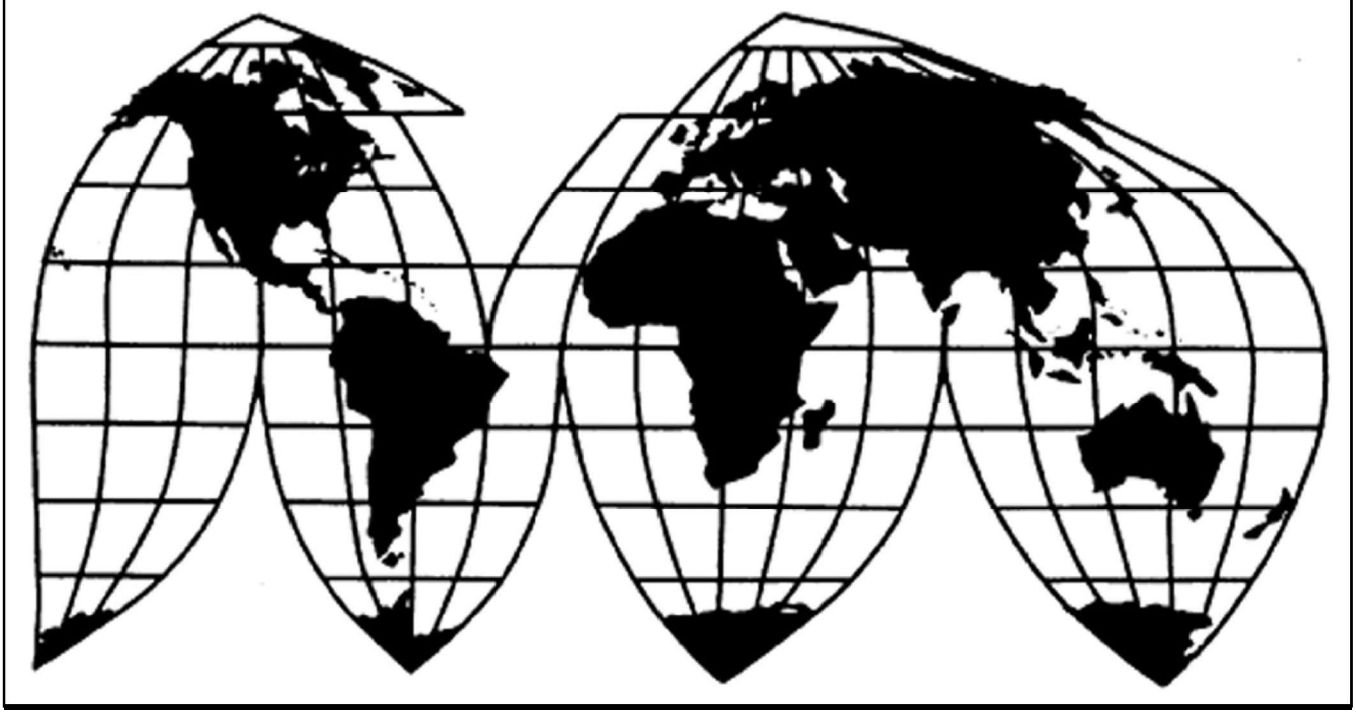
Barium Chloride from India

Investigation Nos. 701-TA-678 and 731-TA-1584 (Preliminary)

Publication 5295 **March 2022**

U.S. International Trade Commission



Washington, DC 20436

U.S. International Trade Commission

COMMISSIONERS

Jason E. Kearns, Chair
Randolph J. Stayin, Vice Chair
David S. Johanson
Rhonda K. Schmidtlein
Amy A. Karpel

Catherine DeFilippo
Director of Operations

Staff assigned

Alejandro Orozco, Investigator
Jeffrey Clark, Industry Analyst
Andrew Knipe, Economist
David Boyland, Accountant
Mara Alexander, Statistician
Courtney McNamara, Attorney
Mary Beth Jones, Supervisory Investigator

Address all communications to
Secretary to the Commission
United States International Trade Commission
Washington, DC 20436

U.S. International Trade Commission

Washington, DC 20436
www.usitc.gov

Barium Chloride from India

Investigation Nos. 701-TA-678 and 731-TA-1584 (Preliminary)

Publication 5295

March 2022

CONTENTS

Page

CONTENTS

Page

CONTENTS

Page

CONTENTS

Page

Appendixes

Note: Information that would reveal confidential operations of individual concerns may not be published.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

UNITED STATES INTERNATIONAL TRADE COMMISSION

Investigation Nos. 701-TA-678 and 731-TA-1584 (Preliminary)

Barium Chloride 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 there is a reasonable indication that an industry in the United States is materially injured by reason of imports of barium chloride from India, provided for in subheading 2827.39.45 of the Harmonized Tariff Schedule of the United States, that are alleged to be sold in the United States at less than fair value ("LTFV") and to be subsidized by the government of India.[2]

COMMENCEMENT OF FINAL PHASE INVESTIGATIONS

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

---

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

[2] 87 FR 7094 and 87 FR 7100 (February 8, 2022).

BACKGROUND

On January 12, 2022, Chemical Products Corp., Cartersville, Georgia, filed petitions with the Commission and Commerce, alleging that an industry in the United States is materially injured and threatened with material injury by reason of subsidized imports of barium chloride from India and LTFV imports of barium chloride from India. Accordingly, effective January 12, 2022, the Commission instituted countervailing duty investigation No. 701-TA-678 and antidumping duty investigation No. 731-TA-1584 (Preliminary).

Notice of the institution of the Commission's investigations and of a public conference to be held in connection therewith was given by posting copies of the notice in the Office of the Secretary, U.S. International Trade Commission, Washington, DC, and by publishing the notice in the *Federal Register* of January 19, 2022 (87 FR 2901). The Commission conducted its conference on February 2, 2022. All persons who requested the opportunity were permitted to participate.

Views of the Commission

Based on the record in the preliminary phase of these investigations, we determine that there is a reasonable indication that an industry in the United States is materially injured by reason of imports of barium chloride that are allegedly sold in the United States at less than fair value and imports of the subject merchandise from India that are allegedly subsidized by the government of India.

I. The Legal Standard for Preliminary Determinations

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

II. Background

Parties to the Investigations. Chemical Products Corp. ("CPC" or "petitioner"), a domestic producer of barium chloride, filed the petitions in these investigations on January 12, 2022. CPC appeared at the staff conference and submitted a postconference brief.[3]

Two respondent entities participated in these investigations. BassTech International, LLC ("BassTech"), an importer of subject merchandise, and Chaitanya Chemicals ("Chaitanya"),

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

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

[3] In light of the restrictions on access to the Commission building due to the COVID-19 pandemic, the Commission conducted its staff conference by videoconference and written witness testimony as set forth in procedures provided to the parties.

a producer and exporter of subject merchandise, appeared at the conference and submitted postconference briefs.

Data Coverage. U.S. industry data are based on the questionnaire response of CPC, which accounted for an estimated *** percent of U.S. production of barium chloride in 2020.[4] U.S. import data are based on questionnaire responses from eleven U.S. importers, eight of which are U.S. importers of subject merchandise, two of which are U.S. importers of nonsubject imports, and one that imported barium chloride from both sources, believed to account for *** imports of barium chloride from all sources.[5] The Commission received responses to its questionnaires from two foreign producers of subject merchandise, accounting for *** percent of U.S. imports of barium chloride from India in 2020.[6] [7]

III. Domestic Like Product

In determining whether there is a reasonable indication that an industry in the United States is materially injured or threatened with material injury by reason of imports of the subject merchandise, the Commission first defines the "domestic like product" and the "industry."[8] 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."[9] In turn, the Tariff Act defines

[4] Confidential Report, Memorandum INV-UU-016, ("CR"), Public Report ("PR") at I-4.

[5] CR/PR at I-4.

[6] CR/PR at VII-3.

[7] In October 1984, the Commission determined that an industry in the United States was materially injured by reason of imports of barium chloride from China sold at less than fair value. *Barium Chloride from the People's Republic of China*, Inv. No. 731-TA-149 (Final), USITC Pub. 1584 (Oct. 1984) ("China Original Determination") at 3, A-1. The Commission has subsequently conducted five five-year reviews regarding the antidumping duty order on barium chloride from China; and the order remains in place. *Barium Chloride from China*, Inv. No. 731-TA-149 (Review), USITC Pub. 3163 (Mar. 1999); *Barium Chloride from China*, Inv. No. 731-TA-149 (Second Review), USITC Pub. 3702 (July 2004); *Barium Chloride from China*, Inv. No. 731-TA-149 (Third Review), USITC Pub. 4157 (June 2010); *Barium Chloride from China,* Inv. No. 731-TA-149 (Fourth Review), USITC Pub. 4574 *(*Oct. 2015); *Barium Chloride from China,* Inv. No. 731-TA-149 (Fifth Review), USITC Pub. 5203 (June 2021). The scope in the reviews regarding the orders on barium chloride from China is substantively the same as the scope in the present investigations. *Barium Chloride from China*, USITC Pub. 5203 at 6; *see also* Petitions at I-7.

[8] 19 U.S.C. § 1677(4)(A).

[9] 19 U.S.C. § 1677(4)(A).

"domestic like product" as "a product which is like, or in the absence of like, most similar in characteristics and uses with, the article subject to an investigation."[10]

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.[11] 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."[12] The Commission then defines the domestic like product in light of the imported articles Commerce has identified.[13] The decision regarding the appropriate domestic like product(s) in an investigation is a factual determination, and the Commission has applied the statutory standard of "like" or "most similar in characteristics and uses" on a case-by-case basis.[14] No single factor is dispositive, and the Commission may consider other factors it deems relevant based on the facts of a particular investigation.[15] The Commission looks for clear dividing lines among possible like products and disregards minor

[10] 19 U.S.C. § 1677(10).

[11] 19 U.S.C. § 1677(10). The Commission must accept Commerce's determination as to the scope of the imported merchandise that is subsidized and/or sold at less than fair value. *See*, *e.g.*, *USEC, Inc. v. United States*, 34 Fed. App'x 725, 730 (Fed. Cir. 2002) ("The ITC may not modify the class or kind of imported merchandise examined by Commerce."); *Algoma Steel Corp. v. United States,* 688 F. Supp. 639, 644 (Ct. Int'l Trade 1988), *aff'd*, 865 F.3d 240 (Fed. Cir.), *cert. denied*, 492 U.S. 919 (1989).

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

[13] *Cleo*, 501 F.3d at 1298 n.1 ("Commerce's {scope} finding does not control the Commission's {like product} determination."); *Hosiden Corp. v. Advanced Display Mfrs.,* 85 F.3d 1561, 1568 (Fed. Cir. 1996) (the Commission may find a single like product corresponding to several different classes or kinds defined by Commerce); *Torrington Co. v. United States*, 747 F. Supp. 744, 748–52 (Ct. Int'l Trade 1990), *aff'd*, 938 F.2d 1278 (Fed. Cir. 1991) (affirming the Commission's determination defining six like products in investigations where Commerce found five classes or kinds).

[14] *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).

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

variations.[16] The Commission may, where appropriate, include domestic articles in the domestic like product in addition to those described in the scope.[17]

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

> *The merchandise covered by this investigation is barium chloride, a chemical compound having the formulas $BaCl_2$ or $BaCl_2$-$2H_2O$, currently classifiable under subheading 2827.39.4500 of the Harmonized Tariff Schedule of the United States (HTSUS). Although the HTSUS subheading is provided for convenience and customs purposes, the written description of the scope of this investigation is dispositive.*[18]

Barium chloride is produced in crystalline and anhydrous form. In its crystalline form, barium chloride is primarily used as an intermediate in the production of molecular catalyst sieves; in its anhydrous form, barium chloride is primarily used as an ingredient in heat-treating salts and metal fluxes.[19]

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

[17] *See*, *e.g.*, *Pure Magnesium from China and Israel*, Inv. Nos. 701-TA-403 and 731-TA-895-896 (Final), USITC Pub. 3467 at 8 n.34 (Nov. 2001); *Torrington,* 747 F. Supp. at 748-49 (holding that the Commission is not legally required to limit the domestic like product to the product advocated by the petitioner, co-extensive with the scope).

[18] *Barium Chloride From India: Initiation of Countervailing Duty Investigation*, 87 Fed. Reg. 7094 (Feb. 8, 2022); *Barium Chloride From India: Initiation of Antidumping Duty Investigation*, 87 Fed. Reg. 7100 (Feb. 8, 2022).

[19] CR/PR at I-3, I-8 – I-9.

a. Arguments of the Parties

Petitioner's Argument. CPC argues that the Commission should define a single domestic like product consisting of barium chloride, coextensive with the scope in these investigations, as it has in the prior reviews involving barium chloride from China.[20]

Respondents' Argument. For purposes of the preliminary phase of these investigations, BassTech does not challenge the proposed definition of a single domestic like product coextensive with the scope.[21]

b. Analysis and Conclusion

Based on the record, we define a single domestic like product consisting of barium chloride.

Physical Characteristics and Uses. Barium chloride in crystalline and anhydrous form share the same chemical composition, although they are used in different end-use applications.[22] Crystalline barium chloride is used primarily as an intermediate in the production of molecular catalyst sieves, which in turn are used in oil refinery complexes to separate industrially useful paraxylene molecules from other mixed xylenes.[23] The crystalline form also serves as a cleansing agent in the removal of soluble sulfates in certain chemical and water treatment processes; as a cleansing ingredient in lubricating oil additives; as a raw material in the production of certain chemicals, pigments, and paper coatings; and as a base material for the production of ink pigments and other barium intermediate products. The anhydrous form of barium chloride is used primarily as an ingredient in heat-treating salts and metal fluxes, which are used to create molten baths that harden metal parts, such as specialty steel parts like tools and dies.[24]

Manufacturing Facilities, Production Processes, and Employees. Domestically produced barium chloride shares the same production process up to the final stage, in which anhydrous barium chloride undergoes additional processing. Specifically, CPC produces barium chloride by crushing barite ore (naturally occurring barium sulfate), mixing it with petroleum coke, and reducing it at high temperatures to barium sulfide, which is purified and dissolved in water. The barium sulfide solution is then reacted with hydrochloric acid to remove the byproduct

[20] CPC Postconference Br. at 3.

[21] BassTech Postconference Br. at 2. Chaitanya does not address this issue. *See generally* Chaitanya Postconference Br.

[22] CR/PR at I-8 – I-9.

