destination markets in descending order of 2023 data.

## U.S. inventories of imported merchandise

Table 7.7 presents data on U.S. importers' reported inventories of HCCIGM. U.S. importers' inventories of subject imports increased by *** percent from 2022 to 2024, and never accounted for less than *** percent of inventories of imports from all sources throughout the period reported, despite a *** increase in inventories of imports from nonsubject sources over the same period.[17] Although *** reported the largest volume of subject inventories in all periods reported, the 2022 to 2024 increase in subject inventories was driven almost entirely by ***, whose inventories increased by *** percent, while *** decreased by *** percent, over the 2022 to 2024 period. As a ratio to imports, U.S. shipments of imports, and total shipments of imports, subject inventories steadily rose from 2022 to 2024, with overall increases ranging from *** to *** percentage points.

**Table 7.7 HCCIGM: U.S. importers' inventories and their ratio to select items, by source and period**

Quantity in short tons; ratio in percent

| Measure | Source | 2022 | 2023 | 2024 |
|---|---|---|---|---|
| Inventories quantity | India | *** | *** | *** |
| Ratio to imports | India | *** | *** | *** |
| Ratio to U.S. shipments of imports | India | *** | *** | *** |
| Ratio to total shipments of imports | India | *** | *** | *** |
| Inventories quantity | Nonsubject | *** | *** | *** |
| Ratio to imports | Nonsubject | *** | *** | *** |
| Ratio to U.S. shipments of imports | Nonsubject | *** | *** | *** |
| Ratio to total shipments of imports | Nonsubject | *** | *** | *** |
| Inventories quantity | All | *** | *** | *** |
| Ratio to imports | All | *** | *** | *** |
| Ratio to U.S. shipments of imports | All | *** | *** | *** |
| Ratio to total shipments of imports | All | *** | *** | *** |

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

[17] Magotteaux argued that "like other industries coming out of COVID, there was an element of stocking and increasing inventories in industry." Hearing transcript, p. 56 (Hannemann).

## U.S. importers' outstanding orders

The Commission requested importers to indicate whether they imported or arranged for the importation of HCCIGM from India and/or nonsubject sources after December 31, 2024. Their reported data are presented in table 7.8. Subject imports accounted for *** percent of U.S. importers' total reported arranged imports, and *** reported arranged imports from India, with *** accounting for *** percent of the total. *** accounted for *** of arranged imports from nonsubject sources, which consisted of ***.

**Table 7.8 HCCIGM: U.S. importers' arranged imports, by source and period**

Quantity in short tons

| Source | Jan-Mar 2025 | Apr-Jun 2025 | Jul-Sep 2025 | Oct-Dec 2025 | Total |
|---|---|---|---|---|---|
| India | *** | *** | *** | *** | *** |
| Nonsubject sources | *** | *** | *** | *** | *** |
| All import sources | *** | *** | *** | *** | *** |

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

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

## Third-country trade actions

Based on available information, grinding media from India has been subject to a 25.4 percent ad valorem duty in Canada since January 1, 2018.[18]

## Information on nonsubject countries

Table 7.9 presents global export data for in-scope grinding media and other out-of-scope products. China, India, and Thailand were the leading exporters in 2023, by quantity, accounting for 37.3 percent, 35.0 percent, 18.0 percent, respectively, of total global exports. The top three exporters accounted for a combined 90.2 percent of global exports in 2023. Subject country India was the second leading exporter of grinding media in 2023. Overall grinding media exports in 2023 were 4.6 percent higher than the level in 2022.

[18]WTO, "Committee on Anti-Dumping Practices – Semi-annual report under article 16.4 of the Agreement: 1 January – 30 June 2021, Canada," October 15, 2021.

**Table 7.9 Grinding balls and similar articles for mills, cast, of iron or steel, other than nonmalleable cast iron: Global exports by reporting country and period**

Quantity in short tons; value in 1,000 dollars

| Exporting country | Measure | 2021 | 2022 | 2023 |
|---|---|---|---|---|
| United States | Quantity | 8,119 | 2,791 | 2,456 |
| India | Quantity | 199,918 | 216,498 | 222,622 |
| China | Quantity | 162,199 | 189,557 | 237,030 |
| Thailand | Quantity | 100,644 | 88,390 | 114,226 |
| South Africa | Quantity | 16,806 | 15,746 | 11,779 |
| Belgium | Quantity | 10,513 | 10,183 | 8,818 |
| Turkey | Quantity | 15,692 | 11,125 | 8,619 |
| Tunisia | Quantity | 1,982 | 3,069 | 3,789 |
| Egypt | Quantity | 5,740 | 6,275 | 3,292 |
| Brazil | Quantity | 3,464 | 3,804 | 3,096 |
| Chile | Quantity | 35,918 | 24,036 | 3,038 |
| Australia | Quantity | 3,357 | 3,848 | 2,674 |
| All other exporters | Quantity | 27,402 | 32,817 | 14,779 |
| All reporting exporters | Quantity | 591,754 | 608,140 | 636,217 |
| United States | Value | 11,677 | 6,227 | 4,923 |
| India | Value | 214,915 | 276,586 | 260,097 |
| China | Value | 163,824 | 223,549 | 238,054 |
| Thailand | Value | 108,815 | 114,451 | 146,600 |
| South Africa | Value | 19,135 | 22,715 | 15,040 |
| Belgium | Value | 15,544 | 17,916 | 14,887 |
| Turkey | Value | 15,578 | 15,132 | 10,642 |
| Tunisia | Value | 2,319 | 4,140 | 5,242 |
| Egypt | Value | 5,820 | 7,880 | 3,746 |
| Brazil | Value | 4,245 | 6,428 | 4,982 |
| Chile | Value | 23,970 | 23,803 | 3,232 |
| Australia | Value | 4,483 | 3,718 | 2,330 |
| All other exporters | Value | 51,237 | 53,696 | 36,162 |
| All reporting exporters | Value | 641,561 | 776,241 | 745,938 |

Table continued.

**Table 7.9 (Continued) Grinding balls and similar articles for mills, cast, of iron or steel, other than nonmalleable cast iron: Global exports by reporting country and period**

Unit values in dollars per short ton; share in percent

| Exporting country | Measure | 2021 | 2022 | 2023 |
|---|---|---|---|---|
| United States | Unit value | 1,438 | 2,231 | 2,005 |
| India | Unit value | 1,075 | 1,278 | 1,168 |
| China | Unit value | 1,010 | 1,179 | 1,004 |
| Thailand | Unit value | 1,081 | 1,295 | 1,283 |
| South Africa | Unit value | 1,139 | 1,443 | 1,277 |
| Belgium | Unit value | 1,479 | 1,759 | 1,688 |
| Turkey | Unit value | 993 | 1,360 | 1,235 |
| Tunisia | Unit value | 1,170 | 1,349 | 1,383 |
| Egypt | Unit value | 1,014 | 1,256 | 1,138 |
| Brazil | Unit value | 1,225 | 1,690 | 1,609 |
| Chile | Unit value | 667 | 990 | 1,064 |
| Australia | Unit value | 1,335 | 966 | 871 |
| All other exporters | Unit value | 1,870 | 1,636 | 2,447 |
| All reporting exporters | Unit value | 1,084 | 1,276 | 1,172 |
| United States | Share of quantity | 1.4 | 0.5 | 0.4 |
| India | Share of quantity | 33.8 | 35.6 | 35.0 |
| China | Share of quantity | 27.4 | 31.2 | 37.3 |
| Thailand | Share of quantity | 17.0 | 14.5 | 18.0 |
| South Africa | Share of quantity | 2.8 | 2.6 | 1.9 |
| Belgium | Share of quantity | 1.8 | 1.7 | 1.4 |
| Turkey | Share of quantity | 2.7 | 1.8 | 1.4 |
| Tunisia | Share of quantity | 0.3 | 0.5 | 0.6 |
| Egypt | Share of quantity | 1.0 | 1.0 | 0.5 |
| Brazil | Share of quantity | 0.6 | 0.6 | 0.5 |
| Chile | Share of quantity | 6.1 | 4.0 | 0.5 |
| Australia | Share of quantity | 0.6 | 0.6 | 0.4 |
| All other exporters | Share of quantity | 4.6 | 5.4 | 2.3 |
| All reporting exporters | Share of quantity | 100.0 | 100.0 | 100.0 |

Source: Official exports statistics under HS subheading 7325.91 as reported by various national statistical authorities in the Global Trade Atlas Suite database, accessed March 11, 2025.

Note: United States is shown at the top followed by the countries under investigation, then all remaining top exporting countries in descending order of 2023 data.

# APPENDIX A

# FEDERAL REGISTER NOTICES

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

| Citation | Title | Link |
|---|---|---|
| 89 FR 35860, May 2, 2024 | High Chrome Cast Iron Grinding Media From India; Institution of Antidumping and Countervailing Duty Investigations and Scheduling of Preliminary Phase Investigations | https://www.govinfo.gov/content/pkg/FR-2024-05-02/pdf/2024-09509.pdf |
| 89 FR 45630, May 23, 2024 | Certain High Chrome Cast Iron Grinding Media From India: Initiation of Less-Than-Fair-Value Investigation | https://www.govinfo.gov/content/pkg/FR-2024-05-23/pdf/2024-11263.pdf |
| 89 FR 45640, May 23, 2024 | Certain High Chrome Cast Iron Grinding Media From India: Initiation of Countervailing Duty Investigation | https://www.govinfo.gov/content/pkg/FR-2024-05-23/pdf/2024-11264.pdf |
| 89 FR 50632, June 14, 2024 | High Chrome Cast Iron Grinding Media From India; Determinations | https://www.govinfo.gov/content/pkg/FR-2024-06-14/pdf/2024-13055.pdf |
| 89 FR 56731, July 10, 2024 | Certain High Chrome Cast Iron Grinding Media From India: Postponement of Preliminary Determination in the Countervailing Duty Investigation | https://www.govinfo.gov/content/pkg/FR-2024-07-10/pdf/2024-15103.pdf |
| 89 FR 73366, September 10, 2024 | Certain High Chrome Cast Iron Grinding Media From India: Postponement of Preliminary Determination in the Less-Than-Fair-Value Investigation | https://www.govinfo.gov/content/pkg/FR-2024-09-10/pdf/2024-20347.pdf |

| Citation | Title | Link |
|---|---|---|
| 89 FR 80865, October 4, 2024 | Certain High Chrome Cast Iron Grinding Media From India: Preliminary Affirmative Countervailing Duty Determination, and Alignment of Final Determination With Final Antidumping Duty Determination | https://www.govinfo.gov/content/pkg/FR-2024-10-04/pdf/2024-22996.pdf |
| 89 FR 96939, December 6, 2024 | Certain High Chrome Cast Iron Grinding Media From India: Preliminary Affirmative Determination of Sales at Less Than Fair Value, Postponement of Final Determination, and Extension of Provisional Measures | https://www.govinfo.gov/content/pkg/FR-2024-12-06/pdf/2024-28694.pdf |
| 89 FR 104560,December 23, 2024 | High Chrome Cast Iron Grinding Media From India: Scheduling of the Final Phase of Countervailing Duty and Antidumping Duty Investigations | https://www.govinfo.gov/content/pkg/FR-2024-12-23/pdf/2024-30613.pdf |
| 90 FR 17575, April 28, 2025 | Certain High Chrome Cast Iron Grinding Media From India: Final Affirmative Countervailing Duty Determination | https://www.govinfo.gov/content/pkg/FR-2025-04-28/pdf/2025-07287.pdf |
| 90 FR 17577, April 28, 2025 | Certain High Chrome Cast Iron Grinding Media From India: Final Affirmative Determination of Sales at Less Than Fair Value | https://www.govinfo.gov/content/pkg/FR-2025-04-28/pdf/2025-07288.pdf |

# APPENDIX B

# LIST OF HEARING WITNESSES

**CALENDAR OF PUBLIC HEARING**

Those listed below appeared in the United States International Trade Commission's hearing:

**Subject:** High Chrome Cast Iron Grinding Media from India

**Inv. Nos.:** 701-TA-726 and 731-TA-1694 (Final)

**Date and Time:** April 24, 2025 - 9:30 a.m.

Sessions were held in connection with these investigations in the Main Hearing Room (Room 101), 500 E Street, SW., Washington, DC.