[23] Paraxylene is a raw material used in the production of terephthalic acid, a precursor to polyethylene terephthalate (PET), which is used in the downstream production of clothing and plastic bottles. Tr. at 14 (Bourdon); Petitions, p. I-5.

[24] CR/PR at I-8 – I-9; Tr. at 15 (Bourdon).

hydrogen sulfide as a gas. When the resulting solution is evaporated, barium chloride crystals remain. The crystalline form is reduced to the anhydrous form by applying intense heat, which drives off the water that is molecularly bonded in the crystals.[25]

Channels of Distribution. Barium chloride in crystalline form accounted for a *** majority of CPC's U.S. shipments of barium chloride during the period of investigation ("POI"),[26] and the *** majority of CPC's U.S. shipments during the POI were to end users.[27]

Interchangeability. As discussed above, the record in these investigations indicates that barium chloride in crystalline and anhydrous forms are used in different end use applications.[28]

Producer and Customer Perceptions. CPC does not perceive barium chloride in crystalline and anhydrous forms to be separate domestic like products.[29]

Price. The record in the preliminary phase of these investigations indicates that domestically produced crystalline barium chloride was generally priced lower than anhydrous barium chloride during most of the POI, although they were priced comparably in two quarters of the POI.[30]

Conclusion. The record in the preliminary phase of these investigations indicates that barium chloride in crystalline and anhydrous forms share the same chemical composition and production processes up to the final production stage, although there are differences in end uses, which affects interchangeability, as well as differences in price. In view of the foregoing, and in the absence of contrary party argument, we define a single domestic like product consisting of barium chloride, coextensive with the scope, for purposes of our preliminary determinations.[31]

[25] CR/PR at I-10 – I-11.
[26] CR/PR at Table III-7.
[27] CR/PR at Table II-1.
[28] CR/PR at I-9.
[29] CPC Postconference Br. at 3.
[30] CR/PR at Tables V-3, V-4, V-5.
[31] This is consistent with previous investigations and reviews regarding barium chloride, in which the Commission defined barium chloride in crystalline and anhydrous forms as a single domestic like products. *See, e.g., Barium Chloride from China*, USITC Pub. 5203 at 5-6.

IV. Domestic Industry

The domestic industry is defined as the domestic "producers as a whole of a domestic like product, or those producers whose collective output of a domestic like product constitutes a major proportion of the total domestic production of the product."[32] In defining the domestic industry, the Commission's general practice has been to include in the industry producers of all domestic production of the like product, whether toll-produced, captively consumed, or sold in the domestic merchant market.

CPC claims that it is the only remaining domestic producer of barium chloride for the commercial market and as such constitutes the domestic industry.[33] BassTech does not challenge the proposed definition of the domestic industry, consisting solely of CPC.[34]

These investigations raise no domestic industry issues at the preliminary phase.[35] In light of our domestic like product definition, we define a single domestic industry consisting of all U.S. producers of barium chloride, namely CPC.

---

[32] 19 U.S.C. § 1677(4)(A).

[33] Petitions at I-2 – I-4.

[34] BassTech Postconference Br. at 2. Chaitanya does not address this issue. *See generally* Chaitanya Postconference Br.

[35] Although CPC ***, it purchased a small volume of subject merchandise from two U.S. importers ***. CR/PR at III-14 & Table III-11. A domestic producer shall be considered to be a related party if it directly or indirectly controls an exporter, importer, or third party. 19 U.S.C. § 1677(4)(B). A domestic producer that does not itself import subject merchandise or does not share a corporate affiliation with an importer may nonetheless be deemed a related party if it controls large volumes of subject imports. *See* SAA at 858. The Commission has found such control to exist, for example, where the domestic producer's purchases were responsible for a predominant proportion of an importer's subject imports and the importer's subject imports were substantial. *See, e.g.*, *Iron Construction Castings from Brazil, Canada, and China*, Inv. Nos. 701-TA-248, 731-TA-262-263, 265 (Fourth Review), USITC Pub. 4655 at 11 (Dec. 2016); *Chlorinated Isocyanurates from China and Spain*, Inv. Nos. 731-TA-1082-1083 (Second Review), USITC Pub. 4646 at 12 (Nov. 2016).

CPC purchased *** pounds of subject imports from importer ***, which accounted for only *** percent of *** total imports of subject merchandise that year. CR/PR at Table III-11; *** Importer Questionnaire Response. Accordingly, CPC was not responsible for a predominant proportion of *** total subject imports of barium chloride that year. Additionally, CPC purchased *** pounds of subject merchandise from importer ***. CR/PR at Table III-11; *** Importer Questionnaire Response. Although CPC's purchases accounted for *** of *** subject imports, the total volume of *** subject imports accounted for only *** percent of total imports of subject merchandise ***. *Calculated from* CR/PR at Tables III-11, IV-2, *** Importer Questionnaire Response. Thus, *** imports were not substantial. Accordingly, based on the current record, CPC does not qualify for exclusion pursuant to the related party provision because it did not control large volumes of subject imports.

V. Negligible Imports

Pursuant to Section 771(24) of the Tariff Act, imports from a subject country of merchandise corresponding to a domestic like product that account for less than 3 percent of all such merchandise imported into the United States during the most recent 12 months for which data are available preceding the filing of the petition shall be deemed negligible.[36]

During the 12-month period preceding filing of the petitions (January 2021 – December 2021), subject imports for both the antidumping and countervailing duty investigations accounted for *** percent of total imports of barium chloride.[37] We therefore find that subject imports are not negligible.

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

A. Legal Standard

In the preliminary phase of antidumping and countervailing duty investigations, the Commission determines whether there is a reasonable indication that an industry in the United States is materially injured or threatened with material injury by reason of the imports under investigation.[38] In making this determination, the Commission must consider the volume of subject imports, their effect on prices for the domestic like product, and their impact on domestic producers of the domestic like product, but only in the context of U.S. production operations.[39] The statute defines "material injury" as "harm which is not inconsequential, immaterial, or unimportant."[40] In assessing whether there is a reasonable indication that the domestic industry is materially injured by reason of subject imports, we consider all relevant economic factors that bear on the state of the industry in the United States.[41] 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."[42]

---

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

[37] CR/PR at Table IV-4.

[38] 19 U.S.C. §§ 1671b(a), 1673b(a).

[39] 19 U.S.C. § 1677(7)(B). The Commission "may consider such other economic factors as are relevant to the determination" but shall "identify each {such} factor ... and explain in full its relevance to the determination." 19 U.S.C. § 1677(7)(B).

[40] 19 U.S.C. § 1677(7)(A).

[41] 19 U.S.C. § 1677(7)(C)(iii).

[42] 19 U.S.C. § 1677(7)(C)(iii).

Although the statute requires the Commission to determine whether there is a reasonable indication that the domestic industry is "materially injured or threatened with material injury by reason of" unfairly traded imports,[43] 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.[44] 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.[45]

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

[43] 19 U.S.C. §§ 1671b(a), 1673b(a).

[44] *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).

[45] The Federal Circuit, in addressing the causation standard of the statute, observed that "{a}s long as its effects are not merely incidental, tangential, or trivial, the foreign product sold at less than fair value meets the causation requirement." *Nippon Steel Corp. v. USITC*, 345 F.3d 1379, 1384 (Fed. Cir. 2003). This was further ratified in *Mittal Steel Point Lisas Ltd. v. United States*, 542 F.3d 867, 873 (Fed. Cir. 2008), where the Federal Circuit, quoting *Gerald Metals, Inc. v. United States*, 132 F.3d 716, 722 (Fed. Cir. 1997), stated that "this court requires evidence in the record 'to show that the harm occurred "by reason of" the LTFV imports, not by reason of a minimal or tangential contribution to material harm caused by LTFV goods.'" *See also Nippon Steel Corp. v. United States*, 458 F.3d 1345, 1357 (Fed. Cir. 2006); *Taiwan Semiconductor Industry Ass'n v. USITC*, 266 F.3d 1339, 1345 (Fed. Cir. 2001).

injury threshold.[46] In performing its examination, however, the Commission need not isolate the injury caused by other factors from injury caused by unfairly traded imports.[47] Nor does the "by reason of" standard require that unfairly traded imports be the "principal" cause of injury or contemplate that injury from unfairly traded imports be weighed against other factors, such as nonsubject imports, which may be contributing to overall injury to an industry.[48] It is clear that the existence of injury caused by other factors does not compel a negative determination.[49]

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

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

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

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

[49] *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.").

imports."[50] 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." [51] The Federal Circuit has examined and affirmed various Commission methodologies and has disavowed "rigid adherence to a specific formula."[52]

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.[53] Congress has delegated this factual finding to the Commission because of the agency's institutional expertise in resolving injury issues.[54]

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

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

[52] *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.").

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

[54] *Mittal Steel*, 542 F.3d at 873; *Nippon Steel Corp*., 458 F.3d at 1350, *citing U.S. Steel Group*, 96 F.3d at 1357; S. Rep. 96-249 at 75 ("The determination of the ITC with respect to causation is ... complex and difficult, and is a matter for the judgment of the ITC.").

B. Conditions of Competition and the Business Cycle

The following conditions of competition inform our analysis of whether there is a reasonable indication of material injury by reason of subject imports.[55]

1. Demand Conditions

Demand for barium chloride derives from the end use applications in which it is used. The largest end-use application is the production of molecular catalyst sieves in oil refining.[56] Other end uses include chemical and water treatment processes related to construction and drilling; the production of certain chemicals, pigments, and paper coatings; and as a base material for the production of ink pigments and other barium intermediate products.[57] Anhydrous barium chloride is used primarily as an ingredient in heat-treating salts and metal fluxes to harden metal specialty steel parts like tools and dies.[58] The parties describe the U.S. barium chloride market as being mature, with the number of end uses decreasing over time.[59] The parties also agree demand for barium chloride in the United States declined during the POI, and agree that the COVID-19 pandemic contributed to the decline, but otherwise disagree as to

[55] We observe that CPC internally consumed barium chloride during the POI. In considering the applicability of the statutory captive production provision, 19 U.S.C. § 1677(7)(C)(iv), we find that the threshold criterion, which requires that "domestic producers internally transfer significant production of the domestic like product for the production of a downstream article and sell significant production of the domestic like product in the merchant market," is met. In the preliminary phase of these investigations, internal consumption accounted for between *** percent and *** percent of the domestic industry's total shipments of barium chloride while commercial shipments accounted for between *** percent and *** percent of the quantity of the domestic industry's total shipments, by quantity, during each year and interim period of the POI. CR/PR at Table III-6. We likewise find that the first statutory criterion, which focuses on whether any of the domestic like product that is transferred internally for further processing is in fact sold on the merchant market, also appears to be satisfied, as the record indicates that CPC did not divert barium chloride that was intended to be internally consumed to the merchant market. CR at III-11 & Table III-8. We find, however, that the second statutory criterion, which requires that the domestic like product be the predominant material input in the production of the downstream article, is not met. The record in the preliminary phase indicates that barium chloride accounts for *** percent of the share of the value/cost, and *** percent of the share of total inputs, of CPC's downstream product. CR/PR at Table III-9. We note that neither CPC nor any respondent argued in this preliminary phase of the investigations that the Commission should apply the captive production provision.

[56] CR/PR at I-8 – I-9, II-5 – II-6.

[57] CR/PR at I-8 – I-9, II-5 – II-6.

[58] CR/PR at I-8 – I-9, II-5 – II-6; Tr. at 14-15 (Bourdon).

[59] CR/PR at II-5; Petitions at I-11; Tr. at 18, 20 (Ingram), 41 (Bourdon), 114 (Chalup).

timing and drivers of demand prior to the pandemic.[60] Apparent U.S. consumption declined from *** pounds in 2018 to *** pounds in 2019 and *** pounds in 2020; it was *** pounds in January-September ("interim") 2020 and *** pounds in interim 2021.[61]

2. Supply Conditions

The U.S. barium chloride market is supplied predominantly by CPC and subject imports, with nonsubject imports accounting for only a small share of the market during the POI.

CPC is the only known commercial producer of barium chloride in the U.S. market and believed to account for *** percent of barium chloride production in the United States in 2020.[62] During the POI, CPC's capacity decreased from *** pounds in 2018 and 2019 to *** pounds in 2020; it was higher in interim 2021 at *** pounds compared to *** pounds in interim 2020.[63] At the beginning of the POI, CPC was the largest source of supply but it steadily lost market share to subject imports. CPC's market share declined from *** percent of apparent U.S. consumption in 2018 to *** percent in 2019 and to *** percent in 2020; its market share was *** percent in interim 2020 and *** percent in interim 2021.[64]

---

[60] CPC Postconference Br. at 7; BassTech Postconference Br. at 7-9. According to CPC, barium chloride use in oil refining is cyclical and, as such, the rise in petroleum prices from 2016 to 2018 contributed to increasing demand for barium chloride, while a drop in petroleum prices in April 2020 contributed to a drop in demand for barium chloride in the second half of 2020, continuing into 2021. CPC further claims that the use of barium chloride in wastewater treatment is affected by general economic conditions. CPC Postconference Br. at 5-7. BassTech disputes CPC's assertions regarding demand drivers. Specifically, it asserts that oil prices "may be a component of demand," but it also claims that there have been periods of high oil prices with low consumption of barium chloride. It also disputes that barium chloride demand is driven by broader macroeconomic trends, claiming that while the U.S. economy experienced growth from 2018 to 2019, demand for barium chloride declined. According to BassTech, demand for barium chloride is driven by its various end uses, particularly ***, but demand for barium chloride is more complicated because barium chloride of different quality or product specifications are used in different end-use sectors. BassTech asserts that certain end uses, such as the production of ink pigments, have moved overseas, while others, such as the production of ChloroAlkali, have replaced barium chloride with "better quality salts." BassTech Postconference Br. at 9-11.

[61] CR/PR at Table C-1. Thus, apparent U.S. consumption declined *** percent from 2018 to 2020 and was *** percent lower in interim 2021 than in interim 2020. *Id.*

[62] CR/PR at III-1; CPC Postconference Br. at 9; Petitions at I-3. CPC asserts that it is the sole remaining commercial producer of barium chloride in the United States and notes that other companies may produce small amounts of barium chloride for their internal consumption. CR/PR at III-1 nn. 2 and 3.

[63] CR/PR at Table III-3.

[64] CR/PR at Table C-1. Accordingly, CPC's market share declined *** percentage points from 2018 to 2020 and was *** percentage points lower in interim 2021 than in interim 2020. *Id.*

Subject imports increased market share and became the principal source of barium chloride in the United States during the POI. Subject import market share was *** percent of apparent U.S. consumption in 2018, *** percent in 2019, and *** percent in 2020; it was *** percent in interim 2020 and *** percent in interim 2021.[65] [66]

In contrast, nonsubject imports accounted for less than *** percent of apparent U.S. consumption throughout the POI. Nonsubject import market share declined from *** percent in 2018 to *** percent in 2019 and to *** percent in 2020; it was *** percent in both interim periods.[67] Sources of nonsubject imports were China, which is subject to an antidumping duty order, Mexico, and the United Kingdom.[68]

3. Substitutability and Other Conditions

Based on the record in the preliminary phase of these investigations, we find that there is at least a moderate-to-high degree of substitutability between the domestic like product and subject imports. Factors contributing to substitutability include similar quality and availability of barium chloride sold from inventory, at least some perception of interchangeability by market participants between domestic and subject sources, and the importance that price plays as a purchase factor.[69] Factors that may limit substitutability include different lead times between the United States and India, and the potential influence of purchaser preferences for diverse supply sources.[70] As discussed above, CPC and subject imports account for the vast majority of the supply options for barium chloride in the U.S. market with nonsubject imports maintaining only a very small presence. CPC asserts that domestic barium chloride and subject imports are "***" interchangeable. Four of six responding importers report that they are

[65] CR/PR at Table C-1. Thus, subject import market share increased *** percentage points from 2018 to 2020 and was *** percentage points higher in interim 2021 than in interim 2020. *Id.*

[66] Most firms, including *** indicated that they did not experience supply constraints since January 1, 2018. CR/PR at II-5. *** reported that an increase in global demand in early 2018 ***. CR/PR at II-5. Importer *** reported supply constraints related to ***, and importer *** reported supply constraints related to ***. CR/PR at II-5.

[67] CR/PR at Table C-1. Accordingly, nonsubject import market share declined *** percentage points from 2018 to 2020 and was *** percentage points higher in interim 2021 than in interim 2020. *Id.*

[68] CR/PR at I-5 – I-6, II-4 – II-5, VII-3 n.8.

[69] CR/PR at II-11. More purchasers that responded to the Commission's questionnaire listed price/cost among the top three most important factors in purchasing decisions than any other purchasing factor. Indeed, all responding purchasers listed price/cost in their top three purchasing factors. Price/cost was the most frequently reported second- and third-most important purchasing factor. CR/PR at Table II-5.

[70] CR/PR at II-11.

"sometimes" interchangeable, with one importer reporting "always" and one importer reporting "frequently." No importer reported that they are "never" interchangeable.[71]

We also find that price is an important factor in purchasing decisions. Price was cited most frequently as among purchasers' top three purchasing factors, although availability/ability to supply was most frequently cited as the top factor.[72] CPC and most importers reported that differences other than price are "***" important.[73]

The parties describe the U.S. barium chloride market as concentrated, consisting of a small number of purchasers,[74] among which *** accounted for the largest volume of purchases of both the domestic like product and subject imports during the POI.[75]

Barium chloride is primarily sold from inventory.[76] CPC reported that *** percent of its barium chloride is sold from inventory, with an average lead time of *** days.[77] Importers reported selling *** percent of their barium chloride from U.S. inventories, with an average lead time of *** days; they also reported selling *** percent from foreign producers' inventories with an average lead time of *** days and *** percent produced to order, with an average lead time of *** days.[78]

Domestic barium chloride is produced from three primary raw materials: barite ore, petroleum coke, and hydrochloric acid.[79] During the POI, CPC's raw material costs as a share of

[71] CR/PR at Tables II-6, II-7.

[72] CR/PR at Table II-5.

[73] CP/PR at Tables II-8, II-9. Only one out of five responding importers reported that there were always or frequently differences other than price between U.S.-produced barium chloride and subject imports. Respondents maintain that *** was instrumental in introducing subject imports to the U.S. market and argue that there are non-price differences between subject imports and the domestic like product such as ***. BassTech Postconference Br. at 3-7; Chaitanya Postconference Br. at 10-14. In its explanation of why it purchases subject imports instead of the domestic like product, however, *** states that it primarily purchases subject imports ***. CR/PR at Table V-9. We will explore the importance of any non-price differences between subject imports and the domestic like product further in any final phase of these investigations.

[74] Tr. at 20 (Ingram), 112 (Gupta).

[75] CR/PR at Table V-7.

[76] CR/PR at II-12.

[77] CR/PR at II-12.

[78] CR/PR at II-12 – II-13.

[79] Domestic barium chloride is produced by crushing barite ore, mixing it with petroleum coke, and reacting it with hydrochloric acid. The resulting solution is evaporated, and barium chloride in crystalline form remains. To form anhydrous barium chloride, the crystalline form is reduced by applying intense heat, which drives off the water that is molecularly bonded in the crystals. CR/PR at I-10 – I-11.

its total cost of goods sold ("COGS") increased from *** percent in 2018 to *** percent in 2020 and was *** percent in January-September 2021.[80]

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."[81]

During the POI, the volume of subject imports decreased overall, initially decreasing from *** pounds in 2018 to *** pounds in 2019 and then increasing to *** pounds in 2020; the volume of subject imports was lower at *** pounds in interim 2021 than in interim 2020 at *** pounds.[82] Importers' U.S. shipments of subject imports also declined but to a lesser degree. They were *** pounds in 2018, *** pounds in 2019, and *** pounds in 2020; U.S. shipments of subject imports were *** pounds in interim 2020 and in interim 2021.[83] As apparent U.S. consumption declined, subject imports gained market share.[84] Subject import market share increased from *** percent of apparent U.S. consumption in 2018 to *** percent in 2019 and to *** percent in 2020; it was *** percent in interim 2020 and *** percent in interim 2021.[85] Relative to U.S. production, the volume of subject imports increased from *** percent in 2018 to *** percent in 2019 and to *** percent in 2020; it was higher in interim 2021 at *** percent than in in interim 2020 at *** percent.[86]

Based on the foregoing, we find that the volume of subject imports was significant in absolute terms as well as relative to U.S. consumption and production. We further find that the increase in volume relative to U.S. consumption and production was also significant.

---

[80] CR/PR at V-1.

[81] 19 U.S.C. § 1677(7)(C)(i).

[82] CR/PR at Table IV-2.

[83] CR/PR at Table IV-5.

[84] As reviewed above, apparent U.S. consumption declined from *** pounds in 2018 to *** pounds in 2019 and *** pounds in 2020; it was *** pounds in interim 2020 and *** pounds in interim 2021. CR/PR at Table C-1.

[85] CR/PR at Table C-1. CR/PR at Table C-1. Thus, subject import market share increased *** percentage points from 2018 to 2020 and was *** percentage points higher in interim 2021 than in interim 2020. *Id.*

[86] CR/PR at Table IV-2. Accordingly, relative to U.S. production, the volume of subject imports increased *** percentage points from 2018 to 2020 and was *** percentage points higher in interim 2021 than in interim 2020. *Id.*

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.[87]

As discussed above, we find there to be at least a moderate-to-high degree of substitutability between the domestic like product and subject imports and that price is an important purchasing factor. The Commission requested U.S. producers and importers to provide quarterly data for the total quantity and f.o.b. value of two barium chloride products shipped to unrelated U.S. customers during January 2018-September 2021.[88] CPC and nine importers provided usable pricing data for sales of the requested products, although not all firms reported pricing for all products for all quarters.[89] Pricing data reported by these firms accounted for approximately *** percent of U.S. producers' U.S. shipments of barium chloride and *** percent of U.S. shipments of subject imports from India in 2020.[90] Subject imports undersold the domestic like product in all 22 quarterly comparisons, involving *** pounds of imported barium chloride, at margins ranging from 9.0 to 62.5 percent.[91]

We also considered purchasers' responses to the Commission's lost sales and lost revenue survey. Of the seven responding purchasers, five reported purchasing subject imports instead of the domestic like product and all five of these purchasers reported that subject imports were priced lower than the domestic like product.[92] Four out of these five purchasers

---

[87] 19 U.S.C. § 1677(7)(C)(ii).

[88] CR/PR at V-7. The pricing data were for the following products: Product 1.--Crystalline barium chloride and Product 2.--Anhydrous barium chloride. CR/PR at V-7.

[89] CR/PR at V-7.

[90] CR/PR at V-7 – V-8.

[91] CR/PR at Tables V-3, V-4, V-6. BassTech argues that these data are distorted by the mix of products and customers. BassTech Postconference Br. at 16-18. We note the high coverage for the pricing products and that other record evidence corroborates that subject imports were priced lower than the domestic like product, as discussed below. BassTech also challenges CPC's reporting that ***. BassTech Postconference Br. at 18-19. CPC responded to Staff's inquiry regarding this issue: ***. EDIS Doc. No. 763648.

[92] CR/PR at Table V-9.

also reported that they purchased subject imports instead of the domestic like product because of lower prices. In all, the total volume of lost sales reported by these purchasers was 6.8 million pounds,[93] which was equivalent to more than *** percent, of total U.S. shipments of subject imports during the POI.[94]

Thus, based on the record in the preliminary phase of these investigations, we find the underselling of the domestic like product by subject imports to be significant. This underselling caused the domestic industry to lose sales and market share to subject imports. Specifically, the domestic industry lost *** percentage points of market share to subject imports from 2018 to 2020. The domestic industry's market share was lower at *** percent of apparent U.S. consumption in interim 2021 compared to *** percent in interim 2020, while the market share of subject imports was higher at *** percent in interim 2021 compared to *** percent in interim 2020.[95]

We also considered price trends. In general, domestic prices increased during January 2018-September 2021, while import prices fluctuated but were slightly higher in the third quarter of 2021 than the first quarter of 2018.[96] Prices for the domestic like product increased by *** percent for product 1 and *** percent for product 2 between the first quarter of 2018 and the third quarter of 2021.[97] Subject import prices for product 1 were *** percent higher in the third quarter of 2021 than the first quarter of 2018. There were too few instances of quarterly price data for subject imports of product 2 to analyze trends; however, we note that the price of subject imports for product 2 was *** percent higher in the third quarter of 2021 than the second quarter of 2018 (the first quarter in which import prices for product 2 were reported).[98]

We also considered whether subject imports prevented price increases for the domestic like product to a significant degree. The domestic industry's unit net sales value on a per-pound basis was $*** in 2018, $*** in 2019, and $*** in 2020; it was $*** in interim 2020 and

[93] CR/PR at Table V-9. *** reported that it purchased subject imports instead of the domestic like product and that subject imports were priced lower than the domestic like product, but it reported that its purchase of subject imports was not based on price; rather, ***. CR/PR at Table V-9.

In addition, *** reported purchasing subject imports instead of the domestic like product based on price and confirmed *** pounds of lost sales, although it also reported that ***. CR/PR at V-18.

[94] *Calculated from* CR/PR at Tables V-9, C-1.

[95] CR/PR at Table C-1.

[96] CR/PR at V-12 & Tables V-3, V-4, V-5.

[97] CR/PR at V-12 & Tables V-3, V-4, V-5.

[98] CR/PR at V-12 & Tables V-3, V-4, V-5.

$*** in interim 2021.[99] Its unit COGS on a per-pound basis was $*** in 2018, $*** in 2019, and $*** in 2020; it was $*** in interim 2020 and $*** in interim 2021.[100] The domestic industry's ratio of COGS to net sales decreased from *** percent in 2018 to *** percent in 2019 and increased to *** percent in 2020; it was *** percent in interim 2020 and *** percent in interim 2021.[101] From 2018 to 2020, CPC's unit raw material costs and unit direct labor costs increased overall, but these increases were generally offset by a decline in unit other factory costs. In interim 2021, unit other factory costs were considerably higher compared to interim 2020, while unit raw material and direct labor costs were both lower.[102] As the domestic industry's ratio of COGS to net sales reached its highest level in interim 2021, subject import market share also reached its highest level of the POI in interim 2021.[103] We also observe that CPC reported that ***.[104]

We recognize that demand for barium chloride declined substantially during the POI, with apparent consumption falling 32.1 percent between 2018 and 2020, including a 20 percent decline between 2019 and 2020 alone, and it was 26.8 percent lower in interim 2021 compared to interim 2020, which may have impacted the domestic industry's ability to increase prices to sufficiently cover its rising costs.[105] Moreover, the domestic industry's higher ratio of COGS to net sales in interim 2021 compared to interim 2020 was driven primarily by fixed costs being spread over a smaller production volume, leading to a cost/price squeeze.[106] Although this occurred as demand declined and CPC's net sales declined, it also occurred as subject imports continued to gain market share. In any final phase of these investigations, we will explore the extent to which subject imports may be suppressing prices for the domestic like product.

Thus, based on the record in the preliminary phase of these investigations, we find that subject imports, which significantly undersold the domestic like product and gained market share at the expense of the domestic industry, had significant price effects.

---

[99] CR/PR at Table VI-1.

[100] CR/PR at Table VI-1.

[101] CR/PR at Tables VI-1, C-1.

[102] CR/PR at Table VI-1. Unit raw material costs were $*** in 2018, $*** in 2019, and $*** in 2020; they were $*** in interim 2020 and $*** in interim 2021. Unit direct labor costs were $*** in 2018, $*** in 2019, and $*** in 2020; they were $*** in interim 2020 and $*** in interim 2021. Unit other factory costs were $*** in 2018, $*** in 2019, and $*** in 2020; they were $*** in interim 2020 and $*** in interim 2021. CR/PR at Table VI-1.

[103] CR/PR at Table C-1.

[104] CPC Postconference Br. at 12-13; Petitions at Exhibit I-12, Attachments A, D.

[105] CR/PR at Table C-1.

[106] CR/PR at Tables VI-1, C-1.