**OPENING REMARKS:**

In Support of Imposition (**Christopher T. Cloutier**, Schagrin Associates)
In Opposition to Imposition (**Michael G. Jacobson**, Hogan Lovells US LLP)

**In Support of the Imposition of the Antidumping and Countervailing Duty Orders:**

Schagrin Associates
Washington, DC
on behalf of

Magotteaux Inc. ("Magotteaux")

**Markus Hannemann**, General Manager, Magotteaux

**Jessica Jacaruso**, Regional Sales Manager, United States and Mexico – Mining, Magotteaux

**Brian Tallent**, Engineering and Business Manager – Cement, Magotteaux

**Gustavo Haberman**, Finance Manager – North America, Magotteaux

**Lionel Van Obbergh**, Sales Manager – North America, Magotteaux

**Christopher T. Cloutier** )
) – OF COUNSEL
**Elizabeth J. Drake** )

**In Opposition to the Imposition of the**
**Antidumping and Countervailing Duty Orders:**

Greenberg Traurig, LLP
Washington, DC
on behalf of

Holcim (US) Inc. ("Holcim")

**Atl Martinez**, Vice President of Procurement-North America, Holcim

**Rosa S. Jeong** ) – OF COUNSEL

Hogan Lovells US LLP
Washington, DC
on behalf of

AIA Engineering Limited ("AIA")
Vega Industries Limited USA ("Vega")

**Kunal Shah** (**remote**), Executive Director, AIA

**Michael G. Jacobson** ) – OF COUNSEL

**REBUTTAL/CLOSING REMARKS:**

In Support of Imposition (**Elizabeth J. Drake**, Schagrin Associates)
In Opposition to Imposition (**Michael G. Jacobson**, Hogan Lovells US LLP)

# APPENDIX C

# SUMMARY DATA

**Table C.1**
**HCCIGM: Summary data concerning the U.S. market defining the domestic like product co-extensive with the scope, by item and period**
Quantity=short tons; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per short ton; Period changes=percent--exceptions noted

| Item | Reported data | | | Period change comparisons | | |
|---|---|---|---|---|---|---|
| | Calendar year | | | Calendar year | | |
| | 2022 | 2023 | 2024 | 2022–24 | 2022–23 | 2023–24 |
| U.S. consumption quantity: | | | | | | |
| Amount | *** | *** | *** | ▼*** | ▼*** | ▼*** |
| Producers' share (fn1) | *** | *** | *** | ▲*** | ▲*** | ▼*** |
| Importers' share (fn1): | | | | | | |
| India | *** | *** | *** | ▼*** | ▲*** | ▼*** |
| Nonsubject sources | *** | *** | *** | ▲*** | ▼*** | ▲*** |
| All import sources | *** | *** | *** | ▼*** | ▼*** | ▲*** |
| U.S. consumption value: | | | | | | |
| Amount | *** | *** | *** | ▼*** | ▼*** | ▼*** |
| Producers' share (fn1) | *** | *** | *** | ▼*** | ▼*** | ▲*** |
| Importers' share (fn1): | | | | | | |
| India | *** | *** | *** | ▲*** | ▲*** | ▼*** |
| Nonsubject sources | *** | *** | *** | ▼*** | ▼*** | ▲*** |
| All import sources | *** | *** | *** | ▲*** | ▲*** | ▼*** |
| U.S. importers' U.S. shipments of imports from: | | | | | | |
| India: | | | | | | |
| Quantity | *** | *** | *** | ▼*** | ▼*** | ▼*** |
| Value | *** | *** | *** | ▼*** | ▼*** | ▼*** |
| Unit value | *** | *** | *** | ▼*** | ▼*** | ▼*** |
| Ending inventory quantity | *** | *** | *** | ▲*** | ▲*** | ▲*** |
| Nonsubject sources: | | | | | | |
| Quantity | *** | *** | *** | ▼*** | ▼*** | ▲*** |
| Value | *** | *** | *** | ▼*** | ▼*** | ▲*** |
| Unit value | *** | *** | *** | ▼*** | ▼*** | ▼*** |
| Ending inventory quantity | *** | *** | *** | ▲*** | ▲*** | ▲*** |
| All import sources: | | | | | | |
| Quantity | *** | *** | *** | ▼*** | ▼*** | ▼*** |
| Value | *** | *** | *** | ▼*** | ▼*** | ▼*** |
| Unit value | *** | *** | *** | ▼*** | ▼*** | ▼*** |
| Ending inventory quantity | *** | *** | *** | ▲*** | ▲*** | ▲*** |
| U.S. producer Magotteaux: | | | | | | |
| Practical capacity quantity | *** | *** | *** | *** | *** | *** |
| Production quantity | *** | *** | *** | ▲*** | ▼*** | ▲*** |
| Capacity utilization (fn1) | *** | *** | *** | ▲*** | ▼*** | ▲*** |
| U.S. shipments: | | | | | | |
| Quantity | *** | *** | *** | ▼*** | ▼*** | ▼*** |
| Value | *** | *** | *** | ▼*** | ▼*** | ▼*** |
| Unit value | *** | *** | *** | ▼*** | ▼*** | ▲*** |
| Export shipments: | | | | | | |
| Quantity | *** | *** | *** | ▲*** | ▼*** | ▲*** |
| Value | *** | *** | *** | ▲*** | ▼*** | ▲*** |
| Unit value | *** | *** | *** | ▼*** | ▲*** | ▼*** |

Table continued.

**Table C.1 Continued**
**HCCIGM: Summary data concerning the U.S. market defining the domestic like product co-extensive with the scope, by item and period**
Quantity=short tons; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per short ton; Period changes=percent--exceptions noted

| Item | Reported data | | | Period change comparisons | | |
|---|---|---|---|---|---|---|
| | Calendar year | | | Calendar year | | |
| | 2022 | 2023 | 2024 | 2022–24 | 2022–23 | 2023–24 |
| U.S. producers': Continued | | | | | | |
| Ending inventory quantity | *** | *** | *** | ▲*** | ▲*** | ▲*** |
| Inventories/total shipments (fn1) | *** | *** | *** | ▲*** | ▲*** | ▲*** |
| Production workers | *** | *** | *** | ▼*** | ▼*** | ▲*** |
| Hours worked (1,000s) | *** | *** | *** | ▼*** | ▼*** | ▼*** |
| Wages paid ($1,000) | *** | *** | *** | ▼*** | ▼*** | ▲*** |
| Hourly wages (dollars per hour) | *** | *** | *** | ▲*** | ▲*** | ▲*** |
| Productivity (short tons per 1,000 hours) | *** | *** | *** | ▲*** | ▲*** | ▲*** |
| Unit labor costs | *** | *** | *** | ▼*** | ▼*** | ▼*** |
| Net sales: | | | | | | |
| Quantity | *** | *** | *** | ▲*** | ▼*** | ▲*** |
| Value | *** | *** | *** | ▼*** | ▼*** | ▲*** |
| Unit value | *** | *** | *** | ▼*** | ▼*** | ▼*** |
| Cost of goods sold (COGS) | *** | *** | *** | ▼*** | ▼*** | ▼*** |
| Gross profit or (loss) (fn2) | *** | *** | *** | ▲*** | ▼*** | ▲*** |
| SG&A expenses | *** | *** | *** | ▲*** | ▼*** | ▲*** |
| Operating income or (loss) (fn2) | *** | *** | *** | ▲*** | ▼*** | ▲*** |
| Net income or (loss) (fn2) | *** | *** | *** | ▲*** | ▼*** | ▲*** |
| Unit COGS | *** | *** | *** | ▼*** | ▼*** | ▼*** |
| Unit SG&A expenses | *** | *** | *** | ▲*** | ▲*** | ▲*** |
| Unit operating income or (loss) (fn2) | *** | *** | *** | ▼*** | ▼*** | ▲*** |
| Unit net income or (loss) (fn2) | *** | *** | *** | ▲*** | ▼*** | ▲*** |
| COGS/sales (fn1) | *** | *** | *** | ▼*** | ▲*** | ▼*** |
| Operating income or (loss)/sales (fn1) | *** | *** | *** | ▲*** | ▼*** | ▲*** |
| Net income or (loss)/sales (fn1) | *** | *** | *** | ▼*** | ▼*** | ▲*** |
| Capital expenditures | *** | *** | *** | ▼*** | ▼*** | ▲*** |
| Research and development expenses | *** | *** | *** | *** | *** | *** |
| Total assets | *** | *** | *** | ▲*** | ▼*** | ▲*** |

Source: Compiled from data submitted in response to Commission questionnaires. 508-compliant tables for these data are contained in parts 3, 4, 6, and 7 of this report.

fn1.--Reported data are in percent and period changes are in percentage points.
fn2.--Percent changes only calculated when both comparison values represent profits; The directional change in profitability provided when one or both comparison values represent a loss.

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

**Table C.2**
**HCCIGM and forged: Summary data concerning the U.S. market defining the domestic like product to include forged grinding media, by item and period**

Quantity=short tons; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per short ton; Period changes=percent--exceptions noted

| Item | Reported data | | | Period change comparisons | | |
|---|---|---|---|---|---|---|
| | Calendar year | | | Calendar year | | |
| | 2022 | 2023 | 2024 | 2022–24 | 2022–23 | 2023–24 |
| U.S. consumption quantity: | | | | | | |
| Amount | *** | *** | *** | ▲*** | ▼*** | ▲*** |
| Producers' share (fn1): | | | | | | |
| HCCIGM: U.S. producers | *** | *** | *** | ▼*** | ▼*** | ▼*** |
| Forged: U.S. producers | *** | *** | *** | ▲*** | ▲*** | ▲*** |
| HCCIGM and forged: U.S. producers | *** | *** | *** | ▲*** | ▲*** | ▲*** |
| Importers' share (fn1): | | | | | | |
| HCCIGM: India | *** | *** | *** | ▼*** | ▼*** | ▼*** |
| HCCIGM: Nonsubject sources | *** | *** | *** | ▼*** | ▼*** | ▲*** |
| HCCIGM: All import sources | *** | *** | *** | ▼*** | ▼*** | ▼*** |
| Forged: All import sources | *** | *** | *** | ▼*** | ▲*** | ▼*** |
| HCCIGM and forged: All import sources | *** | *** | *** | ▼*** | ▼*** | ▼*** |
| U.S. consumption value: | | | | | | |
| Amount | *** | *** | *** | ▲*** | ▼*** | ▲*** |
| Producers' share (fn1): | | | | | | |
| HCCIGM: U.S. producers | *** | *** | *** | ▼*** | ▼*** | ▼*** |
| Forged: U.S. producers | *** | *** | *** | ▲*** | ▲*** | ▲*** |
| HCCIGM and forged: U.S. producers | *** | *** | *** | ▲*** | ▲*** | ▲*** |
| Importers' share (fn1): | | | | | | |
| HCCIGM: India | *** | *** | *** | ▼*** | ▼*** | ▼*** |
| HCCIGM: Nonsubject sources | *** | *** | *** | ▼*** | ▼*** | ▲*** |
| HCCIGM: All import sources | *** | *** | *** | ▼*** | ▼*** | ▼*** |
| Forged: All import sources | *** | *** | *** | ▼*** | ▲*** | ▼*** |
| HCCIGM and forged: All import sources | *** | *** | *** | ▼*** | ▼*** | ▼*** |
| U.S. importers' U.S. shipments of imports from: | | | | | | |
| HCCIGM: India: | | | | | | |
| Quantity | *** | *** | *** | ▼*** | ▼*** | ▼*** |
| Value | *** | *** | *** | ▼*** | ▼*** | ▼*** |
| Unit value | *** | *** | *** | ▼*** | ▼*** | ▼*** |
| Ending inventory quantity | *** | *** | *** | ▲*** | ▲*** | ▲*** |
| HCCIGM: Nonsubject sources: | | | | | | |
| Quantity | *** | *** | *** | ▼*** | ▼*** | ▲*** |
| Value | *** | *** | *** | ▼*** | ▼*** | ▲*** |
| Unit value | *** | *** | *** | ▼*** | ▼*** | ▼*** |
| Ending inventory quantity | *** | *** | *** | ▲*** | ▲*** | ▲*** |
| HCCIGM: All import sources: | | | | | | |
| Quantity | *** | *** | *** | ▼*** | ▼*** | ▼*** |
| Value | *** | *** | *** | ▼*** | ▼*** | ▼*** |
| Unit value | *** | *** | *** | ▼*** | ▼*** | ▼*** |
| Ending inventory quantity | *** | *** | *** | ▲*** | ▲*** | ▲*** |
| Forged: All import sources: | | | | | | |
| Quantity | *** | *** | *** | ▲*** | ▲*** | ▼*** |
| Value | *** | *** | *** | ▼*** | ▼*** | ▼*** |
| Unit value | *** | *** | *** | ▼*** | ▼*** | ▼*** |
| Ending inventory quantity | *** | *** | *** | ▲*** | ▲*** | ▲*** |

Table continued.