E. Impact of the Subject Imports[107]

Section 771(7)(C)(iii) of the Tariff Act provides that the Commission, in examining the impact of the subject imports on the domestic industry, "shall evaluate all relevant economic factors which have a bearing on the state of the industry." These factors include output, sales, inventories, capacity utilization, market share, employment, wages, productivity, gross profits, net profits, operating profits, cash flow, return on investment, return on capital, ability to raise capital, ability to service debt, research and development, and factors affecting domestic prices. No single factor is dispositive and all relevant factors are considered "within the context of the business cycle and conditions of competition that are distinctive to the affected industry."[108]

During the POI, most of the domestic industry's performance indicators declined. Its capacity decreased from *** pounds in 2018 and 2019 to *** pounds in 2020; it was *** pounds in interim 2020 and *** pounds in interim 2021.[109] The decline in domestic production was ***. Production decreased from *** pounds in 2018 to *** pounds in 2019 and to *** pounds in 2020; it was lower in interim 2021 at *** pounds than in interim 2020 at *** pounds.[110] As a result, the domestic industry's capacity utilization declined from *** percent in 2018 to *** percent in 2019 and to *** percent in 2020; it was lower in interim 2021 at *** percent than in interim 2020 at *** percent.[111] CPC's U.S. shipments decreased from *** pounds in 2018 to *** pounds in 2019 and to *** pounds in 2020; they were lower in interim 2021 at *** pounds than in interim 2020 at *** pounds.[112] Although apparent U.S. consumption declined during this time, as discussed above, subject imports took market share from the domestic industry in the declining market. CPC's market share declined from *** percent of apparent U.S. consumption in 2018 to *** percent in 2019 and to *** percent in

[107] In its notice initiating the antidumping duty investigation, Commerce initiated the investigations based on an estimated dumping margin of 233.34 percent. *Barium Chloride From India: Initiation of Antidumping Duty Investigation*, 87 Fed. Reg. 7100 (Feb. 8, 2022).

[108] 19 U.S.C. § 1677(7)(C)(iii). This provision was amended by the Trade Preferences Extension Act of 2015 ("TPEA"), Pub. L. 114-27.

[109] CR/PR at Table C-1.

[110] CR/PR at Table C-1. Thus, the domestic industry's production declined *** percent from 2018 to 2020 and was *** percent lower in interim 2021 than in interim 2020. *Id.*

[111] CR/PR at Table C-1. Accordingly, the domestic industry's capacity utilization declined *** percentage points from 2018 to 2020 and was *** percentage points lower in interim 2021 than in interim 2020. *Id.*

[112] CR/PR at Table C-1. Thus, CPC's U.S. shipments declined *** percent from 2018 to 2020 and were *** percent lower in interim 2021 than in interim 2020. *Id.*

2020; it was lower in interim 2021 at *** percent than in interim 2020 at *** percent.[113] CPC's ending inventories increased overall during the POI, initially decreasing from *** pounds in 2018 to *** pounds in 2019 before increasing to *** pounds in 2020; ending inventories were *** pounds in interim 2020 and *** pounds in interim 2021.[114]

Most of the domestic industry's employment indicators also declined. The number of production related workers ("PRWs") decreased from *** in 2018 to *** in 2019 and *** in 2020; the number of PRWs was *** in both interim periods. Hours worked also declined from *** in 2018 to *** in 2019 and to *** in 2020; hours worked were lower in interim 2021 at *** than in interim 2020 at ***.[115] Wages paid were $*** in 2018, $*** in 2019, and $*** in 2020; they were lower in interim 2021 at $*** than in interim 2020 at $***.[116] Productivity was *** pounds per hour in 2018, *** pounds per hour in 2019, and *** pounds per hour in 2020; productivity was *** pounds per hour in interim 2020 and *** pounds per hour in interim 2021.[117]

CPC's net sales by value declined throughout the POI, decreasing from $*** in 2018 to $*** in 2019 and $*** in 2020; they were lower in interim 2021 at $*** than in interim 2020 at $***.[118] Its gross profits initially increased from $*** in 2018 to $*** in 2019 before decreasing to $*** in 2020; gross profits were lower in interim 2021 at $*** than in interim 2020 at $***.[119] CPC's operating income was $*** in 2018, $*** in 2019, and $*** in 2020; it was lower in interim 2021 at $*** than in interim 2020 at $***.[120] The ratio of operating income to net sales was *** percent in 2018, *** percent in 2019, and *** percent in 2020; it was lower in interim 2021 at *** percent than in interim 2020 at *** percent.[121] Net income was $*** in 2018, $*** in 2019, and $*** in 2020; it was $*** in interim 2020 and $*** in interim 2021.[122] The ratio of net income to net sales was *** percent in 2018, *** percent in

[113] CR/PR at Table C-1. Accordingly, CPC's market share declined *** percentage points from 2018 to 2020 and was *** percentage points lower in interim 2021 than in interim 2020. *Id.*

[114] CR/PR at Table C-1.

[115] CR/PR at Table C-1. CPC explained some differences its interim 2021 data, noting ***. CR/PR at III-15.

[116] CR/PR at Table C-1.

[117] CR/PR at Table C-1.

[118] CR/PR at Table C-1. Thus, CPC's net sales declined *** percent from 2018 to 2020 and were *** percent lower in interim 2021 than in interim 2020. *Id.*

[119] CR/PR at Table C-1.

[120] CR/PR at Table C-1.

[121] CR/PR at Table C-1.

[122] CR/PR at Table C-1. In general, the higher level of net income reflects ***. In January-September 2021, the *** in the level of net income primarily reflects a ***. ***. CR/PR at VI-9 & n.25.

2019, and *** percent in 2020; it was *** percent in interim 2020 and *** percent in interim 2021.[123] CPC's capital expenditures were $*** in 2018, $*** in 2019, and $*** in 2020; they were $*** in interim 2020 and $*** in interim 2021.[124] It did not report research and development ("R&D") costs during the POI.[125]

Based on the record in the preliminary phase of these investigations, we find that the significant volume of subject imports, for which price is an important purchasing factor and which are at least moderately-to-highly substitutable with the domestic like product, universally undersold the domestic like product and took sales and market share directly from the domestic industry, during a period of declining demand. As a result, the domestic industry had fewer sales and less revenue than it otherwise would have. Consequently, for purposes of these preliminary phase determinations, we find that subject imports had a significant impact on the domestic industry.[126]

We have also considered other factors so as to ensure that we are not attributing injury from other factors to subject imports. As discussed above, nonsubject imports accounted for less than *** percent of the U.S. market throughout the POI and also lost market share to subject imports. Therefore, nonsubject imports cannot explain the injury to the domestic industry.

In addition, we acknowledge that there was declining demand for barium chloride, which both predated and was related to the COVID-19 pandemic. We find, however, that declining demand does not fully explain the injury to the domestic industry, given that subject imports increased their market share at the direct expense of the domestic industry in the

[123] CR/PR at Table C-1.

[124] CR/PR at Table C-1.

[125] CR/PR at Table C-1.

[126] Citing the Commission's five-year reviews on the orders regarding barium chloride from China, Chaitanya argues that the fact that the Commission noted that imports of barium chloride from India were higher priced and continued to maintain a significant presence in the U.S. market indicates that subject imports from India are not causing injury to the domestic industry. Chaitanya Postconference Br. at 15-16. We note that each investigation is *sui generis*. Moreover, the fact that the Commission considered imports of barium chloride from India in the context of its non-attribution analyses in the reviews regarding barium chloride from China, finding, for example, that imports of barium chloride from India would not likely prevent imports of barium chloride from China from re-entering the U.S. market in significant quantities upon revocation of the order, does not indicate or suggest that imports of barium chloride from India are necessarily not injurious to the domestic industry. *Barium Chloride from China*, Inv. No. 731-TA-149 (Fifth Review), USITC Pub. 5203 (June 2021) at 22. Nor does it preclude our determination in the preliminary phase of these investigations that there is a reasonable indication that subject imports of barium chloride are a cause of material injury to the domestic industry.

declining market, as discussed above. Similarly, we observe that several of the domestic industry's other trade indicators, including production and U.S. shipments, declined to a greater degree than apparent U.S. consumption.[127]

Respondents further argue that the domestic industry's declines in production, shipments, and employment, were due to ***[128] as well as declining demand, rather than subject imports.[129] As with declines in demand, any reduction in the domestic industry's export shipments do not explain the U.S. market share loss to subject imports. In any final phase of these investigations, we will further examine CPC's export shipments and any role they may have played in CPC's financial posture.

As discussed above, *** was the largest purchaser during the POI and reported that its purchases of subject imports were not based on price, but rather part of its efforts to diversify its suppliers in a market with limited options, given that CPC and subject imports effectively were the only sources of barium chloride during the POI.[130] We note, however, that *** was not the only purchaser of barium chloride in the U.S. market and other purchasers confirmed that the domestic industry lost sales to lower-priced subject imports, as discussed above.

---

[127] CR/PR at Table C-1. Apparent U.S. consumption declined by *** percent from 2018 to 2020 and was *** percent lower in interim 2021 compared to interim 2020. CPC's production declined by *** percent from 2018 to 2020 and was *** percent lower in interim 2021 compared to interim 2020. U.S. shipments, by quantity, declined by *** percent from 2018 to 2020 and were *** percent lower in interim 2021 compared to interim 2020. *Id.*

[128] CPC's export shipments declined from *** pounds in 2018 to *** pounds in 2019; it reported *** in 2020, although it reported *** pounds of export shipments in interim 2021. CR/PR at Table C-1.

[129] BassTech Postconference Br. at 12, 20-21; Chaitanya Postconference Br. at 21, 29-32. Chaitanya also argues that the decline in demand in the U.S. market and declines in CPC's exports, along with the purported high-cost structure of the domestic industry, were greater causes of injury than subject imports. Chaitanya Postconference Br. at 21, 29-32. We note that, in performing our non-attribution analysis, however, the Commission need not isolate the injury caused by other factors from injury caused by unfairly traded imports. SAA at 851-52 ("{T}he Commission need not isolate the injury caused by other factors from injury caused by unfair imports."); *Taiwan Semiconductor Industry Ass'n*, 266 F.3d at 1345 ("{T}he Commission need not isolate the injury caused by other factors from injury caused by unfair imports. . . . Rather, the Commission must examine other factors to ensure that it is not attributing injury from other sources to the subject imports." (emphasis in original)). Nor does the "by reason of" standard require that unfairly traded imports be the "principal" cause of injury or contemplate that injury from unfairly traded imports be weighed against other factors, such as nonsubject imports, which may be contributing to overall injury to an industry. S. Rep. 96-249 at 74-75; H.R. Rep. 96-317 at 47; *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").

[130] CR/PR at V-18; *see also* BassTech Postconference Br. at 3-4.

VII. Conclusion

For the reasons stated above, in the preliminary phase of these investigations, we determine that there is a reasonable indication that an industry in the United States is materially injured by reason of subject imports of barium chloride from India that are allegedly subsidized by the government of India and sold in the United States at less than fair value.

Part I: Introduction

Background

These investigations result from petitions filed on January 12, 2022 with the U.S. Department of Commerce ("Commerce") and the U.S. International Trade Commission ("USITC" or "Commission") by Chemical Products Corp. ("CPC" or "Petitioner"), Cartersville, Georgia, 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 barium chloride from India.[1] Table I-1 presents information relating to the background of these investigations.[2] [3]

Table I-1
Barium chloride: Information relating to the background and schedule of this proceeding

Effective date	Action
January 12, 2022	Petitions filed with Commerce and the Commission; institution of Commission investigations (87 FR 2901, January 19, 2022)
February 1, 2022	Commerce's notice of initiation of countervailing duty order (87 FR 7094, February 8, 2022)
February 1, 2022	Commerce's notice of initiation of antidumping duty order (87 FR 7100, February 8, 2022)
February 2, 2022	Commission's conference
February 25, 2022	Commission's vote
February 28, 2022	Commission's determinations
March 7, 2022	Commission's views

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

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

[3] A list of witnesses appearing at the Commission's conference is presented in app. B of this report.

Statutory criteria

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

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

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

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

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

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

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

Organization of report

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

Market summary

Barium chloride is an inorganic chemical compound that has applications in the laboratory and industry. Barium chloride is produced and sold in two form types. In its crystalline form ($BaCl_2 \bullet 2H_2O$), barium chloride is primarily used as an intermediate in the production of molecular catalyst sieves; in its anhydrous form ($BaCl_2$), barium chloride is primarily used as an ingredient in heat-treating salts and metal fluxes.[6] The leading U.S. producer of barium chloride is CPC, while the leading producer of barium chloride in India is ***. The leading U.S. importer of barium chloride from India is ***, while the leading importer of product from nonsubject countries (primarily China) is ***. The leading U.S. purchaser of barium chloride is ***.

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

[6] Petitions, p. I-5. See "The product" section of this report for more information on barium chloride and its different forms.

Apparent U.S. consumption of barium chloride totaled approximately *** pounds ($***) in 2020. U.S. producers' U.S. shipments of barium chloride, reported by the sole responding domestic producer CPC, totaled *** pounds ($***) in 2020 and accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value. U.S. imports from the subject source totaled *** pounds ($***) in 2020 and accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value. U.S. imports from nonsubject sources totaled *** pounds ($***) in 2020 and accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value.[7]

Summary data and data sources

A summary of data collected in these investigations is presented in appendix C, table C-1 and table C-2. Except as noted, U.S. industry data are based on the questionnaire response of one firm, CPC, which accounted for an estimated *** percent of U.S. production of barium chloride during 2020. U.S. import data are based on the questionnaire responses of 11 firms which are believed to have accounted for *** imports of barium chloride from all sources during 2020. Foreign producer/exporter data are based on the questionnaire response of two firms which are believed to have accounted for *** percent of U.S. imports of barium chloride from India during 2020. Seven firms submitted a response to the Commission's lost sales lost revenue survey, and the largest purchaser, ***, accounted for *** percent of purchasers' reported purchases and imports in 2020 and *** percent during January 2018–September 2020.[8]

[7] Figures may not add up due to rounding errors.
[8] For additional information on U.S. purchasers, please see Part V, "Last sale and lost revenue."

Previous and related investigations

Barium chloride or similar merchandise has been the subject of prior antidumping duty investigations in the United States. Table I-2 presents data on previous and related title VII investigations and a discussion follows.

Table I-2
Barium chloride or similar merchandise: Previous and related title VII investigations and status of the orders

Instituted	Investigation Number	Subject Country	Product Scope	Commission Determination	Current Status of Order
1980	731-TA-31	Federal Republic of Germany	Barium carbonate	Affirmative	Commerce revocation of order effective 01/01/2000 (First Review).
1983	731-TA-149	China	Barium chloride	Affirmative	Commerce continuation of order effective 06/11/2021 (Fifth Review).
1983	731-TA-150	China	Barium carbonate	--	Commission preliminary affirmative; Commerce final negative. Investigation terminated.
2002	731-TA-1020	China	Barium carbonate	Affirmative	Commerce continuation of order effective 08/20/2020 (Third Review).

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

On October 25, 1983, CPC filed an antidumping duty petition on barium chloride from China. The Commission made a final affirmative determination,[9] and Commerce subsequently issued an antidumping duty order.[10] Effective June 11, 2021, Commerce issued a continuation of the antidumping duty order on barium chloride from China following a fifth five-year sunset review.[11] [12]

[9] Barium Chloride from the People's Republic of China, Investigation No. 731-TA-149 (Final), USITC Pub 1584, October 1984. 49 FR 40675, October 17, 1984 (Commission's final determination notice).