**Table C.2 Continued**
**HCCIGM and forged: Summary data concerning the U.S. market defining the domestic like product to include forged grinding media, by item and period**

Quantity=short tons; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per short ton; Period changes=percent--exceptions noted

| Item | Reported data | | | Period change comparisons | | |
|---|---|---|---|---|---|---|
| | Calendar year | | | Calendar year | | |
| | 2022 | 2023 | 2024 | 2022–24 | 2022–23 | 2023–24 |
| U.S. importers' U.S. shipments of imports from:--Continued | | | | | | |
| HCCIGM and forged: All import sources: | | | | | | |
| Quantity | *** | *** | *** | ▼*** | ▼*** | ▼*** |
| Value | *** | *** | *** | ▼*** | ▼*** | ▼*** |
| Unit value | *** | *** | *** | ▼*** | ▼*** | ▼*** |
| Ending inventory quantity | *** | *** | *** | ▲*** | ▲*** | ▲*** |
| U.S. producers': | | | | | | |
| Practical capacity quantity | *** | *** | *** | *** | *** | *** |
| Production quantity | *** | *** | *** | ▼*** | ▼*** | ▲*** |
| Capacity utilization (fn1) | *** | *** | *** | ▼*** | ▼*** | ▲*** |
| HCCIGM: U.S. shipments: | | | | | | |
| Quantity | *** | *** | *** | ▼*** | ▼*** | ▼*** |
| Value | *** | *** | *** | ▼*** | ▼*** | ▼*** |
| Unit value | *** | *** | *** | ▼*** | ▼*** | ▲*** |
| Forged: U.S. shipments: | | | | | | |
| Quantity | *** | *** | *** | ▲*** | ▼*** | ▲*** |
| Value | *** | *** | *** | ▲*** | ▼*** | ▲*** |
| Unit value | *** | *** | *** | ▼*** | ▼*** | ▼*** |
| HCCIGM and forged: U.S. shipments: | | | | | | |
| Quantity | *** | *** | *** | ▲*** | ▼*** | ▲*** |
| Value | *** | *** | *** | ▲*** | ▼*** | ▲*** |
| Unit value | *** | *** | *** | ▼*** | ▼*** | ▼*** |
| Export shipments: | | | | | | |
| Quantity | *** | *** | *** | ▼*** | ▼*** | ▼*** |
| Value | *** | *** | *** | ▼*** | ▼*** | ▼*** |
| Unit value | *** | *** | *** | ▲*** | ▲*** | ▼*** |
| Ending inventory quantity | *** | *** | *** | ▲*** | ▲*** | ▼*** |
| Inventories/total shipments (fn1) | *** | *** | *** | ▲*** | ▲*** | ▼*** |
| Production workers | *** | *** | *** | ▼*** | ▼*** | ▲*** |
| Hours worked (1,000s) | *** | *** | *** | ▼*** | ▼*** | ▼*** |
| Wages paid ($1,000) | *** | *** | *** | ▼*** | ▼*** | ▲*** |
| Hourly wages (dollars per hour) | *** | *** | *** | ▲*** | ▲*** | ▲*** |
| Productivity (short tons per 1,000 hours) | *** | *** | *** | ▲*** | ▲*** | ▲*** |
| Unit labor costs | *** | *** | *** | ▼*** | ▼*** | ▼*** |

Table continued.

**Table C.2 Continued**
**HCCIGM and forged: Summary data concerning the U.S. market defining the domestic like product to include forged grinding media, by item and period**

Quantity=short tons; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per short ton; Period changes=percent--exceptions noted

| Item | Reported data | | | Period change comparisons | | |
|---|---|---|---|---|---|---|
| | Calendar year | | | Calendar year | | |
| | 2022 | 2023 | 2024 | 2022–24 | 2022–23 | 2023–24 |
| U.S. producers':--Continued | | | | | | |
| Net sales: | | | | | | |
| Quantity | *** | *** | *** | ▼*** | ▼*** | ▲*** |
| Value | *** | *** | *** | ▼*** | ▼*** | ▼*** |
| Unit value | *** | *** | *** | ▼*** | ▼*** | ▼*** |
| Cost of goods sold (COGS) | *** | *** | *** | ▼*** | ▼*** | ▼*** |
| Gross profit or (loss) (fn2) | *** | *** | *** | ▲*** | ▲*** | ▲*** |
| SG&A expenses | *** | *** | *** | ▲*** | ▲*** | ▲*** |
| Operating income or (loss) (fn2) | *** | *** | *** | ▲*** | ▲*** | ▲*** |
| Net income or (loss) (fn2) | *** | *** | *** | ▲*** | ▲*** | ▲*** |
| Unit COGS | *** | *** | *** | ▼*** | ▼*** | ▼*** |
| Unit SG&A expenses | *** | *** | *** | ▲*** | ▲*** | ▲*** |
| Unit operating income or (loss) (fn2) | *** | *** | *** | ▲*** | ▲*** | ▲*** |
| Unit net income or (loss) (fn2) | *** | *** | *** | ▲*** | ▲*** | ▲*** |
| COGS/sales (fn1) | *** | *** | *** | ▼*** | ▼*** | ▼*** |
| Operating income or (loss)/sales (fn1) | *** | *** | *** | ▲*** | ▲*** | ▲*** |
| Net income or (loss)/sales (fn1) | *** | *** | *** | ▲*** | ▲*** | ▲*** |
| Capital expenditures | *** | *** | *** | ▼*** | ▼*** | ▼*** |
| Research and development expenses | *** | *** | *** | ▲*** | ▲*** | ▲*** |
| Total assets | *** | *** | *** | ▲*** | ▼*** | ▲*** |

Source: Compiled from data submitted in response to Commission questionnaires. 508-compliant tables for these data are contained in parts 3, 4, 6, 7, and Appendices E and F of this report.

fn1.--Reported data are in percent and period changes are in percentage points.
fn2.--Percent changes only calculated when both comparison values represent profits; The directional change in profitability provided when one or both comparison values represent a loss.

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

# APPENDIX D

# COMPARISON OF DOMESTIC LIKE PRODUCT FACTORS

**Table D.1 HCCIGM and Forged: Count of firms' responses regarding the domestic like product factors comparing HCCIGM to out-of-scope forged grinding media**

| Factor | Firm type | Fully | Mostly | Somewhat | Never |
|---|---|---|---|---|---|
| Physical characteristics | U.S. producers | 0 | 2 | 1 | 1 |
| Physical characteristics | Importers | 0 | 1 | 3 | 1 |
| Physical characteristics | Purchasers | 0 | 1 | 2 | 4 |
| Interchangeability | U.S. producers | 0 | 2 | 2 | 0 |
| Interchangeability | Importers | 0 | 2 | 2 | 1 |
| Interchangeability | Purchasers | 1 | 2 | 1 | 5 |
| Channels | U.S. producers | 2 | 1 | 1 | 0 |
| Channels | Importers | 3 | 0 | 1 | 0 |
| Channels | Purchasers | 4 | 0 | 2 | 2 |
| Manufacturing | U.S. producers | 0 | 0 | 0 | 3 |
| Manufacturing | Importers | 0 | 0 | 0 | 3 |
| Manufacturing | Purchasers | 0 | 0 | 3 | 2 |
| Perceptions | U.S. producers | 0 | 1 | 2 | 1 |
| Perceptions | Importers | 0 | 1 | 2 | 1 |
| Perceptions | Purchasers | 1 | 0 | 1 | 2 |
| Price | U.S. producers | 0 | 0 | 2 | 2 |
| Price | Importers | 0 | 1 | 2 | 2 |
| Price | Purchasers | 0 | 1 | 3 | 4 |

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

**Table D.2 HCCIGM and LCCIGM: Count of firms' responses regarding the domestic like product factors comparing HCCIGM to out-of-scope LCCIGM**

| Factor | Firm type | Fully | Mostly | Somewhat | Never |
|---|---|---|---|---|---|
| Physical characteristics | U.S. producers | 1 | 2 | 0 | 1 |
| Physical characteristics | Importers | 1 | 1 | 3 | 0 |
| Physical characteristics | Purchasers | 0 | 1 | 0 | 3 |
| Interchangeability | U.S. producers | 1 | 2 | 1 | 0 |
| Interchangeability | Importers | 1 | 2 | 1 | 1 |
| Interchangeability | Purchasers | 0 | 2 | 0 | 4 |
| Channels | U.S. producers | 3 | 1 | 0 | 0 |
| Channels | Importers | 4 | 0 | 0 | 0 |
| Channels | Purchasers | 3 | 0 | 0 | 0 |
| Manufacturing | U.S. producers | 2 | 1 | 0 | 1 |
| Manufacturing | Importers | 1 | 1 | 0 | 1 |
| Manufacturing | Purchasers | 0 | 0 | 1 | 0 |
| Perceptions | U.S. producers | 0 | 2 | 1 | 1 |
| Perceptions | Importers | 0 | 0 | 3 | 1 |
| Perceptions | Purchasers | 1 | 0 | 0 | 1 |
| Price | U.S. producers | 0 | 1 | 2 | 1 |
| Price | Importers | 0 | 1 | 2 | 1 |
| Price | Purchasers | 0 | 1 | 1 | 1 |

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

**Table D.3 HCCIGM and Forged: U.S. producers' narratives regarding the domestic like product factors comparing in-scope HCCIGM to out-of-scope forged grinding media**

| Factor | Producer name and narrative on the domestic like product factors |
|---|---|
| Physical characteristics | *** |
| Physical characteristics | *** |
| Physical characteristics | *** |
| Physical characteristics | *** |
| Interchangeability | *** |
| Interchangeability | *** |

| Factor | Producer name and narrative on the domestic like product factors |
|---|---|
| Interchangeability | *** |
| Interchangeability | *** |
| Channels | *** |
| Channels | *** |
| Channels | *** |
| Channels | *** |
| Manufacturing | *** |
| Manufacturing | *** |

| Factor | Producer name and narrative on the domestic like product factors |
|---|---|
| Manufacturing | *** |
| Manufacturing | *** |
| Perceptions | *** |
| Perceptions | *** |

| Factor | Producer name and narrative on the domestic like product factors |
|---|---|
| Perceptions | *** |
| Perceptions | *** |
| Price | *** |
| Price | *** |
| Price | *** |
| Price | *** |

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

**Table D.4 HCCIGM and Forged: U.S. importers' narratives regarding the domestic like product factors comparing in-scope HCCIGM to out-of-scope forged grinding media**

| Factor | Importer name and narrative on the domestic like product factors |
|---|---|
| Physical characteristics | *** |
| Physical characteristics | *** |
| Physical characteristics | *** |
| Physical characteristics | *** |
| Physical characteristics | *** |
| Interchangeability | *** |

| Factor | Importer name and narrative on the domestic like product factors |
|---|---|
| Interchangeability | *** |
| Interchangeability | *** |
| Interchangeability | *** |
| Interchangeability | *** |
| Channels | *** |
| Channels | *** |
| Channels | *** |
| Channels | *** |
| Manufacturing | *** |

| Factor | Importer name and narrative on the domestic like product factors |
|---|---|
| Manufacturing | *** |
| Manufacturing | *** |
| Manufacturing | *** |
| Perceptions | *** |
| Perceptions | *** |

| Factor | Importer name and narrative on the domestic like product factors |
|---|---|
| Perceptions | *** |
| Perceptions | *** |
| Perceptions | *** |
| Price | *** |
| Price | *** |
| Price | *** |
| Price | *** |
| Price | *** |