[10] 49 FR 40635, October 17, 1984.

[11] Barium Chloride from China, Investigation No. 731-TA-149 (Fifth Review), USITC Pub. 5203, June 2021. 86 FR 31280, June 11, 2021 (Commerce's continuation order).

[12] The Commission's third five-year sunset review on barium chloride from China was a full review. Barium Chloride from China, Investigation No. 731-TA-149 (Third Review), USITC Publication 4157, June 2010. All the other reviews on barium chloride from China have been expedited.

The Commission has also conducted investigations on a related product, barium carbonate.[13] On September 9, 1980, CPC, along with FMC Corp. and the Sherwin-Williams Co., filed an antidumping duty petition on barium carbonate from the Republic of Germany. The Commission made a final affirmative determination,[14] and Commerce subsequently issued an antidumping duty order.[15] Effective January 1, 2000, Commerce revoked the antidumping duty order as no domestic interested party provided a response to the notice of initiation during the first five-year sunset review.[16]

On October 25, 1983, CPC filed an antidumping duty petition on imports of barium carbonate from China. The Commission made a preliminary affirmative determination;[17] however, Commerce made a final negative determination and the investigation was terminated.[18]

On September 30, 2002, CPC filed another antidumping duty petition on imports of barium carbonate from China. The Commission made a final affirmative determination,[19] and Commerce subsequently issued an antidumping duty order.[20] Effective August 20, 2020, Commerce issued a continuation of the antidumping duty order on barium carbonate from China following a third five-year sunset review.[21]

---

[13] Barium carbonate ($BaCO_3$) is a heavy, odorless, white-to-cream-colored chemical produced from barite ore. Barium carbonate is sold in granular, powder, or high-purity form into two major end uses: specialty glass and brick, tile, and other ceramic goods. Demand for this specialty glass, containing reflective beads for road signage and markers, roughly tracks transportation infrastructure spending. Demand for barium carbonate for clay and ceramic goods roughly tracks housing construction. High-purity barium carbonate is used to produce ceramic capacitors and fuses. Barium Carbonate from China, Investigation No. 731-TA-1020 (Third Review), USITC Publication 5098, August 2020, pp. I-5–I-6.

[14] Precipitated Barium Carbonate from the Federal Republic of Germany, Investigation No. 731-TA-31 (Final), USITC Pub. 1154, June 1981. 46 FR 32698, June 24, 1981 (Commission's final determination notice).

[15] 46 FR 32864, June 25, 1981.

[16] 63 FR 64677, November 23, 1998.

[17] Barium Chloride and Barium Carbonate (Precipitated) from the People's Republic of China, Investigation Nos. 731-TA-149 and 150 (Preliminary), USITC Pub. 1458, December 1983. 48 FR 56449, December 21, 1983 (Commission's preliminary determination notice).

[18] 49 FR 33913, August 27, 1984.

[19] Barium Carbonate from China, Investigation No. 731-TA-1020 (Final), USITC Pub. 3631, September 2003. 68 FR 55653, September 26, 2003 (Commission's final determination notice).

[20] 68 FR 56619, October 1, 2003.

[21] Barium Carbonate from China, Investigation No. 731-TA-1020 (Third Review), USITC Pub. 5098, August 2020. 85 FR 51409, August 20, 2020 (Commerce's continuation order).

Nature and extent of alleged subsidies and sales at LTFV

Alleged subsidies

On February 8, 2022, Commerce published a notice in the Federal Register of the initiation of its countervailing duty investigation on barium chloride from India.[22]

Alleged sales at LTFV

On February 8, 2022, Commerce published a notice in the Federal Register of the initiation of its antidumping duty investigation on barium chloride from India.[23] Commerce's estimated dumping margin for barium chloride from India is 233.34 percent.[24]

The subject merchandise

Commerce's scope

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

> *The merchandise covered by this investigation is barium chloride, a chemical compound having the formulas $BaCl_2$ or $BaCl_2$-$2H_2O$, currently classifiable under subheading 2827.39.4500 of the Harmonized Tariff Schedule of the United States (HTSUS). Although the HTSUS subheading is provided for convenience and customs purposes, the written description of the scope of this investigation is dispositive.*[25]

[22] For further information on the alleged subsidy programs see Commerce's notice of initiation and related Countervailing Duty Initiation Checklist. 87 FR 7094, February 8, 2022.

[23] 87 FR 7100, February 8, 2022.

[24] 87 FR 7100, February 8, 2022.

[25] 87 FR 7094, February 8, 2022; 87 FR 7100, February 8, 2022.

Tariff treatment

Based upon the scope set forth by Commerce, information available to the Commission indicates that the merchandise subject to these investigations are imported under statistical reporting number 2827.39.4500 of the Harmonized Tariff Schedule of the United States ("HTSUS" or "HTS"). The 2022 general rate of duty is 4.2 percent *ad valorem* for HTS subheading 2827.39.45. Decisions on the tariff classification and treatment of imported goods are within the authority of U.S. Customs and Border Protection.

The product

Description and applications

Barium chloride is a solid chemical compound having the formula $BaCl_2 \bullet 2H_2O$ (if in crystalline form)[26] or $BaCl_2$ (if in powdered, or anhydrous, form).[27] [28] The bulk of barium chloride is sold in the crystalline form, which is used primarily in the petroleum industry.[29] The market for barium chloride is mature, without any significant new applications.[30] While all parties agree that producers ensure that customers' unique specifications are met, the parties disagree on whether these differences constitute multiple, unique grades of barium chloride.[31]

[26] The crystalline form of barium chloride is sometimes referred to as barium chloride dihydrate. Conference transcript, p. 55 (Bourdon).

[27] Petitions, p. I-5.

[28] Barium chloride is considered a hazardous material and must be handled during transport as such. Conference transcript, p, 118 (Chalup).

[29] Petitioner estimates that anhydrous sales represent less than 5 percent of the barium chloride market. Conference transcript, pp. 18 and 39 (Bourdon and Ingram).

[30] Conference transcript, pp. 20 (Ingram) and 114 (Chalup).

[31] Petitioner states that only one grade of barium chloride is produced, all via the same process. Petitioner asserts that customers' specifications are confirmed to be met before transport, but any differences in the product are a result of quality control, not grade. Conference transcript, p. 62 (Bourdon); Petitioner's postconference brief, pp. 4-5. Respondent Chaitanya states that it has three grades of crystalline barium chloride (technical grade, catalyst grade, and electronic grade) for different applications/customers. Respondent Chaitanya also states that these various grades result from process differences rather than raw material differences. Respondent Chaitanya's postconference brief, pp. 10-12, 14, 37, and exh. II, p. 45. Conference transcript, pp. 81 and 83 (Gupta). Respondent BassTech stated that both the feedstock and the process can be adjusted to meet a customer's specifications. Conference transcript, pp. 123-124 (Chalup). GFS communicated that ***. Correspondence with ***, January 24, 2022, EDIS #761625.

Crystalline barium chloride ($BaCl_2 \bullet 2H_2O$) is used primarily as an intermediate in the production of molecular catalyst sieves, which in turn are used in oil refinery complexes to separate out industrially useful paraxylene molecules from other mixed xylenes.[32] Paraxylene is a raw material used in the production of terephthalic acid, a precursor to the polyethylene terephthalate (PET) that is used to make clothing and plastic bottles.[33] Crystalline barium chloride also serves as a cleansing agent in the removal of soluble sulfates in certain chemical and water treatment processes; as a cleansing ingredient in lubricating oil additives; and as a raw material in the production of certain chemicals, pigments, and paper coatings.[34] The crystalline form of barium chloride is also used as a base material for production of ink pigments and other barium intermediate products such as barium titanate and barium metaborate.[35]

The anhydrous form of barium chloride ($BaCl_2$) is used primarily as an ingredient in heat-treating salts and metal fluxes—molten baths used to harden metal parts, usually small specialty steel parts such as tools and dies.[36] The anhydrous form is used in these applications where there cannot be any moisture because of the high temperatures involved.[37]

[32] Petitions, p. I-5. Conference transcript, p. 14 (Bourdon).

[33] Petitions, p. I-5. Conference transcript, p. 14 (Bourdon).

[34] Petitions, p. I-5. Conference transcript, p. 15 (Bourdon). There was some disagreement over how pervasive the use of barium chloride is in water treatment applications and, therefore, the impact of the recently passed infrastructure bill. Compare Conference transcript, p. 40 (Waite), p. 56 (Bourdon), and Petitioner's postconference brief, p. 6, with Conference transcript, p. 118 (Chalup).

[35] Petitions, p. I-6. Conference transcript, p. 15 (Bourdon).

[36] Petitions, p. I-5. Conference transcript, p. 15 (Bourdon).

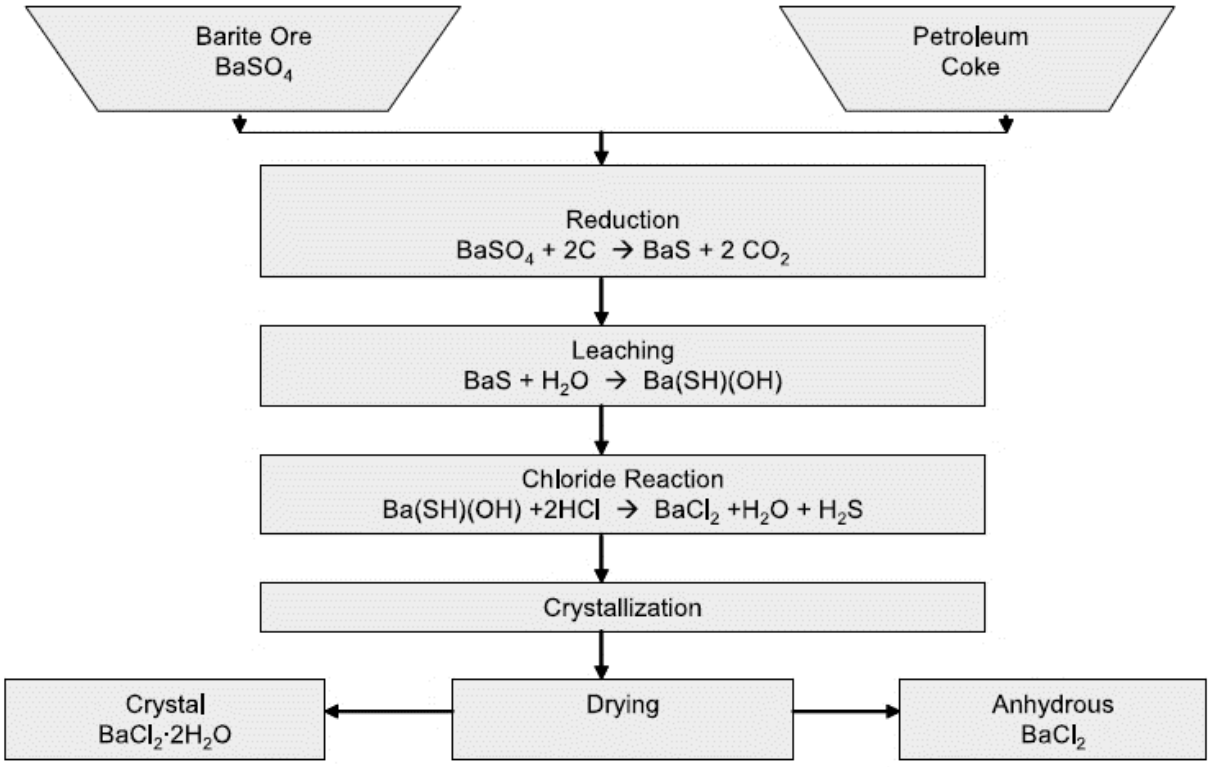
[37] Conference transcript, p. 38 (Bourdon).

Manufacturing processes

CPC produces barium chloride by crushing barite ore (naturally occurring barium sulfate), mixing it with petroleum coke, and reducing it at high temperatures to barium sulfide, which is purified and dissolved in water.[38] The barium sulfide solution is then reacted with hydrochloric acid to remove the byproduct hydrogen sulfide as a gas.[39] When the resulting solution is evaporated, barium chloride crystals remain.[40] The crystalline form is reduced to the anhydrous form by applying intense heat, which drives off the water that is molecularly bonded in the crystals (see figure I-1).[41] Respondent Chaitanya claims that there are two known processes for industrial scale manufacturing of barium chloride: the one described above and another that involves ***.[42]

[38] Petitions, p. I-6. Conference transcript, p. 15 (Bourdon).
[39] Petitions, p. I-6. Conference transcript, p. 15 (Bourdon).
[40] Petitions, p. I-6. Conference transcript, pp. 15-16 (Bourdon).
[41] Petitions, p. I-6.
[42] Respondent Chaitanya's postconference brief, p. 14. Petitioner stated during the Conference that there was only the one production process. Conference transcript, p. 58 (Bourdon). Respondent Chaitanya uses the ***. Respondent Chaitanya's postconference brief, p. 38.

Figure I-1
Barium chloride: Manufacturing process flowchart



Source: Petitions, vol. I, exh. I-1.

Domestic like product issues

No issues with respect to domestic like product have been raised during this proceeding. Petitioner states that there is a single domestic like product consisting of barium chloride that is like the imported barium chloride described in the scope of the Petitions.[43] Respondent BassTech agrees with the definition of the domestic industry proposed in the Petitions but will take no position on the definition of the domestic like product at present.[44] Respondent Chaitanya did not comment on the domestic like product in its postconference brief.

[43] Petitioner's postconference brief, p. 2. The definition proposed by Petitioner in the Petitions matches Commerce's scope. Compare Petitions, pp. I-6–I-7 to 87 FR 7094, February 8, 2022 and 87 FR 7100, February 8, 2022.

[44] Respondent BassTech's postconference brief, p. 2.

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

U.S. market characteristics

There are two primary forms of barium chloride – crystalline and anhydrous. The primary end use of crystalline barium chloride is as an intermediate product in the production of molecular catalyst sieves, which are used by oil refineries to separate an industrially useful product (paraxylene molecules) from other mixed xylenes.[1] Crystalline barium chloride is also used as a cleansing agent in certain chemical and waste-water treatment processes, in lubricating oil additives, and as a raw material in the production of certain chemicals, pigments, and paper coatings. The anhydrous form of barium chloride is used primarily as an ingredient in heat-treating salts and metal fluxes for hardening steel.[2] The market for barium chloride is mature, and the end use applications have narrowed over time.

Demand for barium chloride fluctuated but generally decreased during January 2018-September 2021, driven primarily by decreases in petroleum prices and the economic downturn resulting from the COVID-19 pandemic. Overall, apparent U.S. consumption in 2020 was *** percent lower than in 2018 and was *** percent lower in January-September 2021 compared to the same period in 2020.

The barium chloride market is dominated by one major U.S. producer, CPC, and several importers.[3] India is by far the largest import source, and *** accounted for the large majority of reported imports during January 2018-September 2021. The market share among CPC and importers fluctuated during the investigation period, but CPC accounted for a lower share of the market in 2020 compared to 2018 and a lower share of the market during January-September 2021 compared to January-September 2020, while imports from India accounted for a higher share.[4] Nonsubject imports accounted for less than *** percent of domestic shipments throughout the period of investigation.

[1] "Paraxylene is a raw material used in the production of terephthalic acid, a precursor to polyethylene terephthalate, or PET, which is then used downstream in the production of clothing and plastic bottles." See also Conference transcript, p. 14, 38-39 (Bourdon).

[2] Petitioner estimates that anhydrous sales represent less than 5 percent of the barium chloride market. Conference transcript, pp. 18 and 39 (Bourdon and Ingram).

[3] Conference transcript, pp. 14 (Bourdon) and 22-23 (Woodings).

[4] CPC accounted for *** percent of the domestic market in 2018, *** percent in 2019, *** percent in 2020, and *** percent in January-September 2021. Imports from India accounted for *** percent of the domestic market in 2018, *** percent in 2019, *** percent in 2020, and *** percent in January-September 2021.

Channels of distribution

U.S. producer CPC and importers of subject barium chloride sold mainly to end users throughout January 2018-September 2021, as shown in table II-1.

Table II-1
Barium chloride: Share of U.S. shipments by source, channel of distribution, and period

Shares in percent

Source	Channel	2018	2019	2020	Jan-Sept 2020	Jan-Jun 2021
United States	Distributor	***	***	***	***	***
United States	End user	***	***	***	***	***
India	Distributor	***	***	***	***	***
India	End user	***	***	***	***	***
Nonsubject sources	Distributor	***	***	***	***	***
Nonsubject sources	End user	***	***	***	***	***
All import sources	Distributor	***	***	***	***	***
All import sources	End user	***	***	***	***	***

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

Geographic distribution

U.S. producer CPC reported selling barium chloride to ***, while importers reported selling to all contiguous regions but the Pacific Coast region (table II-2). For U.S. producer CPC, *** percent of its sales were within 100 miles of its production facility, *** percent were between 101 and 1,000 miles, and *** percent were over 1,000 miles. Importers sold *** percent within 100 miles of their U.S. points of shipment, *** percent between 101 and 1,000 miles, and *** percent over 1,000 miles.

Table II-2
Barium chloride: Count of U.S. producers' and U.S. importers' geographic markets

Region	U.S. producers	India
Northeast	***	1
Midwest	***	4
Southeast	***	3
Central Southwest	***	2
Mountain	***	1
Pacific Coast	***	0
Other	***	0
All regions (except Other)	***	0
Reporting firms	1	9

Source: Compiled from data submitted in response to Commission questionnaires.
Note: Other U.S. markets include AK, HI, PR, and VI.

Supply and demand considerations

U.S. supply

Table II-3 provides a summary of the supply factors regarding barium chloride from producers in the United States and India.

Table II-3
Barium chloride: Supply factors that affect the ability to increase shipments to the U.S. market, by country

Quantity in pounds; ratio and share in percent; count is number of "yes" responses

Factor	Measure	United States	India
Capacity 2018	Quantity	***	***
Capacity 2020	Quantity	***	***
Capacity utilization 2018	Ratio	***	***
Capacity utilization 2020	Ratio	***	***
Inventories to total shipments 2018	Ratio	***	***
Inventories to total shipments 2020	Ratio	***	***
Home market shipments 2020	Share	***	***
Non-U.S. export market shipments 2020	Share	***	***
Ability to shift production (firms reporting "yes")	Count	*** of 1	*** of 2

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

Note: U.S. producer CPC accounted for *** percent of U.S. production of barium chloride in 2020. Responding foreign producer/exporter firms accounted for *** U.S. imports of barium chloride from India during 2020. For additional information on U.S. production and of U.S. imports from India, please refer to Part I, "Summary Data and Data Sources."

Domestic production

Based on available information, U.S. producers of barium chloride have the ability to respond to changes in demand with large changes in the quantity of shipments of U.S.-produced barium chloride to the U.S. market. The main contributing factors to this degree of responsiveness of supply are the availability of *** unused capacity and *** inventory, as well as ***. Factors mitigating the responsiveness of supply include ***. While CPC's reported overall capacity decreased by *** percent between 2018 and 2020, its overall production and commercial U.S. shipments decreased by *** percent and *** percent, respectively. This contributed to *** decrease in capacity utilization over the period of investigation; CPC reported capacity utilization levels of ***

percent in 2018, *** percent in 2019, *** percent in 2020, *** percent during January-September 2020, and *** percent during January-September 2021.

CPC reported that *** on the same equipment that it uses to produce barium chloride, and that "***." CPC reported *** export shipments ***, although its exports shipments *** accounted for *** percent of its total shipments ***.

Subject imports from India

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

Overall, Indian producers' reported capacity utilization decreased *** from *** percent in 2018 to *** percent in 2020. Indian producers reported a capacity utilization of *** percent during January-September 2021, however, and project their overall capacity utilization to continue to increase to *** percent by the end of 2022. This increase is primarily driven by increases in overall production and shipments *** during January-September 2021. Their overall production of barium chloride is projected to increase further in 2022, from *** during January-September 2021 to *** by 2022.

*** reported the ability to shift shipments to other products on the same equipment as barium chloride, ***.

Imports from nonsubject sources

Nonsubject imports accounted for less than *** percent of total U.S. imports throughout the period of investigation. Based on questionnaire responses, the largest source of nonsubject imports during January 2018-September 2021 was ***

***.[5] The largest source of nonsubject imports in 2020 was ***.[6]

Supply constraints

Most firms (including ***) indicated that they had not experienced any supply constraints since January 1, 2018. Among the firms reporting constraints, *** reported that an increase in global demand in early 2018 ***. In its petitions, CPC indicated that overall domestic supply had decreased, stating that "the reduction in U.S. supply is consistent with the narrowing range of barium chloride uses in the U.S. market over the same time period."[7] CPC also indicated that the COVID-19 pandemic created supply chain delays within the United States.[8] *** reported that ***, which led to it "***." *** reported that current global container shortages have increased lead times from 2-3 months to almost 6-8 months, and that suppliers in India are unable to book vessels, leading to freight cost increases.

U.S. demand

Based on available information, the overall demand for barium chloride is likely to experience small changes in response to changes in price. The main contributing factors to this degree of responsiveness are the lack of substitutes, particularly for its largest end use application, molecular sieves in oil refining, and the apparent small share of the cost of barium chloride in this application. Demand for barium chloride also appears to be mature, with a narrowing of end use applications over time.[9]

[5] ***.

[6] CPC stated that it believes imports as reported in public import data from Mexico, the United Kingdom and Russia ***. "***." Petitioner's postconference brief, exh. 2 (Responses to Questions from Commission Staff), p. 1.

[7] Petitions, I-13.

[8] Conference transcript, p. 33 (Ingram).

[9] Petitions, p. I-12; See also Barium Chloride from China, Inv. No. 731-TA-149 (Third Review), USITC Publication 4157, June 2010, pp. II-9–10 ("Third review publication"); Conference transcript. pp. 18 and 20 (Ingram), and 41 (Bourdon).

End uses and cost share

For crystalline barium chloride, the most commonly used form, the primary reported end use is as an intermediate product in the production of molecular catalyst sieves, "which in turn are used in oil refinery complexes to separate industrially useful paraxylene molecules from other mixed xylenes."[10] Paraxylene is a raw material used in the production of terephthalic acid, which is a precursor to polyethylene terephthalate (PET) (the chemical name for polyester), which is in turn used in the production of clothing fibers and plastic bottles, as well as other manufactured products.[11] Crystalline barium chloride "also serves as a cleansing agent in the removal of soluble sulfates in certain chemical and water treatment processes, as a cleansing ingredient in lubricating oil additives, and as a raw material in the production of certain chemicals, pigments, and paper coatings. {It is} also used as a base material for production of ink pigments and other barium intermediate products such as barium titanate and barium metaborate. Further, {it is} used in certain environmental applications, including wastewater treatment."[12] The anhydrous form of barium chloride is used "primarily as an ingredient in heat-treating salts and metal fluxes – that is, molten baths used to harden metal parts which are usually small specialty steel parts such as tools and dies."[13] Other reported end uses include galvanizing.

In the last full review on the same product from China, "most firms reported that barium chloride generally accounts for a small share of the cost of molecular sieves and a small to moderate share of the cost of its other final end-use products."[14] In the current investigation, the only reported cost share for barium chloride in any of its reported end use was in wastewater treatment, for which *** reported a cost share of 25 percent.

Business cycles

Most firms reported that the barium chloride market was not subject to business cycles or any distinct conditions of competition. Among the firms reporting business cycles, *** reported that the market for molecular sieves is cyclical and has been

[10] Petitions, pp. 5-6.
[11] Ibid.
[12] Ibid.
[13] Ibid.
[14] Third review publication, p. II-7.

experiencing a downturn.[15] *** reported that demand for barium chloride used as a catalyst in paraxylene sequestering is impacted by the price of gasoline and PET, and demand for barium chloride used for wastewater treatment is dependent on cycles in the construction industry. However, BassTech indicated that wastewater applications are generally for industrial use and that "barium chloride does not go into municipal water treatment."[16] *** reported that the market is cyclical and application specific, and that demand, price, production and capacity levels all influence demand and inventory levels for barium chloride.

Demand trends

In its petitions, CPC stated that demand for barium chloride "has become more closely tied to end uses in the downstream refinery industry, which is itself highly dependent on prices of petroleum products."[17] It also indicated that demand for barium chloride experienced "steep declines" in 2021 "due, in part, to falling petroleum prices and an economic downturn during 2020-21," while BassTech testified that "demand has been steadily decreasing since 2017."[18] *** also reported that demand for barium chloride is impacted by the price of gasoline and the construction industry, which uses barium chloride in wastewater treatment. Barium chloride is also used in wastewater treatment from drilling activities, including fracking.[19] Several firms also indicated that the COVID-19 pandemic, through its impact on downstream markets, also decreased demand for barium chloride beginning in 2020.[20]

As shown in figure II-1, the average prices for crude oil and gasoline followed similar trends. They both dipped between the end of 2018 through the beginning of 2019, remained relatively stable through the end of 2019, then decreased again and stayed at a lower level

[15] See also Petitioner's postconference brief, exh. 2 (Responses to Questions from Commission Staff), p. 4; Conference transcript, p. 18 (Ingram) and 42 (Bourdon).

[16] Conference transcript, p. 118 (Chalup).

[17] Petitions, pp. I-11–12, exh. I-12. In the Commission's expedited fifth review on the same product from China, it found that "{t}he principal use for barium chloride … is as an intermediate material for the production of molecular catalyst sieves, used by oil refinery complexes use to separate paraxylene molecules from other mixed xylenes. Consequently, the Commission expected petroleum prices to affect demand for barium chloride." Barium Chloride from China, Inv. No. 731-TA-149 (Fifth Review), USITC Publication 5203, June 2021, p. 11 ("Fifth review publication").

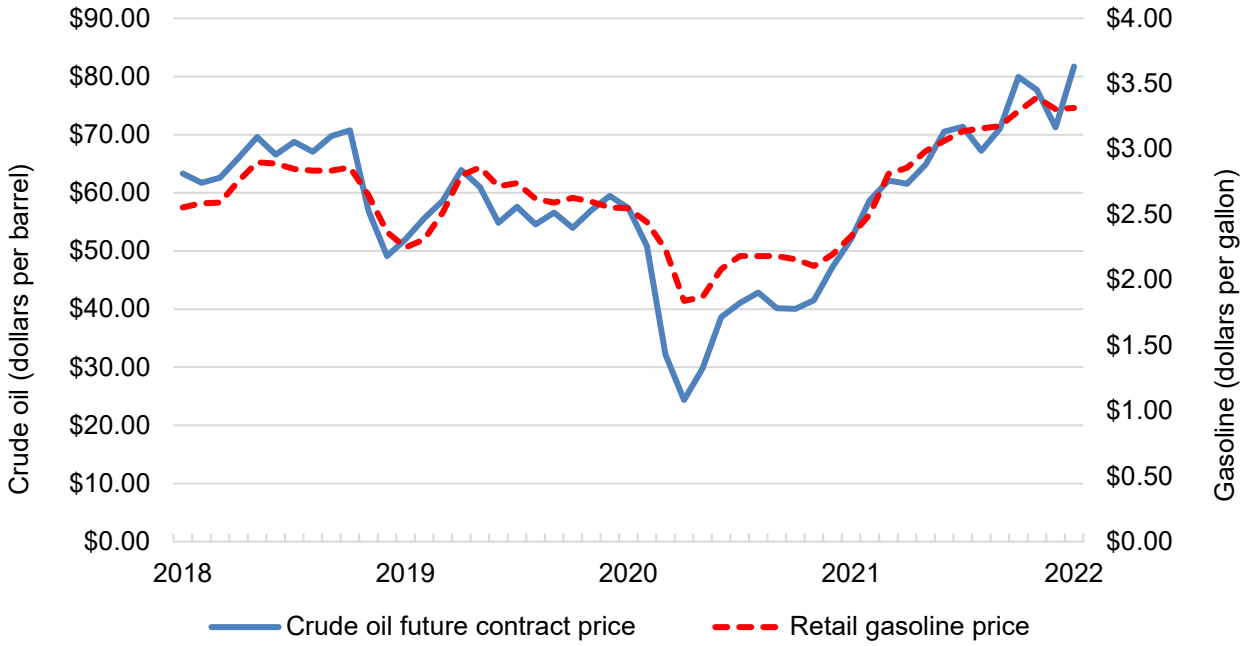
[18] Petitions, pp. I-8 and I-14; Petitioner's postconference brief, p. 6; Conference transcript, p. 113 (Chalup).

[19] Petitioner's postconference brief, p. 6 and exh. 2 (Responses to Questions from Commission Staff), p. 8.