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

**Table D.5 HCCIGM and Forged: U.S. purchasers' narratives regarding the domestic like product factors comparing in-scope HCCIGM to out-of-scope forged grinding media**

| Factor | Purchaser name and narrative on the domestic like product factors |
|---|---|
| Physical characteristics | *** |
| Physical characteristics | *** |
| Physical characteristics | *** |
| Physical characteristics | *** |
| Physical characteristics | *** |
| Physical characteristics | *** |
| Physical characteristics | *** |
| Physical characteristics | *** |
| Interchangeability | *** |
| Interchangeability | *** |
| Interchangeability | *** |
| Interchangeability | *** |
| Interchangeability | *** |
| Interchangeability | *** |
| Interchangeability | *** |
| Channels | *** |
| Channels | *** |
| Channels | *** |
| Channels | *** |
| Channels | *** |
| Channels | *** |
| Channels | *** |

| Factor | Purchaser name and narrative on the domestic like product factors |
|---|---|
| Manufacturing | *** |
| Manufacturing | *** |
| Manufacturing | *** |
| Manufacturing | *** |
| Manufacturing | *** |
| Manufacturing | *** |
| Manufacturing | *** |
| Perceptions | *** |
| Perceptions | *** |
| Perceptions | *** |
| Perceptions | *** |
| Perceptions | *** |
| Perceptions | *** |
| Price | *** |
| Price | *** |
| Price | *** |
| Price | *** |
| Price | *** |
| Price | *** |
| Price | *** |
| Price | *** |

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

**Table D.6 HCCIGM and LCCIGM: U.S. producers' narratives regarding the domestic like product factors comparing in-scope HCCIGM to out-of-scope LCCIGM**

| Factor | Producer name and narrative on the domestic like product factors |
|---|---|
| Physical characteristics | *** |
| Physical characteristics | *** |
| Physical characteristics | *** |
| Physical characteristics | *** |
| Interchangeability | *** |
| Interchangeability | *** |
| Interchangeability | *** |

| Factor | Producer name and narrative on the domestic like product factors |
|---|---|
| Interchangeability | *** |
| Channels | *** |
| Channels | *** |
| Channels | *** |
| Channels | *** |
| Manufacturing | *** |
| Manufacturing | *** |
| Manufacturing | *** |
| Manufacturing | *** |
| Perceptions | *** |
| Perceptions | *** |

| Factor | Producer name and narrative on the domestic like product factors |
|---|---|
| Perceptions | *** |
| Perceptions | *** |
| Price | *** |
| Price | *** |

| Factor | Producer name and narrative on the domestic like product factors |
|---|---|
| Price | *** |
| Price | *** |

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

**Table D.7 HCCIGM and LCCIGM: U.S. importers' narratives regarding the domestic like product factors comparing in-scope HCCIGM to out-of-scope LCCIGM**

| Factor | Importer name and narrative on the domestic like product factors |
|---|---|
| Physical characteristics | *** |
| Physical characteristics | *** |
| Physical characteristics | *** |
| Physical characteristics | *** |
| Physical characteristics | *** |
| Interchangeability | *** |
| Interchangeability | *** |
| Interchangeability | *** |

| Factor | Importer name and narrative on the domestic like product factors |
|---|---|
| Interchangeability | *** |
| Interchangeability | *** |
| Channels | *** |
| Channels | *** |
| Channels | *** |
| Channels | *** |
| Manufacturing | *** |

| Factor | Importer name and narrative on the domestic like product factors |
|---|---|
| Manufacturing | *** |
| Manufacturing | *** |
| Manufacturing | *** |
| Perceptions | *** |
| Perceptions | *** |
| Perceptions | *** |
| Perceptions | *** |

| Factor | Importer name and narrative on the domestic like product factors |
|---|---|
| Perceptions | *** |
| Price | *** |
| Price | *** |
| Price | *** |
| Price | *** |

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

**Table D.8 HCCIGM and LCCIGM: U.S. purchasers' narratives regarding the domestic like product factors comparing in-scope HCCIGM to LCCIGM**

| Factor | Purchaser name and narrative on the domestic like product factors |
|---|---|
| Physical characteristics | *** |
| Physical characteristics | *** |
| Physical characteristics | *** |
| Physical characteristics | *** |
| Physical characteristics | *** |
| Interchangeability | *** |
| Interchangeability | *** |
| Interchangeability | *** |
| Channels | *** |
| Channels | *** |
| Channels | *** |
| Manufacturing | *** |
| Manufacturing | *** |
| Manufacturing | *** |
| Perceptions | *** |
| Perceptions | *** |
| Perceptions | *** |
| Price | *** |
| Price | *** |
| Price | *** |

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

# APPENDIX E

# INFORMATION ON HCCIGM AND FORGED GRINDING MEDIA

**Table E.1 HCCIGM and Forged: U.S. producers, their position on the petition, location(s) of production, and share of reported production, 2024**

Share in percent

| Firm | Position on petition | Production location(s) | Share of production of HCCIGM only | Share of production of forged only | Share of production of HCCIGM plus forged |
|---|---|---|---|---|---|
| Gerdau | *** | Duluth, MN | — | *** | *** |
| Magotteaux | Petitioner | Pulaski, TN | 100.0 | *** | *** |
| Molycop | *** | Kansas City, MO | — | *** | *** |
| Vinton | *** | Vinton, TX | — | *** | *** |
| All producers | Various | Various | 100.0 | 100.0 | 100.0 |

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

**Table E.2 Forged: U.S. producers' ownership, related and/or affiliated firms**

| Reporting firm | Relationship type and related firm | Details of relationship |
|---|---|---|
| *** | *** | *** |
| *** | *** | *** |
| *** | *** | *** |
| *** | *** | *** |
| *** | *** | *** |
| *** | *** | *** |
| *** | *** | *** |

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

**Table E.3 HCCIGM and Forged: Important industry events since January 1, 2022**

| Item | Firm | Event |
|---|---|---|
| Investment | Vinton Steel, LLC | In February 2025, Vinton Steel, LLC, announced a $255 million expansion at their facility in El Paso County, Texas. It is anticipated that this will increase production from 240,000 tons to over 300,000 tons of steel products. This facility produces grinding media balls along with other steel products. |

Source: El Paso Times, "Vinton Steel announces $255M expansion with new jobs at minimill in El Paso County," February 20, 2025 at https://www.elpasotimes.com/story/money/business/2025/02/21/vinton-steel-announces-255-million-dollar-expansion-for-minimill-in-el-paso-county/79312806007/.

**Table E.4 HCCIGM and Forged: U.S. producers' installed and practical capacity, production, and utilization on the same equipment as subject production, by period**

Capacity and production in short tons; utilization in percent

| Item | Measure | 2022 | 2023 | 2024 |
|---|---|---|---|---|
| Forged grinding media | Practical capacity | *** | *** | *** |
| Forged grinding media | Production | *** | *** | *** |
| Forged grinding media | Utilization | *** | *** | *** |
| HCCIGM and forged grinding media | Practical capacity | *** | *** | *** |
| HCCIGM and forged grinding media | Production | *** | *** | *** |
| HCCIGM and forged grinding media | Utilization | *** | *** | *** |

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

**Table E.5 HCCIGM and Forged: U.S. producers' production and share of production, by product type and period**

Production in short tons; share in percent

| Item | Product | 2022 | 2023 | 2024 |
|---|---|---|---|---|
| Production | HCCIGM | *** | *** | *** |
| Production | Forged | *** | *** | *** |
| Production | Both | *** | *** | *** |
| Share of production | HCCIGM | *** | *** | *** |
| Share of production | Forged | *** | *** | *** |
| Share of production | Both | *** | *** | *** |

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

**Table E.6 Forged: U.S. producers' total shipments, by destination and period**

Quantity in short tons; value in 1,000 dollars, unit values in dollars per short ton; shares in percent

| Item | Measure | 2022 | 2023 | 2024 |
|---|---|---|---|---|
| U.S. shipments | Quantity | *** | *** | *** |
| Export shipments | Quantity | *** | *** | *** |
| Total shipments | Quantity | *** | *** | *** |
| U.S. shipments | Value | *** | *** | *** |
| Export shipments | Value | *** | *** | *** |
| Total shipments | Value | *** | *** | *** |
| U.S. shipments | Unit value | *** | *** | *** |
| Export shipments | Unit value | *** | *** | *** |
| Total shipments | Unit value | *** | *** | *** |
| U.S. shipments | Share of quantity | *** | *** | *** |
| Export shipments | Share of quantity | *** | *** | *** |
| Total shipments | Share of quantity | *** | *** | *** |
| U.S. shipments | Share of value | *** | *** | *** |
| Export shipments | Share of value | *** | *** | *** |
| Total shipments | Share of value | *** | *** | *** |

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

**Table E.7 Forged: U.S. producers' average unit values of U.S. shipments, by product type and period**

Unit values in dollars per short ton

| Item | Product type | 2022 | 2023 | 2024 |
|---|---|---|---|---|
| As reported | HCCIGM | *** | *** | *** |
| As reported | Forged | *** | *** | *** |
| Equalized | HCCIGM | *** | *** | *** |
| Equalized | Forged | *** | *** | *** |

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

Note: Based on email correspondence with ***, HCCIGM lasts approximately twice as long in their machinery as forged grinding media. In other words, *** must buy twice as many forged grinding media for use in their machinery for every one HCCIGM for a certain period. As such, the equalized average unit value for forged grinding media was multiplied by two in this table to represent the comparative price of procuring HCCIGM relative to forged grinding media from the prospective an end user such as ***.

**Table E.8 HCCIGM and Forged: U.S. producers' total shipments, by destination and period**

Quantity in short tons; value in 1,000 dollars, unit values in dollars per short ton; shares in percent

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

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

**Table E.9 HCCIGM and Forged: Share of U.S. shipments, by product type, channel of distribution, and period**

Quantity in short tons; share in percent

| Product | Channel | Measure | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|
| Forged grinding media | Distributors | Quantity | *** | *** | *** |
| Forged grinding media | Mining | Quantity | *** | *** | *** |
| Forged grinding media | Cement | Quantity | *** | *** | *** |
| Forged grinding media | Other | Quantity | *** | *** | *** |
| Forged grinding media | All channels | Quantity | *** | *** | *** |
| Forged grinding media | Distributors | Share | *** | *** | *** |
| Forged grinding media | Mining | Share | *** | *** | *** |
| Forged grinding media | Cement | Share | *** | *** | *** |
| Forged grinding media | Other | Share | *** | *** | *** |
| Forged grinding media | All channels | Share | 100.0 | 100.0 | 100.0 |
| HCCIGM and forged grinding media | Distributors | Quantity | *** | *** | *** |
| HCCIGM and forged grinding media | Mining | Quantity | *** | *** | *** |
| HCCIGM and forged grinding media | Cement | Quantity | *** | *** | *** |
| HCCIGM and forged grinding media | Other | Quantity | *** | *** | *** |
| HCCIGM and forged grinding media | All channels | Quantity | *** | *** | *** |
| HCCIGM and forged grinding media | Distributors | Share | *** | *** | *** |
| HCCIGM and forged grinding media | Mining | Share | *** | *** | *** |
| HCCIGM and forged grinding media | Cement | Share | *** | *** | *** |
| HCCIGM and forged grinding media | Other | Share | *** | *** | *** |
| HCCIGM and forged grinding media | All channels | Share | 100.0 | 100.0 | 100.0 |

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

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

**Table E.10 HCCIGM and Forged: U.S. producers' inventories and their ratios to select items, by product type and period**

Quantity in short tons; ratio in percent

| Product | Item | 2022 | 2023 | 2024 |
|---|---|---|---|---|
| Forged grinding media | End-of-period inventory quantity | *** | *** | *** |
| Forged grinding media | Inventory ratio to U.S. production | *** | *** | *** |
| Forged grinding media | Inventory ratio to U.S. shipments | *** | *** | *** |
| Forged grinding media | Inventory ratio to total shipments | *** | *** | *** |
| HCCIGM and forged grinding media | End-of-period inventory quantity | *** | *** | *** |
| HCCIGM and forged grinding media | Inventory ratio to U.S. production | *** | *** | *** |
| HCCIGM and forged grinding media | Inventory ratio to U.S. shipments | *** | *** | *** |
| HCCIGM and forged grinding media | Inventory ratio to total shipments | *** | *** | *** |

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

**Table E.11 Forged: U.S. producers' employment related information, by item and period**

| Item | 2022 | 2023 | 2024 |
|---|---|---|---|
| Production and related workers (PRWs) (number) | *** | *** | *** |
| Total hours worked (1,000 hours) | *** | *** | *** |
| Hours worked per PRW (hours) | *** | *** | *** |
| Wages paid ($1,000) | *** | *** | *** |
| Hourly wages (dollars per hour) | *** | *** | *** |
| Productivity (short tons per 1,000 hours) | *** | *** | *** |
| Unit labor costs (dollars per short ton) | *** | *** | *** |

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

**Table E.12 HCCIGM and Forged: U.S. producers' employment related information, by item and period**

| Item | 2022 | 2023 | 2024 |
|---|---|---|---|
| Production and related workers (PRWs) (number) | *** | *** | *** |
| Total hours worked (1,000 hours) | *** | *** | *** |
| Hours worked per PRW (hours) | *** | *** | *** |
| Wages paid ($1,000) | *** | *** | *** |
| Hourly wages (dollars per hour) | *** | *** | *** |
| Productivity (short tons per 1,000 hours) | *** | *** | *** |
| Unit labor costs (dollars per short ton) | *** | *** | *** |

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

**Table E.13 HCCIGM and Forged: U.S. imports, by source, product type, and period**

Quantity in short tons; value in 1,000 dollars, unit value in dollars per short ton

| Source and product | Measure | 2022 | 2023 | 2024 |
|---|---|---|---|---|
| India: HCCIGM | Quantity | *** | *** | *** |
| Nonsubject sources: HCCIGM | Quantity | *** | *** | *** |
| All import sources: HCCIGM | Quantity | *** | *** | *** |
| All import sources: Forged | Quantity | *** | *** | *** |
| All import sources: HCCIGM and forged | Quantity | *** | *** | *** |
| India: HCCIGM | Value | *** | *** | *** |
| Nonsubject sources: HCCIGM | Value | *** | *** | *** |
| All import sources: HCCIGM | Value | *** | *** | *** |
| All import sources: Forged | Value | *** | *** | *** |
| All import sources: HCCIGM and forged | Value | *** | *** | *** |
| India: HCCIGM | Unit value | *** | *** | *** |
| Nonsubject sources: HCCIGM | Unit value | *** | *** | *** |
| All import sources: HCCIGM | Unit value | *** | *** | *** |
| All import sources: Forged | Unit value | *** | *** | *** |
| All import sources: HCCIGM and forged | Unit value | *** | *** | *** |

Table continued.