[20] Petitioner's postconference brief, p. 7.

through most of 2020. At the end of 2020, crude oil and gasoline prices began recovering, and continued this recovery throughout 2021.

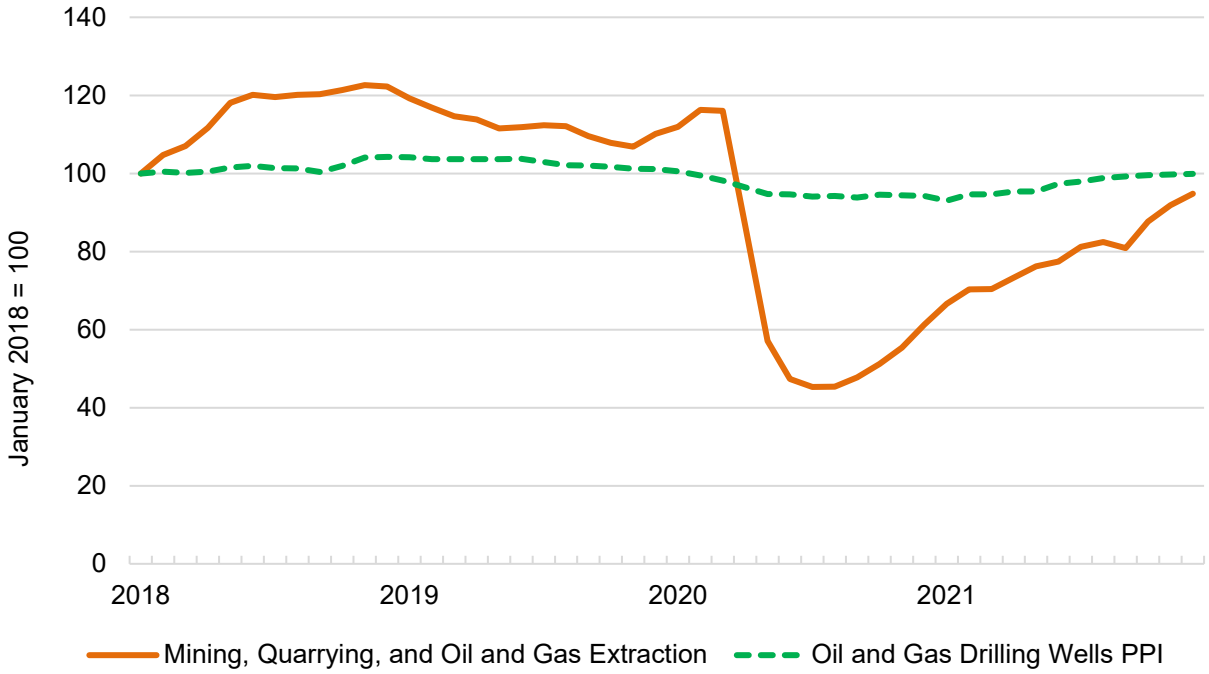
Figure II-1
Oil and gasoline prices: Cushing, OK crude oil future contract 1-4 (average) price, dollars per barrel, and U.S. regular all formulations retail gasoline prices, dollars per gallon, monthly, January 2018–January 2022



Source: U.S. Energy Information Administration, https://www.eia.gov/petroleum/weekly/, retrieved February 5, 2022.

As shown in figure II-2, mining, quarrying, and oil and gas extraction increased in 2018, decreased slightly but remained relatively steady throughout 2019, then increased again before decreasing substantially in the beginning of 2020. Since mid-2020, mining, quarrying, and oil and gas extraction has increased, but by December 2021 was still lower than levels shown in 2018. The Producer Price Index for oil and gas drilling wells remained generally stable throughout the period of investigation.

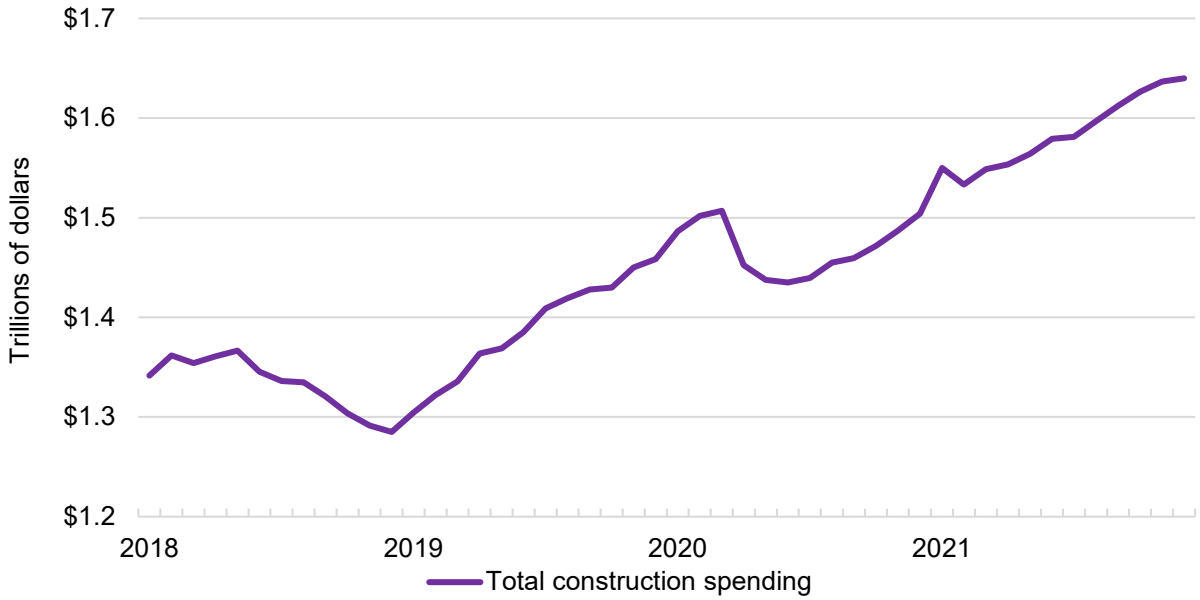
Figure II-2
Industrial drilling production and price indexes: Industrial production: Mining, quarrying, and oil and gas extraction: Drilling oil and gas wells (NAICS = 213111), not seasonally adjusted, and Producer Price Index by industry: Drilling oil and gas wells: Primary services, not seasonally adjusted, Index Jan 2018=100, monthly, January 2018–December 2021



Source: St. Louis Federal Reserve Economic Data, https://fred.stlouisfed.org/series/IPN213111N# and https://fred.stlouisfed.org/series/PCU213111213111P, retrieved February 10, 2022.

As shown in figure II-3, construction spending generally decreased through 2018, then steadily increased throughout 2019. At the beginning of 2020, construction spending decreased again, but began increasing again by mid-2020, showing steady growth through 2021.

Figure II-3
Construction spending: Total construction spending in the United States, seasonally adjusted annual rate, trillions of dollars, monthly, January 2018–December 2021



Source: St. Louis Federal Reserve Economic Data, https://fred.stlouisfed.org/series/TTLCONS, retrieved February 9, 2022.

Most firms reported either no change or a decrease in U.S. demand for barium chloride since January 1, 2018 (table II-4).

Table II-4
Barium chloride: Count of firms' responses regarding overall domestic and foreign demand

Market	Firm type	Increase	No change	Decrease	Fluctuate
Domestic demand	U.S. producers	***	***	***	***
Domestic demand	Importers	0	4	2	1
Foreign demand	U.S. producers	***	***	***	***
Foreign demand	Importers	0	2	1	0

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

*** reported that there was a temporary decline in the need for plastics and polyester due to the COVID-19 pandemic. *** that molecular sieve production is a cyclical market that has been on a downturn. *** reported that better quality salts used in the production of chlor alkali in the United States reduced the demand for barium chloride in this application. *** stated that one former user of barium chloride for use in its ink pigments, ***, started producing overseas and therefore eliminated its domestic demand for barium chloride. BassTech testified that "there was a considerable decrease in the demand for barium chloride for wastewater treatment… {related to} the suspension of

construction projects due to the {COVID-19} pandemic."[21] *** reported that it lost an account and so its individual demand for barium chloride was reduced.

Substitute products

Most firms reported that there are no substitutes for barium chloride, though two firms (***) reported that barium hydroxide can be a substitute in water treatment applications. *** reported that the price of this substitute did not affect the price for barium chloride.

Substitutability issues

This section assesses the degree to which U.S.-produced barium chloride and imports of barium chloride from the subject country can be substituted for one another by examining the importance of certain purchasing factors and the comparability of barium chloride from domestic and imported sources based on those factors. Based on available data, staff believes that there is at least a moderate-to-high degree of substitutability between domestically produced barium chloride and barium chloride imported from India.[22] Factors contributing to this level of substitutability include similar quality and availability for barium chloride sold from inventory, at least some interchangeability between domestic and subject sources, and the importance that price plays as a purchase factor. Factors reducing substitutability may include different lead times between the United States and India, and the potential influence of purchaser preferences for diverse supply sources.

Factors affecting purchasing decisions

Most important purchase factors

Purchasers responding to lost sales lost revenue allegations[23] were asked to identify the main purchasing factors their firm considered in their purchasing decisions for barium chloride.

[21] Conference transcript, p. 80 (Chalup).

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

[23] This information is compiled from responses by purchasers identified by the Petitioner to the lost sales lost revenue allegations. See Part V for additional information.

The major purchasing factors identified by firms included overall price/cost, quality, availability, specifications, the need for multiple suppliers, relationship/trust, consistency of supply, and meeting customer expectations.[24]

The most often cited top three factors firms consider in their purchasing decisions for barium chloride were price/cost (cited by 8 firms), availability/ability to supply (5 firms), and quality (3 firms) (table II-5). Availability was the most frequently cited first-most important factor (cited by 3 firms), followed by quality (2 firms). Price/cost was the most frequently reported second-most factor (cited by 5 firms) and third-most important factor (cited by 2 firms).

Table II-5
Barium chloride: Count of ranking of factors used in purchasing decisions as reported by purchasers, by factor

Factor	First	Second	Third	Total
Price/cost	1	5	2	8
Availability/ability to supply	3	1	1	5
Quality	2	---	1	3
All other factors	1	1	2	4

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

Note: Other factors included the need for multiple suppliers (mentioned by 2 firms); and the product meets customers' expectations, specifications, relationship/trust, and consistency of supply (1 firm each).

Lead times

Barium chloride is primarily sold from inventory. U.S. producer CPC reported that *** percent of its barium chloride is sold from its inventory, with an average lead time of *** days, while importers reported that *** percent of their barium chloride is sold from inventory, with average lead times of *** days. Importers also reported that *** percent of their commercial shipments were sold out of foreign producers' inventories, with average lead

[24] CPC argues that there are no specialized grades of barium chloride, and that "while each customer may have its own specification… they're easily met by general production." Petitioner's postconference brief, pp. 4-5; Conference transcript, p. 47 (Bourdon). Chaitanya states that it has three grades of crystalline barium chloride (technical grade, catalyst grade, and electronic grade) for different applications/customers. Chaitanya also states that these various grades result from process differences rather than raw material differences. Respondent Chaitanya's postconference brief, pp. 10-12, 14, and 37; Conference transcript, pp. 81 and 83 (Gupta). BassTech argues that quality and reliability are important purchase factors, as "specifications and quality vary between customers," and "specialty product is sold {based} on quality, not price." BassTech testified that Honeywell only began purchasing from BassTech "after working with Chaitanya Chemicals in India for years to develop its required quality." Respondent BassTech's postconference brief, pp. 3, 6 and exh. 1, pp. 1-3 and atts. 1-3; Conference transcript, pp. 77-78 (Chalup), 93 (Pope), and 105-109 and 115 (Chalup).

times of *** days, and *** percent was produced-to-order, with an average lead time of *** days.

Comparison of U.S.-produced and imported barium chloride

In order to determine whether U.S.-produced barium chloride can generally be used in the same applications as imports from India and other countries, U.S. producers and importers were asked whether the products can always, frequently, sometimes, or never be used interchangeably. As shown in tables II-6 and II-7, U.S. producer CPC reported that domestically manufactured barium chloride and barium chloride from India *** be used interchangeably. Most importers reported that domestic barium chloride and barium chloride from India can sometimes be used interchangeably.

Table II-6
Barium chloride: Count of U.S. producers reporting the interchangeability between barium chloride produced in the United States and in other countries, by country pair

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

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

Table II-7
Barium chloride: Count of importers reporting the interchangeability between barium chloride produced in the United States and in other countries, by country pair

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

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

In further comments, *** reported that interchangeability between barium chloride from the United States and India depends on the production method, and that "***." BassTech also testified that trace levels of impurities such as Sodium (Na) or Sulfur (S) may preclude the use of barium chloride for catalyst performance or water treatment applications.[25] *** reported that logistical and lead time differences can make domestic product more attractive, and that importing chemicals "is a challenge." *** reported that interchangeability depends on end user specifications, and *** reported that quality differences could limit interchangeability.

[25] Conference transcript, pp. 79 and 105-109 (Chalup).

In addition, U.S. producers and importers were asked to assess how often differences other than price were significant in sales of barium chloride from the United States, subject, or nonsubject countries. As seen in table II-8, CPC reported that differences other than price are *** significant when comparing domestically manufactured barium chloride with that from India and other sources. As seen in table II-9, most importers reported that differences other than price were sometimes significant for all comparisons.

Table II-8
Barium chloride: Count of U.S. producers reporting the significance of differences other than price between barium chloride produced in the United States and in other countries, by country pair

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

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

Table II-9
Barium chloride: Count of importers reporting the significance of differences between barium chloride produced in the United States and in other countries, by country pair

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

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

*** further commented on the role of non-price factors thusly:

*"***."*

Part III: 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 I* of this report and information on the volume and pricing of imports of the subject merchandise is presented in *Part IV* and *Part V*. Information on the other factors specified is presented in this section and/or *Part VI* and (except as noted) is based on the questionnaire response of one firm that accounted for an estimated *** percent of U.S. production of barium chloride during 2020.

U.S. producers

The Commission issued a U.S. producer questionnaire to six companies that were identified in the petitions, industry research, and previous and related title VII investigations on barium chloride.[1] One firm, CPC, provided usable data on its operations.[2] Based on all available information, staff estimates that CPC accounted for *** percent of U.S. production of barium chloride during 2020.[3] [4] [5] [6]

[1] A U.S. producer questionnaire was issued to: (1) Alfa Aesar by Thermo Fisher Scientific ("Alfa"); (2) Barium & Chemicals, Inc. ("B&C"); (3) CPC (*i.e.,* Petitioner); (4) GFS Chemicals, Inc. ("GFS"); (5) Global Tungsten & Powders Corporation ("GTP"); and (6) Osram Sylvania ("Osram").