**Table E.13 (Continued) HCCIGM and Forged: U.S. imports, by source, product type, and period**

Share and ratio in percent; ratio represents the ratio to U.S. production of HCCIGM and forged

| Source and product | Measure | 2022 | 2023 | 2024 |
|---|---|---|---|---|
| India: HCCIGM | Share of quantity | *** | *** | *** |
| Nonsubject sources: HCCIGM | Share of quantity | *** | *** | *** |
| All import sources: HCCIGM | Share of quantity | *** | *** | *** |
| All import sources: Forged | Share of quantity | *** | *** | *** |
| All import sources: HCCIGM and forged | Share of quantity | 100.0 | 100.0 | 100.0 |
| India: HCCIGM | Share of value | *** | *** | *** |
| Nonsubject sources: HCCIGM | Share of value | *** | *** | *** |
| All import sources: HCCIGM | Share of value | *** | *** | *** |
| All import sources: Forged | Share of value | *** | *** | *** |
| All import sources: HCCIGM and forged | Share of value | 100.0 | 100.0 | 100.0 |
| India: HCCIGM | Ratio | *** | *** | *** |
| Nonsubject sources: HCCIGM | Ratio | *** | *** | *** |
| All import sources: HCCIGM | Ratio | *** | *** | *** |
| All import sources: Forged | Ratio | *** | *** | *** |
| All import sources: HCCIGM and forged | Ratio | *** | *** | *** |

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

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

**Table E.14 HCCIGM and Forged: Apparent U.S. consumption and market shares based on quantity data, by source, product type, and period**

Quantity in short tons; share in percent

| Product and source | Measure | 2022 | 2023 | 2024 |
|---|---|---|---|---|
| HCCIGM: U.S. producers | Quantity | *** | *** | *** |
| Forged: U.S. producers | Quantity | *** | *** | *** |
| HCCIGM and forged: U.S. producers | Quantity | *** | *** | *** |
| HCCIGM: India | Quantity | *** | *** | *** |
| HCCIGM: Nonsubject sources | Quantity | *** | *** | *** |
| HCCIGM: All import sources | Quantity | *** | *** | *** |
| Forged: All import sources | Quantity | *** | *** | *** |
| HCCIGM and forged: All import sources | Quantity | *** | *** | *** |
| HCCIGM and forged: All sources | Quantity | *** | *** | *** |
| HCCIGM: U.S. producers | Share | *** | *** | *** |
| Forged: U.S. producers | Share | *** | *** | *** |
| HCCIGM and forged: U.S. producers | Share | *** | *** | *** |
| HCCIGM: India | Share | *** | *** | *** |
| HCCIGM: Nonsubject sources | Share | *** | *** | *** |
| HCCIGM: All import sources | Share | *** | *** | *** |
| Forged: All import sources | Share | *** | *** | *** |
| HCCIGM and forged: All import sources | Share | *** | *** | *** |
| HCCIGM and forged: All sources | Share | 100.0 | 100.0 | 100.0 |

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

**Table E.15 HCCIGM and Forged: Apparent U.S. consumption and market shares based on value data, by source, product type, and period**

Value in 1,000 dollars; share in percent

| Product and source | Measure | 2022 | 2023 | 2024 |
|---|---|---|---|---|
| HCCIGM: U.S. producers | Value | *** | *** | *** |
| Forged: U.S. producers | Value | *** | *** | *** |
| HCCIGM and forged: U.S. producers | Value | *** | *** | *** |
| HCCIGM: India | Value | *** | *** | *** |
| HCCIGM: Nonsubject sources | Value | *** | *** | *** |
| HCCIGM: All import sources | Value | *** | *** | *** |
| Forged: All import sources | Value | *** | *** | *** |
| HCCIGM and forged: All import sources | Value | *** | *** | *** |
| HCCIGM and forged: All sources | Value | *** | *** | *** |
| HCCIGM: U.S. producers | Value | *** | *** | *** |
| Forged: U.S. producers | Value | *** | *** | *** |
| HCCIGM and forged: U.S. producers | Share | *** | *** | *** |
| HCCIGM: India | Share | *** | *** | *** |
| HCCIGM: Nonsubject sources | Share | *** | *** | *** |
| HCCIGM: All import sources | Share | *** | *** | *** |
| Forged: All import sources | Share | *** | *** | *** |
| HCCIGM and forged: All import sources | Share | *** | *** | *** |
| HCCIGM and forged: All sources | Share | 100.0 | 100.0 | 100.0 |

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

# APPENDIX F

# COMBINED FINANCIAL RESULTS OF HCCIGM AND FORGED GRINDING MEDIA

**Table F.1 Forged: U.S. producers' results of operations, forged product, by item and period**

Quantity in short tons; value in 1,000 dollars; ratios in percent

| Item | Measure | 2022 | 2023 | 2024 |
|---|---|---|---|---|
| Total net sales | Quantity | *** | *** | *** |
| Total net sales | Value | *** | *** | *** |
| COGS: Raw materials | Value | *** | *** | *** |
| COGS: Direct labor | Value | *** | *** | *** |
| COGS: Other factory | Value | *** | *** | *** |
| COGS: Total | Value | *** | *** | *** |
| Gross profit or (loss) | Value | *** | *** | *** |
| SG&A expenses | Value | *** | *** | *** |
| Operating income or (loss) | Value | *** | *** | *** |
| Interest expense | Value | *** | *** | *** |
| All other expenses | Value | *** | *** | *** |
| All other income | Value | *** | *** | *** |
| Net income or (loss) | Value | *** | *** | *** |
| Depreciation/amortization | Value | *** | *** | *** |
| Cash flow | Value | *** | *** | *** |
| COGS: Raw materials | Ratio to NS | *** | *** | *** |
| COGS: Direct labor | Ratio to NS | *** | *** | *** |
| COGS: Other factory | Ratio to NS | *** | *** | *** |
| COGS: Total | Ratio to NS | *** | *** | *** |
| Gross profit | Ratio to NS | *** | *** | *** |
| SG&A expense | Ratio to NS | *** | *** | *** |
| Operating income or (loss) | Ratio to NS | *** | *** | *** |
| Net income or (loss) | Ratio to NS | *** | *** | *** |

Table continued.

**Table F.1 (Continued) Forged: U.S. producers' results of operations, by item and period**

Shares in percent; unit values in dollars per short ton; count in number of firms reporting

| Item | Measure | 2022 | 2023 | 2024 |
|---|---|---|---|---|
| COGS: Raw materials | Share | *** | *** | *** |
| COGS: Direct labor | Share | *** | *** | *** |
| COGS: Other factory | Share | *** | *** | *** |
| COGS: Total | Share | 100.0 | 100.0 | 100.0 |
| Total net sales | Unit value | *** | *** | *** |
| COGS: Raw materials | Unit value | *** | *** | *** |
| COGS: Direct labor | Unit value | *** | *** | *** |
| COGS: Other factory | Unit value | *** | *** | *** |
| COGS: Total | Unit value | *** | *** | *** |
| Gross profit or (loss) | Unit value | *** | *** | *** |
| SG&A expenses | Unit value | *** | *** | *** |
| Operating income or (loss) | Unit value | *** | *** | *** |
| Net income or (loss) | Unit value | *** | *** | *** |
| Operating losses | Count | *** | *** | *** |
| Net losses | Count | *** | *** | *** |
| Data | Count | *** | *** | *** |

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

Note: Shares represent the share of COGS. Zeroes, null values, and undefined calculations are suppressed and shown as "---".

**Table F.2 Forged: Changes in AUVs between comparison periods**

Changes in percent

| Item | 2022–24 | 2022–23 | 2023–24 |
|---|---|---|---|
| Total net sales | ▼*** | ▼*** | ▼*** |
| COGS: Raw materials | ▼*** | ▼*** | ▼*** |
| COGS: Direct labor | ▲*** | ▲*** | ▲*** |
| COGS: Other factory | ▼*** | ▲*** | ▼*** |
| COGS: Total | ▼*** | ▼*** | ▼*** |

Table continued.

**Table F.2 (Continued) Forged: Changes in AUVs between comparison periods**

Changes in dollars per short ton

| Item | 2022–24 | 2022–23 | 2023–24 |
|---|---|---|---|
| Total net sales | ▼*** | ▼*** | ▼*** |
| COGS: Raw materials | ▼*** | ▼*** | ▼*** |
| COGS: Direct labor | ▲*** | ▲*** | ▲*** |
| COGS: Other factory | ▼*** | ▲*** | ▼*** |
| COGS: Total | ▼*** | ▼*** | ▼*** |
| Gross profit or (loss) | ▲*** | ▲*** | ▼*** |
| SG&A expense | ▲*** | ▲*** | ▲*** |
| Operating income or (loss) | ▲*** | ▲*** | ▼*** |
| Net income or (loss) | ▲*** | ▲*** | ▲*** |

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

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

**Table F.3 HCCIGM and forged: U.S. producers' results of operations, by item and period**

Quantity in short tons; value in 1,000 dollars; ratio in percent

| Item | Measure | 2022 | 2023 | 2024 |
|---|---|---|---|---|
| Total net sales | Quantity | *** | *** | *** |
| Total net sales | Value | *** | *** | *** |
| COGS: Raw materials | Value | *** | *** | *** |
| COGS: Direct labor | Value | *** | *** | *** |
| COGS: Other factory | Value | *** | *** | *** |
| COGS: Total | Value | *** | *** | *** |
| Gross profit or (loss) | Value | *** | *** | *** |
| SG&A expenses | Value | *** | *** | *** |
| Operating income or (loss) | Value | *** | *** | *** |
| Interest expense | Value | *** | *** | *** |
| All other expenses | Value | *** | *** | *** |
| All other income | Value | *** | *** | *** |
| Net income or (loss) | Value | *** | *** | *** |
| Depreciation/amortization | Value | *** | *** | *** |
| Cash flow | Value | *** | *** | *** |
| COGS: Raw materials | Ratio to NS | *** | *** | *** |
| COGS: Direct labor | Ratio to NS | *** | *** | *** |
| COGS: Other factory | Ratio to NS | *** | *** | *** |
| COGS: Total | Ratio to NS | *** | *** | *** |
| Gross profit | Ratio to NS | *** | *** | *** |
| SG&A expense | Ratio to NS | *** | *** | *** |
| Operating income or (loss) | Ratio to NS | *** | *** | *** |
| Net income or (loss) | Ratio to NS | *** | *** | *** |

Table continued.

**Table F.3 (Continued) HCCIGM and forged: U.S. producers' results of operations, by item and period**

Shares in percent; unit values in dollars per short ton; count in number of firms reporting

| Item | Measure | 2022 | 2023 | 2024 |
|---|---|---|---|---|
| COGS: Raw materials | Share | *** | *** | *** |
| COGS: Direct labor | Share | *** | *** | *** |
| COGS: Other factory | Share | *** | *** | *** |
| COGS: Total | Share | 100.0 | 100.0 | 100.0 |
| Total net sales | Unit value | *** | *** | *** |
| COGS: Raw materials | Unit value | *** | *** | *** |
| COGS: Direct labor | Unit value | *** | *** | *** |
| COGS: Other factory | Unit value | *** | *** | *** |
| COGS: Total | Unit value | *** | *** | *** |
| Gross profit or (loss) | Unit value | *** | *** | *** |
| SG&A expenses | Unit value | *** | *** | *** |
| Operating income or (loss) | Unit value | *** | *** | *** |
| Net income or (loss) | Unit value | *** | *** | *** |
| Operating losses | Count | *** | *** | *** |
| Net losses | Count | *** | *** | *** |
| Data | Count | *** | *** | *** |

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

Note: Zeroes, null values, and undefined calculations are suppressed and shown as "—". Period changes preceded by a "▲" represent an increase, while period changes preceded by a "▼" represent a decrease.

**Table F.4 HCCIGM and forged: Changes in AUVs between comparison periods**

Changes in percent

| Item | 2022–24 | 2022–23 | 2023–24 |
|---|---|---|---|
| Total net sales | ▼*** | ▼*** | ▼*** |
| COGS: Raw materials | ▼*** | ▼*** | ▼*** |
| COGS: Direct labor | ▼*** | ▼*** | ▲*** |
| COGS: Other factory | ▼*** | ▼*** | ▼*** |
| COGS: Total | ▼*** | ▼*** | ▼*** |

Table continued.

**Table F.4 (Continued) HCCIGM and forged: Changes in AUVs between comparison periods**

Changes in dollars per short ton

| Item | 2022–24 | 2022–23 | 2023–24 |
|---|---|---|---|
| Total net sales | ▼*** | ▼*** | ▼*** |
| COGS: Raw materials | ▼*** | ▼*** | ▼*** |
| COGS: Direct labor | ▼*** | ▼*** | ▲*** |
| COGS: Other factory | ▼*** | ▼*** | ▼*** |
| COGS: Total | ▼*** | ▼*** | ▼*** |
| Gross profit or (loss) | ▲*** | ▲*** | ▲*** |
| SG&A expense | ▲*** | ▲*** | ▲*** |
| Operating income or (loss) | ▲*** | ▲*** | ▲*** |
| Net income or (loss) | ▲*** | ▲*** | ▲*** |

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

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

**Table F.5 HCCIGM and forged: U.S. producers' sales, costs/expenses, and profitability: Net sales quantity, by firm and period**

Quantity in short tons

| Firm | 2022 | 2023 | 2024 |
|---|---|---|---|
| Magotteaux | *** | *** | *** |
| HCCIGM producers | *** | *** | *** |
| Gerdau | *** | *** | *** |
| Molycop | *** | *** | *** |
| Vinton | *** | *** | *** |
| Forged producers | *** | *** | *** |
| All producers | *** | *** | *** |

Table continued.

**Table F.5 (Continued) HCCIGM and forged: U.S. producers' sales, costs/expenses, and profitability: Total net sales value, by firm and period**

Value in 1,000 dollars

| Firm | 2022 | 2023 | 2024 |
|---|---|---|---|
| Magotteaux | *** | *** | *** |
| HCCIGM producers | *** | *** | *** |
| Gerdau | *** | *** | *** |
| Molycop | *** | *** | *** |
| Vinton | *** | *** | *** |
| Forged producers | *** | *** | *** |
| All producers | *** | *** | *** |

Table continued.

**Table F.5 (Continued) HCCIGM and forged: U.S. producers' sales, costs/expenses, and profitability: COGS, by firm and period**

Value in 1,000 dollars

| Firm | 2022 | 2023 | 2024 |
|---|---|---|---|
| Magotteaux | *** | *** | *** |
| HCCIGM producers | *** | *** | *** |
| Gerdau | *** | *** | *** |
| Molycop | *** | *** | *** |
| Vinton | *** | *** | *** |
| Forged producers | *** | *** | *** |
| All producers | *** | *** | *** |

Table continued.

**Table F.5 (Continued) HCCIGM and forged: U.S. producers' sales, costs/expenses, and profitability: Gross profit or (loss), by firm and period**

Value in 1,000 dollars

| Firm | 2022 | 2023 | 2024 |
|---|---|---|---|
| Magotteaux | *** | *** | *** |
| HCCIGM producers | *** | *** | *** |
| Gerdau | *** | *** | *** |
| Molycop | *** | *** | *** |
| Vinton | *** | *** | *** |
| Forged producers | *** | *** | *** |
| All producers | *** | *** | *** |

Table continued.

**Table F.5 (Continued) HCCIGM and forged: U.S. producers' sales, costs/expenses, and profitability: SG&A expenses, by firm and period**

Value in 1,000 dollars

| Firm | 2022 | 2023 | 2024 |
|---|---|---|---|
| Magotteaux | *** | *** | *** |
| HCCIGM producers | *** | *** | *** |
| Gerdau | *** | *** | *** |
| Molycop | *** | *** | *** |
| Vinton | *** | *** | *** |
| Forged producers | *** | *** | *** |
| All producers | *** | *** | *** |

Table continued.

**Table F.5 (Continued) HCCIGM and forged: U.S. producers' sales, costs/expenses, and profitability: Operating income or (loss), by firm and period**

Value in 1,000 dollars

| Firm | 2022 | 2023 | 2024 |
|---|---|---|---|
| Magotteaux | *** | *** | *** |
| HCCIGM producers | *** | *** | *** |
| Gerdau | *** | *** | *** |
| Molycop | *** | *** | *** |
| Vinton | *** | *** | *** |
| Forged producers | *** | *** | *** |
| All producers | *** | *** | *** |

Table continued.

**Table F.5 (Continued) HCCIGM and forged: U.S. producers' sales, costs/expenses, and profitability: Net income or (loss), by firm and period**

Value in 1,000 dollars

| Firm | 2022 | 2023 | 2024 |
|---|---|---|---|
| Magotteaux | *** | *** | *** |
| HCCIGM producers | *** | *** | *** |
| Gerdau | *** | *** | *** |
| Molycop | *** | *** | *** |
| Vinton | *** | *** | *** |
| Forged producers | *** | *** | *** |
| All producers | *** | *** | *** |

Table continued.

**Table F.5 (Continued) HCCIGM and forged: U.S. producers' sales, costs/expenses, and profitability: Ratio of COGS to net sales value, by firm and period**

Ratio in percent

| Firm | 2022 | 2023 | 2024 |
|---|---|---|---|
| Magotteaux | *** | *** | *** |
| HCCIGM producers | *** | *** | *** |
| Gerdau | *** | *** | *** |
| Molycop | *** | *** | *** |
| Vinton | *** | *** | *** |
| Forged producers | *** | *** | *** |
| All producers | *** | *** | *** |

Table continued.

**Table F.5 (Continued) HCCIGM and forged: U.S. producers' sales, costs/expenses, and profitability: Ratio of gross profit or (loss), by firm and period**

Ratio in percent

| Firm | 2022 | 2023 | 2024 |
|---|---|---|---|
| Magotteaux | *** | *** | *** |
| HCCIGM producers | *** | *** | *** |
| Gerdau | *** | *** | *** |
| Molycop | *** | *** | *** |
| Vinton | *** | *** | *** |
| Forged producers | *** | *** | *** |
| All producers | *** | *** | *** |

Table continued.

**Table F.5 (Continued) HCCIGM and forged: U.S. producers' sales, costs/expenses, and profitability: Ratio of SG&A expenses to net sales value, by firm and period**

Ratio in percent

| Firm | 2022 | 2023 | 2024 |
|---|---|---|---|
| Magotteaux | *** | *** | *** |
| HCCIGM producers | *** | *** | *** |
| Gerdau | *** | *** | *** |
| Molycop | *** | *** | *** |
| Vinton | *** | *** | *** |
| Forged producers | *** | *** | *** |
| All producers | *** | *** | *** |

Table continued.

**Table F.5 (Continued) HCCIGM and forged: U.S. producers' sales, costs/expenses, and profitability: Ratio of operating income or (loss) to net sales value, by firm and period**

Ratio in percent

| Firm | 2022 | 2023 | 2024 |
|---|---|---|---|
| Magotteaux | *** | *** | *** |
| HCCIGM producers | *** | *** | *** |
| Gerdau | *** | *** | *** |
| Molycop | *** | *** | *** |
| Vinton | *** | *** | *** |
| Forged producers | *** | *** | *** |
| All producers | *** | *** | *** |

Table continued.

**Table F.5 (Continued) HCCIGM and forged: U.S. producers' sales, costs/expenses, and profitability: Ratio of net income or (loss), by firm and period**

Ratio in percent

| Firm | 2022 | 2023 | 2024 |
|---|---|---|---|
| Magotteaux | *** | *** | *** |
| HCCIGM producers | *** | *** | *** |
| Gerdau | *** | *** | *** |
| Molycop | *** | *** | *** |
| Vinton | *** | *** | *** |
| Forged producers | *** | *** | *** |
| All producers | *** | *** | *** |

Table continued.

**Table F.5 (Continued) HCCIGM and forged: U.S. producers' sales, costs/expenses, and profitability: Unit net sales value, by firm and period**

Unit values in dollars per short ton

| Firm | 2022 | 2023 | 2024 |
|---|---|---|---|
| Magotteaux | *** | *** | *** |
| HCCIGM producers | *** | *** | *** |
| Gerdau | *** | *** | *** |
| Molycop | *** | *** | *** |
| Vinton | *** | *** | *** |
| Forged producers | *** | *** | *** |
| All producers | *** | *** | *** |

Table continued.

**Table F.5 (Continued) HCCIGM and forged: U.S. producers' sales, costs/expenses, and profitability: Unit raw material costs, by firm and period**

Unit values in dollars per short ton

| Firm | 2022 | 2023 | 2024 |
|---|---|---|---|
| Magotteaux | *** | *** | *** |
| HCCIGM producers | *** | *** | *** |
| Gerdau | *** | *** | *** |
| Molycop | *** | *** | *** |
| Vinton | *** | *** | *** |
| Forged producers | *** | *** | *** |
| All producers | *** | *** | *** |

Table continued.

**Table F.5 (Continued) HCCIGM and forged: U.S. producers' sales, costs/expenses, and profitability: Unit direct labor costs, by firm and period**

Unit values in dollars per short ton

| Firm | 2022 | 2023 | 2024 |
|---|---|---|---|
| Magotteaux | *** | *** | *** |
| HCCIGM producers | *** | *** | *** |
| Gerdau | *** | *** | *** |
| Molycop | *** | *** | *** |
| Vinton | *** | *** | *** |
| Forged producers | *** | *** | *** |
| All producers | *** | *** | *** |

Table continued.

**Table F.5 (Continued) HCCIGM and forged: U.S. producers' sales, costs/expenses, and profitability: Unit other factory costs, by firm and period**

Unit values in dollars per short ton

| Firm | 2022 | 2023 | 2024 |
|---|---|---|---|
| Magotteaux | *** | *** | *** |
| HCCIGM producers | *** | *** | *** |
| Gerdau | *** | *** | *** |
| Molycop | *** | *** | *** |
| Vinton | *** | *** | *** |
| Forged producers | *** | *** | *** |
| All producers | *** | *** | *** |

Table continued.

**Table F.5 (Continued) HCCIGM and forged: U.S. producers' sales, costs/expenses, and profitability: Unit COGS, by firm and period**

Unit values in dollars per short ton

| Firm | 2022 | 2023 | 2024 |
|---|---|---|---|
| Magotteaux | *** | *** | *** |
| HCCIGM producers | *** | *** | *** |
| Gerdau | *** | *** | *** |
| Molycop | *** | *** | *** |
| Vinton | *** | *** | *** |
| Forged producers | *** | *** | *** |
| All producers | *** | *** | *** |

Table continued.

**Table F.5 (Continued) HCCIGM and forged: U.S. producers' sales, costs/expenses, and profitability: Unit gross profit or (loss), by firm and period**

Unit values in dollars per short ton

| Firm | 2022 | 2023 | 2024 |
|---|---|---|---|
| Magotteaux | *** | *** | *** |
| HCCIGM producers | *** | *** | *** |
| Gerdau | *** | *** | *** |
| Molycop | *** | *** | *** |
| Vinton | *** | *** | *** |
| Forged producers | *** | *** | *** |
| All producers | *** | *** | *** |

Table continued.

**Table F.5 (Continued) HCCIGM and forged: U.S. producers' sales, costs/expenses, and profitability: Unit SG&A expenses, by firm and period**

Unit values in dollars per short ton

| Firm | 2022 | 2023 | 2024 |
|---|---|---|---|
| Magotteaux | *** | *** | *** |
| HCCIGM producers | *** | *** | *** |
| Gerdau | *** | *** | *** |
| Molycop | *** | *** | *** |
| Vinton | *** | *** | *** |
| Forged producers | *** | *** | *** |
| All producers | *** | *** | *** |

Table continued.

**Table F.5 (Continued) HCCIGM and forged: U.S. producers' sales, costs/expenses, and profitability: Unit operating income or (loss), by firm and period**

Unit values in dollars per short ton

| Firm | 2022 | 2023 | 2024 |
|---|---|---|---|
| Magotteaux | *** | *** | *** |
| HCCIGM producers | *** | *** | *** |
| Gerdau | *** | *** | *** |
| Molycop | *** | *** | *** |
| Vinton | *** | *** | *** |
| Forged producers | *** | *** | *** |
| All producers | *** | *** | *** |

Table continued.

**Table F.5 (Continued) HCCIGM and forged: U.S. producers' sales, costs/expenses, and profitability: Unit net income or (loss), by firm and period**

Unit values in dollars per short ton

| Firm | 2022 | 2023 | 2024 |
|---|---|---|---|
| Magotteaux | *** | *** | *** |
| HCCIGM producers | *** | *** | *** |
| Gerdau | *** | *** | *** |
| Molycop | *** | *** | *** |
| Vinton | *** | *** | *** |
| Forged producers | *** | *** | *** |
| All producers | *** | *** | *** |

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

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

**Table F.6 HCCIGM and forged: U.S. producers' raw material costs in 2024, by major material inputs**

Values in 1,000 dollars; Unit values in dollars per short ton; Share of value in percent

| Item | Product | Value | Unit value | Share of value |
|---|---|---|---|---|
| Steel scrap | Forged | *** | *** | *** |
| Ferrochrome | Forged | *** | *** | *** |
| Other material inputs | Forged | *** | *** | *** |
| All raw materials | Forged | *** | *** | 100.0 |
| Steel scrap | HCCIGM and forged | *** | *** | *** |
| Ferrochrome | HCCIGM and forged | *** | *** | *** |
| Other material inputs | HCCIGM and forged | *** | *** | *** |
| All raw materials | HCCIGM and forged | *** | *** | 100.0 |

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

**Table F.7 HCCIGM and forged: U.S. producers' capital expenditures, by firm and period**

Value in 1,000 dollars

| Firm | 2022 | 2023 | 2024 |
|---|---|---|---|
| Magotteaux | *** | *** | *** |
| HCCIGM producers | *** | *** | *** |
| Gerdau | *** | *** | *** |
| Molycop | *** | *** | *** |
| Vinton | *** | *** | *** |
| Forged producers | *** | *** | *** |
| All producers | *** | *** | *** |

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

**Table F.8 HCCIGM and forged: U.S. producers' narrative descriptions of their capital expenditures, by firm and period**

| Firm | Product | Narrative on capital expenditures |
|---|---|---|
| Magotteaux | HCCIGM | *** |
| Gerdau | Forged | *** |
| Molycop | Forged | *** |
| Vinton | Forged | *** |

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

**Table F.9 HCCIGM and forged: U.S. producers' R&D expenses, by firm and period**

Value in 1,000 dollars

| Firm | 2022 | 2023 | 2024 |
|---|---|---|---|
| Magotteaux | *** | *** | *** |
| HCCIGM producers | *** | *** | *** |
| Gerdau | *** | *** | *** |
| Molycop | *** | *** | *** |
| Vinton | *** | *** | *** |
| Forged producers | *** | *** | *** |
| All producers | *** | *** | *** |

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

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

**Table F.10 HCCIGM and forged: U.S. producers' narrative descriptions of their R&D expenses, by firm**

| Firm | Product | Narrative on R&D expenses |
|---|---|---|
| Magotteaux | HCCIGM | *** |
| Gerdau | Forged | *** |
| Molycop | Forged | *** |
| Vinton | Forged | *** |

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

**Table F.11 HCCIGM and forged: U.S. producers' total assets, by firm and period**

Value in 1,000 dollars

| Firm | 2022 | 2023 | 2024 |
|---|---|---|---|
| Magotteaux | *** | *** | *** |
| HCCIGM producers | *** | *** | *** |
| Gerdau | *** | *** | *** |
| Molycop | *** | *** | *** |
| Vinton | *** | *** | *** |
| Forged producers | *** | *** | *** |
| All producers | *** | *** | *** |

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

**Table F.12 HCCIGM and forged: U.S. producers' ROA, by firm and period**

Value in 1,000 dollars

| Firm | 2022 | 2023 | 2024 |
|---|---|---|---|
| Magotteaux | *** | *** | *** |
| HCCIGM Producers | *** | *** | *** |
| Gerdau | *** | *** | *** |
| Molycop | *** | *** | *** |
| Vinton | *** | *** | *** |
| Forged producers | *** | *** | *** |
| All producers | *** | *** | *** |

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

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

**Table F.13 HCCIGM and forged: U.S. producers' narrative descriptions of their total net assets, by firm and period**

| Firm | Product | Narrative on assets |
|---|---|---|
| Magotteaux | HCCIGM | *** |
| Gerdau | Forged | *** |
| Molycop | Forged | *** |
| Vinton | Forged | *** |

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

**Table F.14 HCCIGM and Forged: Count of firms indicating actual and anticipated negative effects of imports from subject sources on investment, growth, and development since January 1, 2022, by effect**

| Effect | Category | Count: HCCIGM | Count: Forged Producers | Count: HCCIGM and forged |
|---|---|---|---|---|
| Cancellation, postponement, or rejection of expansion projects | Investment | *** | *** | *** |
| Denial or rejection of investment proposal | Investment | *** | *** | *** |
| Reduction in the size of capital investments | Investment | *** | *** | *** |
| Return on specific investments negatively impacted | Investment | *** | *** | *** |
| Other investment effects | Investment | *** | *** | *** |
| Any negative effects on investment | Investment | *** | *** | *** |
| Rejection of bank loans | Growth | *** | *** | *** |
| Lowering of credit rating | Growth | *** | *** | *** |
| Problem related to the issue of stocks or bonds | Growth | *** | *** | *** |
| Ability to service debt | Growth | *** | *** | *** |
| Other growth and development effects | Growth | *** | *** | *** |
| Any negative effects on growth and development | Growth | *** | *** | *** |
| Anticipated negative effects of imports | Future | *** | *** | *** |

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

**Table F.15 Forged: U.S. producers' narratives relating to actual and anticipated negative effects of imports on investment, growth, and development, since January 1, 2022, by firm and effect, since January 1, 2022**

| Item | Firm name and narrative on impact of imports |
|---|---|
| *** | *** |
| *** | *** |

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

# APPENDIX G

# OFFICIAL U.S. IMPORT STATISTICS

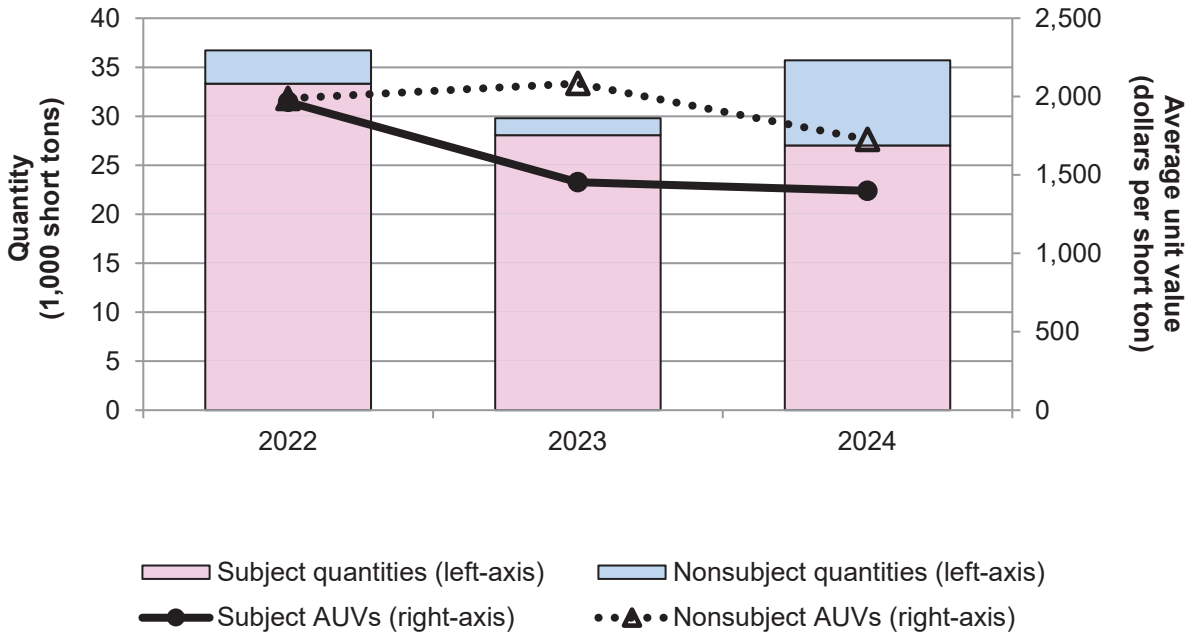
**Table G.1 Grinding balls and similar articles for mills, cast, of iron or steel, other than nonmalleable cast iron: U.S. imports, by source and period**

Quantity in short tons; value in 1,000 dollars, unit value in dollars per short ton, share in percent

| Source | Measure | 2022 | 2023 | 2024 |
|---|---|---|---|---|
| India | Quantity | 33,330 | 28,070 | 27,002 |
| Nonsubject sources | Quantity | 3,394 | 1,724 | 8,689 |
| All import sources | Quantity | 36,725 | 29,794 | 35,692 |
| India | Value | 65,506 | 40,787 | 37,781 |
| Nonsubject sources | Value | 6,749 | 3,593 | 15,000 |
| All import sources | Value | 72,255 | 44,381 | 52,781 |
| India | Unit value | 1,965 | 1,453 | 1,399 |
| Nonsubject sources | Unit value | 1,988 | 2,084 | 1,726 |
| All import sources | Unit value | 1,967 | 1,490 | 1,479 |
| India | Share of quantity | 90.8 | 94.2 | 75.7 |
| Nonsubject sources | Share of quantity | 9.2 | 5.8 | 24.3 |
| All import sources | Share of quantity | 100.0 | 100.0 | 100.0 |
| India | Share of value | 90.7 | 91.9 | 71.6 |
| Nonsubject sources | Share of value | 9.3 | 8.1 | 28.4 |
| All import sources | Share of value | 100.0 | 100.0 | 100.0 |

Source: Compiled from official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting number 7325.91.0000, accessed on February 10, 2025. Imports are based on the imports for consumption data series. Value data reflect landed duty-paid values.

**Figure G.1 Grinding balls and similar articles for mills, cast, of iron or steel, other than nonmalleable cast iron: U.S. import quantities and average unit values, by source and period**




Source: Compiled from official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting number 7325.91.0000, accessed on February 10, 2025. Imports are based on the imports for consumption data series. Value data reflect landed duty-paid values.

**Table G.2 Grinding balls and similar articles for mills, cast, of iron or steel, other than nonmalleable cast iron: Quantity of U.S. imports, by source and month**

Quantity in short tons

| Year | Month | India | Nonsubject sources | All import sources |
|---|---|---|---|---|
| 2022 | January | 4,117 | 97 | 4,214 |
| 2022 | February | 1,197 | 302 | 1,500 |
| 2022 | March | 1,860 | 32 | 1,892 |
| 2022 | April | 1,750 | 196 | 1,945 |
| 2022 | May | 1,908 | 735 | 2,644 |
| 2022 | June | 3,221 | 514 | 3,736 |
| 2022 | July | 3,177 | 154 | 3,331 |
| 2022 | August | 2,681 | 42 | 2,723 |
| 2022 | September | 2,272 | 73 | 2,345 |
| 2022 | October | 4,285 | 666 | 4,951 |
| 2022 | November | 5,637 | 1 | 5,638 |
| 2022 | December | 1,226 | 581 | 1,807 |
| 2023 | January | 2,161 | 436 | 2,597 |
| 2023 | February | 2,291 | 249 | 2,539 |
| 2023 | March | 986 | 66 | 1,052 |
| 2023 | April | 1,254 | 259 | 1,513 |
| 2023 | May | 1,149 | 61 | 1,210 |
| 2023 | June | 4,490 | 18 | 4,508 |
| 2023 | July | 5,476 | 61 | 5,537 |
| 2023 | August | 2,757 | 111 | 2,867 |
| 2023 | September | 585 | — | 585 |
| 2023 | October | 1,808 | 166 | 1,974 |
| 2023 | November | 1,674 | 28 | 1,702 |
| 2023 | December | 3,440 | 269 | 3,709 |
| 2024 | January | 2,005 | 461 | 2,466 |
| 2024 | February | 2,101 | 368 | 2,469 |
| 2024 | March | 3,158 | 22 | 3,180 |
| 2024 | April | 2,040 | 140 | 2,180 |
| 2024 | May | 854 | 192 | 1,047 |
| 2024 | June | 3,115 | 1 | 3,117 |
| 2024 | July | 5,508 | 597 | 6,106 |
| 2024 | August | 970 | 48 | 1,019 |
| 2024 | September | 2,134 | 2,217 | 4,351 |
| 2024 | October | 1,667 | 1,933 | 3,600 |
| 2024 | November | 2,699 | 569 | 3,268 |
| 2024 | December | 750 | 2,140 | 2,890 |

Source: Compiled from official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting number 7325.91.0000, accessed on February 10, 2025. Imports are based on the imports for consumption data series.

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

# APPENDIX H

# U.S. SHIPMENTS TO END USERS

**Table H.1 HCCIGM: U.S. producer Magotteaux's and U.S. importers' U.S. shipments to cement end users, by period and source**

Quantity in short tons; share and ratio in percent, ratio represents the ratio to overall consumption

| Source | Measure | 2022 | 2023 | 2024 |
|---|---|---|---|---|
| U.S. producer | Quantity | *** | *** | *** |
| India | Quantity | *** | *** | *** |
| Nonsubject | Quantity | *** | *** | *** |
| All import sources | Quantity | *** | *** | *** |
| All sources | Quantity | *** | *** | *** |
| U.S. producer | Share of quantity | *** | *** | *** |
| India | Share of quantity | *** | *** | *** |
| Nonsubject | Share of quantity | *** | *** | *** |
| All import sources | Share of quantity | *** | *** | *** |
| All sources | Share of quantity | 100.0 | 100.0 | 100.0 |
| U.S. producer | Ratio | *** | *** | *** |
| India | Ratio | *** | *** | *** |
| Nonsubject | Ratio | *** | *** | *** |
| All import sources | Ratio | *** | *** | *** |
| All sources | Ratio | *** | *** | *** |

Table continued.

**Table H.1 (Continued) HCCIGM: U.S. producer Magotteaux's and U.S. importers' U.S. shipments to mining end users, by period and source**

Quantity in short tons; share and ratio in percent, ratio represents the ratio to overall consumption

| Source | Measure | 2022 | 2023 | 2024 |
|---|---|---|---|---|
| U.S. producer | Quantity | *** | *** | *** |
| India | Quantity | *** | *** | *** |
| Nonsubject | Quantity | *** | *** | *** |
| All import sources | Quantity | *** | *** | *** |
| All sources | Quantity | *** | *** | *** |
| U.S. producer | Share of quantity | *** | *** | *** |
| India | Share of quantity | *** | *** | *** |
| Nonsubject | Share of quantity | *** | *** | *** |
| All import sources | Share of quantity | *** | *** | *** |
| All sources | Share of quantity | 100.0 | 100.0 | 100.0 |
| U.S. producer | Ratio | *** | *** | *** |
| India | Ratio | *** | *** | *** |
| Nonsubject | Ratio | *** | *** | *** |
| All import sources | Ratio | *** | *** | *** |
| All sources | Ratio | *** | *** | *** |

Table continued.

**Table H.1 (Continued) HCCIGM: U.S. producer Magotteaux's and U.S. importers' U.S. shipments to all other end users, by period and source**

Quantity in short tons; share and ratio in percent, ratio represents the ratio to overall consumption

| Source | Measure | 2022 | 2023 | 2024 |
|---|---|---|---|---|
| U.S. producer | Quantity | *** | *** | *** |
| India | Quantity | *** | *** | *** |
| Nonsubject | Quantity | *** | *** | *** |
| All import sources | Quantity | *** | *** | *** |
| All sources | Quantity | *** | *** | *** |
| U.S. producer | Share of quantity | *** | *** | *** |
| India | Share of quantity | *** | *** | *** |
| Nonsubject | Share of quantity | *** | *** | *** |
| All import sources | Share of quantity | *** | *** | *** |
| All sources | Share of quantity | 100.0 | 100.0 | 100.0 |
| U.S. producer | Ratio | *** | *** | *** |
| India | Ratio | *** | *** | *** |
| Nonsubject | Ratio | *** | *** | *** |
| All import sources | Ratio | *** | *** | *** |
| All sources | Ratio | *** | *** | *** |

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

# APPENDIX I

# FINANCIAL RESULTS OF DOMESTIC SALES OF HCCIGM

**Table I.1 HCCIGM: U.S. producer's results of operations, U.S. only, by item and period**

Quantity in short tons; value in 1,000 dollars; ratios in percent

| Item | Measure | 2022 | 2023 | 2024 |
|---|---|---|---|---|
| Total net sales | Quantity | *** | *** | *** |
| Total net sales | Value | *** | *** | *** |
| COGS: Raw materials | Value | *** | *** | *** |
| COGS: Direct labor | Value | *** | *** | *** |
| COGS: Other factory | Value | *** | *** | *** |
| COGS: Total | Value | *** | *** | *** |
| Gross profit or (loss) | Value | *** | *** | *** |
| SG&A expenses | Value | *** | *** | *** |
| Operating income or (loss) | Value | *** | *** | *** |
| Interest expense | Value | *** | *** | *** |
| All other expenses | Value | *** | *** | *** |
| All other income | Value | *** | *** | *** |
| Net income or (loss) | Value | *** | *** | *** |
| COGS: Raw materials | Ratio to NS | *** | *** | *** |
| COGS: Direct labor | Ratio to NS | *** | *** | *** |
| COGS: Other factory | Ratio to NS | *** | *** | *** |
| COGS: Total | Ratio to NS | *** | *** | *** |
| Gross profit | Ratio to NS | *** | *** | *** |
| SG&A expense | Ratio to NS | *** | *** | *** |
| Operating income or (loss) | Ratio to NS | *** | *** | *** |
| Net income or (loss) | Ratio to NS | *** | *** | *** |

Table continued.

**Table I.1 (Continued) HCCIGM: U.S. producer's results of operations, U.S. only, by item and period**

Shares in percent; unit values in dollars per short ton; count in number of firms reporting

| Item | Measure | 2022 | 2023 | 2024 |
|---|---|---|---|---|
| COGS: Raw materials | Share | *** | *** | *** |
| COGS: Direct labor | Share | *** | *** | *** |
| COGS: Other factory | Share | *** | *** | *** |
| COGS: Total | Share | 100.0 | 100.0 | 100.0 |
| Total net sales | Unit value | *** | *** | *** |
| COGS: Raw materials | Unit value | *** | *** | *** |
| COGS: Direct labor | Unit value | *** | *** | *** |
| COGS: Other factory | Unit value | *** | *** | *** |
| COGS: Total | Unit value | *** | *** | *** |
| Gross profit or (loss) | Unit value | *** | *** | *** |
| SG&A expenses | Unit value | *** | *** | *** |
| Operating income or (loss) | Unit value | *** | *** | *** |
| Net income or (loss) | Unit value | *** | *** | *** |
| Operating losses | Count | *** | *** | *** |
| Net losses | Count | *** | *** | *** |
| Data | Count | 1 | 1 | 1 |

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

Note: Shares represent the share of COGS. Zeroes, null values, and undefined calculations are suppressed and shown as "---".

**Table I.2 HCCIGM: Changes in AUVs between comparison periods, U.S. only**

Changes in percent

| Item | 2022–24 | 2022–23 | 2023–24 |
|---|---|---|---|
| Total net sales | ▼*** | ▼*** | ▲*** |
| COGS: Raw materials | ▼*** | ▼*** | ▼*** |
| COGS: Direct labor | ▼*** | ▼*** | ▼*** |
| COGS: Other factory | ▼*** | ▼*** | ▼*** |
| COGS: Total | ▼*** | ▼*** | ▼*** |

Table continued.

**Table I.2 (Continued) HCCIGM: Changes in AUVs between comparison periods, U.S. only**

Changes in dollars per short ton

| Item | 2022–24 | 2022–23 | 2023–24 |
|---|---|---|---|
| Total net sales | ▼*** | ▼*** | ▲*** |
| COGS: Raw materials | ▼*** | ▼*** | ▼*** |
| COGS: Direct labor | ▼*** | ▼*** | ▼*** |
| COGS: Other factory | ▼*** | ▼*** | ▼*** |
| COGS: Total | ▼*** | ▼*** | ▼*** |
| Gross profit or (loss) | ▼*** | ▼*** | ▲*** |
| SG&A expense | ▲*** | ▲*** | ▲*** |
| Operating income or (loss) | ▲*** | ▼*** | ▲*** |
| Net income or (loss) | ▲*** | ▼*** | ▲*** |

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

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

# APPENDIX J

# U.S. PURCHASERS' PURCHASES AND IMPORTS BY PRODUCT TYPE

**Table J.1 HCCIGM and forged griding media: U.S. purchasers' reported purchases and imports, by product type and period**

Quantity in short tons of HCCIGM equivalents; share in percent

| Product and source | Measure | 2022 | 2023 | 2024 |
|---|---|---|---|---|
| HCCIGM | Quantity | *** | *** | *** |
| Forged grinding media | Quantity | *** | *** | *** |
| Both products | Quantity | *** | *** | *** |
| HCCIGM | Share | *** | *** | *** |
| Forged grinding media | Share | *** | *** | *** |
| Both products | Share | *** | *** | *** |

Table continued

**Table J.1 (Continued) HCCIGM and forged griding media: U.S. purchasers' reported purchases and imports, by product type and period**

Change in quantity in shares (% Quantity) and changes for shares in percentage points (ppt share)

| Product and source | Measure | 2022–24 | 2022–23 | 2023–24 |
|---|---|---|---|---|
| HCCIGM | %Δ quantity | ▲*** | ▲*** | ▼*** |
| Forged grinding media | %Δ quantity | ▲*** | ▲*** | ▼*** |
| Both products | %Δ quantity | ▲*** | ▲*** | ▼*** |
| HCCIGM | pptΔ share | ▲*** | ▲*** | ▼*** |
| Forged grinding media | pptΔ share | ▼*** | ▼*** | ▲*** |
| Both products | pptΔ share | *** | *** | *** |

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

Note: Quantity data for forged grinding media was divided by 2 to present the equivalent quantity of HCCIGM that those purchases replaced (i.e., purchasers typically need to purchase twice as many forged grinding media to each HCCIGM purchased). See e-mail with *** detailing out that forged grinding media last two months to the four months that HCCIGM last.

**Table J.2 HCCIGM and forged griding media: U.S. purchasers' reported purchases and imports, by firm and product type**

Quantity in short tons HCCIGM equivalents; Change in shares in percentage points

| Firm | HCCIGM quantity | Forged grinding media quantity | Change in HCCIGM share | Change in forged share |
|---|---|---|---|---|
| *** | *** | *** | *** | *** |
| *** | *** | *** | *** | *** |
| *** | *** | *** | *** | *** |
| *** | *** | *** | *** | *** |
| *** | *** | *** | *** | *** |
| *** | *** | *** | *** | *** |
| *** | *** | *** | *** | *** |
| *** | *** | *** | *** | *** |
| *** | *** | *** | *** | *** |
| All firms | *** | *** | *** | *** |

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

Note: Changes in shares represent the share of the firm's total purchases of domestic and/or subject country imports between first and last years and are presented in percentage points. Zeroes, null values, and undefined calculations are suppressed and shown as "—".