[2] CPC asserts that it is the sole remaining commercial producer of barium chloride in the United States. Petitions, p. I-3; Petitioner's postconference brief, p. 9.

[3] CPC notes that other companies may produce small amounts of barium chloride for their internal consumption. Petitions, p. I-3.

[4] GFS did not formally submit a U.S. producer questionnaire. However, it communicated that ***. GFS reported that ***. Correspondence with ***, January 24, 2022, EDIS #761625.

[5] *** reported sourcing barium chloride from CPC, Tilley Co. ("Tilley"), and Spectrum Chemical Mfg. Corp. ("Spectrum"). Industry research shows that Tilley is a U.S. distributor of chemicals including barium chloride. Spectrum describes itself as chemical manufacturing company in the United States. As of the writing of this report, staff have not been able to reach Spectrum to confirm if it is a U.S. producer of barium chloride.

[6] Based on all available information, staff believe that CPC accounted for *** percent of barium chloride production during 2020 and that the remaining production is accounted for by ***.

Table III-I presents CPC's position on the petitions, production location, and share of total production.

Table III-1
Barium chloride: U.S. producer CPC, its position on the petitions, location of production, and share of reported production, 2020

Shares in percent

Firm	Position on AD & CVD petitions	Production location	Share of production
CPC	Petitioner	Cartersville, GA	***
All firms	--	--	***

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

CPC reported that ***. ***, CPC noted that it purchased barium chloride from two ***.[7]

[7] See the "U.S. producers' imports and purchases" section of this report for more information.

Table III-2 presents CPC's reported changes in operations since January 1, 2018. CPC reported ***. CPC noted that the COVID-19 pandemic had ***. CPC explains that ***. The pandemic, CPC notes, ***.

Table III-2
Barium chloride: U.S. producer CPC's reported changes in operations, since January 1, 2018

Item	Narrative response on changes in operations
Prolonged shutdowns or curtailments	***
Revised labor agreements	***
Other	***

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

U.S. production, capacity, and capacity utilization

Table III-3 and figure III-1 present CPC's production, capacity, and capacity utilization. CPC's capacity, production, and, consequently, utilization rate declined between 2018 and 2020.

Capacity was unchanged at *** pounds during 2018-19. It was *** pounds in 2020, a decline of *** percent from 2019. Capacity during January–September 2021 ("interim 2021") was higher than during January–September 2020 ("interim 2020").

Production was reported to be *** pounds in 2018, *** pounds in 2019, and *** pounds in 2020. This represents a decline of *** percent from 2018 to 2019,[8] followed by an additional drop of *** percent from 2019 to 2020, for an overall decrease of *** percent during 2018-20. Interim 2021 data implied further declines in production as it was lower than reported production in interim 2020.

Capacity utilization followed decreasing capacity and production. The utilization rate was *** percent in 2018, *** percent in 2019, and *** percent in 2020, a decline of *** percentage points between 2018 and 2020. The interim 2021 utilization rate (*** percent) was lower as compared to the rate in interim 2020 (*** percent).

Table III-3
Barium chloride: U.S. producer CPC's average production capacity, production, and capacity utilization, by period

Capacity and production in 1,000 pounds, capacity utilization in percent

Item	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
Capacity	***	***	***	***	***
Production	***	***	***	***	***
Capacity utilization	***	***	***	***	***

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 "---".

[8] *** reported that ***.

Figure III-1
Barium chloride: U.S. producer CPC's average production capacity, production, and capacity utilization, by period

* * * * * * *

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

Alternative products

CPC reported that ***.[9] Table III-4 presents CPC's production of barium chloride by its two different form types,[10] as well as production of alternative products.

[9] CPC reported that ***.

[10] For more information on barium chloride and its two different form types—crystalline barium chloride and anhydrous barium chloride—see "The product" section in Part I of this report.

Table III-4
Barium chloride: U.S. producer CPC's overall capacity and production on the same equipment as subject production, by period

Quantities in 1,000 pounds; Shares and ratios in percent

Item	Measure	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
Overall capacity	Quantity	***	***	***	***	***
Production: Crystalline barium chloride	Quantity	***	***	***	***	***
Production: Anhydrous barium chloride	Quantity	***	***	***	***	***
Production: All barium chloride	Quantity	***	***	***	***	***
Production: Barium carbonate	Quantity	***	***	***	***	***
Production: Other products	Quantity	***	***	***	***	***
Production: All out-of-scope products	Quantity	***	***	***	***	***
Production: Total	Quantity	***	***	***	***	***
Overall capacity utilization	Ratio	***	***	***	***	***
Production: Crystalline barium chloride	Share	***	***	***	***	***
Production: Anhydrous barium chloride	Share	***	***	***	***	***
Production: All barium chloride	Share	***	***	***	***	***
Production: Barium carbonate	Share	***	***	***	***	***
Production: Other products	Share	***	***	***	***	***
Production: All out-of-scope products	Share	***	***	***	***	***
Production: Total	Share	***	***	***	***	***

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

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

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

Table III-5 presents CPC's U.S. shipments, export shipments, and total shipments. CPC's domestic shipments, exports, and, consequently, total shipments all declined during the period of investigation ("POI").

The data show that CPC is primarily focused on domestic shipments. CPC did, however, report export shipments.[11] During the POI, CPC's exports accounted for between *** and *** percent of total shipments by quantity.[12] In terms of unit value, the unit value of CPC's U.S. shipments was higher as compared to the unit value of its exports. During the POI, the unit value of CPC's U.S. shipments ranged between $*** and $*** per pound, while the unit value of its exports ranged between $*** and $*** per pound.

Table III-5
Barium chloride: U.S. producer CPC's total shipments, by destination and period

Quantity in 1,000 pounds; Value in 1,000 dollars; Unit values in dollars per pound; Shares in percent

Item	Measure	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
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.

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 "---".

[11] CPC reported that it exports barium chloride to ***.

[12] CPC reported ***.

Table III-6 presents CPC's U.S. shipments by the type of shipment. As previously noted, CPC asserts that it is the sole remaining commercial producer of barium chloride in the United States.[13] The data show that CPC's domestic commercial shipments declined during the POI. CPC shipped *** pounds in 2018, *** pounds in 2019, and *** pounds in 2020, a decline of *** percent during 2018-2020. CPC's interim 2021 domestic commercial shipments were *** percent lower than in interim 2020.

CPC reported *** related firms. It did, however, report internal consumption.[14] CPC's share of internal consumption to U.S. shipments, by quantity, increased over the POI; however, this is a result of more significant declines in commercial U.S. shipments, as internal consumption actually decreased *** percent during 2018-20. Internal consumption was slightly higher in interim 2021 as comparted to interim 2020.

[13] Petitions, p. I-3; Petitioner's postconference brief, p. 9.

[14] CPC noted that its "***." For more information, see the "Captive consumption" section of Part III of this report.

Table III-6
Barium chloride: U.S. producer CPC's U.S. shipments, by type and period

Quantity in 1,000 pounds; Value in 1,000 dollars; Unit values in dollars per pound; Shares in percent

Item	Measure	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
Commercial U.S. shipments	Quantity	***	***	***	***	***
Internal consumption	Quantity	***	***	***	***	***
Transfers to related firms	Quantity	***	***	***	***	***
U.S. shipments	Quantity	***	***	***	***	***
Commercial U.S. shipments	Value	***	***	***	***	***
Internal consumption	Value	***	***	***	***	***
Transfers to related firms	Value	***	***	***	***	***
U.S. shipments	Value	***	***	***	***	***
Commercial U.S. shipments	Unit value	***	***	***	***	***
Internal consumption	Unit value	***	***	***	***	***
Transfers to related firms	Unit value	***	***	***	***	***
U.S. shipments	Unit value	***	***	***	***	***
Commercial U.S. shipments	Share of quantity	***	***	***	***	***
Internal consumption	Share of quantity	***	***	***	***	***
Transfers to related firms	Share of quantity	***	***	***	***	***
U.S. shipments	Share of quantity	***	***	***	***	***
Commercial U.S. shipments	Share of value	***	***	***	***	***
Internal consumption	Share of value	***	***	***	***	***
Transfers to related firms	Share of value	***	***	***	***	***
U.S. shipments	Share of value	***	***	***	***	***

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 “---“.

As previously noted, there are two different form types of barium chloride—crystalline barium chloride and anhydrous barium chloride. Table III-7 presents CPC's U.S. shipments by form type. The data show that CPC is primarily focused on shipments of ***. During the POI, the share of CPC's U.S. shipments by quantity of *** ranged between *** and *** percent.

Table III-7
Barium chloride: U.S. producer CPC's U.S. shipments, by product type and period

Quantity in 1,000 pounds; Shares in percent

Item	Measure	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
Crystalline	Quantity	***	***	***	***	***
Anhydrous	Quantity	***	***	***	***	***
Other	Quantity	***	***	***	***	***
All product types	Quantity	***	***	***	***	***
Crystalline	Share	***	***	***	***	***
Anhydrous	Share	***	***	***	***	***
Other	Share	***	***	***	***	***
All product types	Share	***	***	***	***	***

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 "---".

Captive consumption

Section 771(7)(C)(iv) of the Act states that–[15]

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

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

Transfers and sales

As reported in table III-6 above, internal consumption accounted for between *** and *** percent of CPC's U.S. shipments of barium chloride during the POI.

First statutory criterion in captive consumption

The first requirement for application of the captive consumption provision is that the domestic like product that is internally transferred for processing into that downstream article not enter the merchant market for the domestic like product. CPC reported internal consumption of barium chloride ***. As shown in table III-8, the barium chloride CPC internally consumed ***.

Table III-8
Barium chloride: U.S. producer CPC's internal consumptions and transfers, by period and use

Quantity in 1,000 pounds; Shares in percent

Item	Measure	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
Sold as is	Quantity	***	***	***	***	***
Used to produce downstream products	Quantity	***	***	***	***	***
All internal consumption and transfers	Quantity	***	***	***	***	***
Sold as is	Share	***	***	***	***	***
Used to produce downstream products	Share	***	***	***	***	***
All internal consumption and transfers	Share	***	***	***	***	***

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

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

Second statutory criterion in captive consumption

The second criterion of the captive consumption provision concerns whether the domestic like product is the predominant material input in the production of the downstream article that is captively produced. With respect to the downstream articles resulting from captive production, barium chloride reportedly comprises *** percent of CPC's finished value/costs of downstream products and *** percent of its total inputs (table III-9).

Table III-9
Barium chloride: U.S. producers' share of inputs into downstream products

Shares in percent

Material input	Share of value/cost	Share of total inputs
Barium chloride	***	***
Other inputs	***	***
All material inputs	***	***

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

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

U.S. producer's inventories

Table III-10 presents CPC's end-of-period inventories and the ratio of these inventories to its production, U.S. shipments, and total shipments**.** CPC's inventories increased irregularly during 2018-20. CPC held *** pounds in inventories in 2018, they decreased to *** pounds in 2019, but then increased to *** in 2020, for a total increase of *** percent during 2018-20. Inventories were higher in interim 2021 as compared to interim 2020.

All of CPC's end-of-period inventory ratios increased during 2018-20. The interim 2021 ratios were higher as compared to the ratios in interim 2020. In interim 2021, the inventory to U.S. production ratio and the inventory to U.S. shipments ratio ***.[16]

Table III-10
Barium chloride: U.S. producer CPC's inventories and their ratio to select items, by period

Quantity in 1,000 pounds; Inventory ratios in percent

Item	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
End-of-period inventory quantity	***	***	***	***	***
Inventory ratio to U.S. production	***	***	***	***	***
Inventory ratio to U.S. shipments	***	***	***	***	***
Inventory ratio to total shipments	***	***	***	***	***

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

Note: 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 "---".

[16] CPC's interim 2021 end-of-period inventories ***. In its questionnaire response, CPC noted that "***."

U.S. producer's imports and purchases

As noted above, CPC *** is a purchaser of barium chloride from two ***.[17] Table III-11 presents CPC's production, as well as its purchases of imports and the overall imports from the relevant subject importers.

Table III-11
Barium chloride: U.S. producer CPC's U.S. production, U.S. purchases of imports and the overall imports from the relevant subject importers, by period

Quantity in 1,000 pounds

Item	Measure	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
U.S. production	Quantity	***	***	***	***	***
U.S. purchases of imports from India (imported by ***)	Quantity	***	***	***	***	***
*** U.S. imports from India	Quantity	***	***	***	***	***
U.S. purchases of imports from India (imported by ***)	Quantity	***	***	***	***	***
*** U.S. imports from India	Quantity	***	***	***	***	***

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.
***.

[17] CPC reported that "***."

U.S. employment, wages, and productivity

Table III-12 presents CPC's employment-related data.

Table III-12
Barium chloride: U.S. producer CPC's employment related information, by item and period

Item	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
Production and related workers (PRWs) (number)	***	***	***	***	***
Total hours worked (1,000 hours)	***	***	***	***	***
Hours worked per PRW (hours)	***	***	***	***	***
Wages paid ($1,000)	***	***	***	***	***
Hourly wages (dollars per hour)	***	***	***	***	***
Productivity (pounds per hour)	***	***	***	***	***
Unit labor costs (dollars per pound)	***	***	***	***	***

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

The number of production and related workers (PRWs), total hours worked, and hours worked per PRW decreased during 2018-20. Wages paid decreased *** percent between 2018 and 2020, but hourly wages increased *** percent during the same timeframe. Productivity decreased irregularly during 2018-20. Productivity was *** pounds per hour in 2018, it then decreased to *** pounds per hour in 2019, but then increased to *** pounds per hour in 2020.

Interim 2021 data is inconsistent with data reported in interim 2020 and during 2018-20. CPC explained: ***.

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

U.S. importers

The Commission issued importer questionnaires to 23 firms[1] believed to be importers of barium chloride under HTSUS subheading 2827.39.45, as well as to all identified U.S. producers of barium chloride.[2] Usable questionnaire responses were received from 11 firms, representing *** imports of barium chloride from all sources during 2020.[3] [4] Table IV-1 lists all responding U.S. importers of barium chloride from India and other sources, their locations, and their shares of U.S. imports, in 2020.

[1] These firms were identified in the petitions, industry research, and previous and related title VII investigations on barium chloride.

[2] See Part III of this report for a discussion on U.S. producers and the domestic industry.

[3] During 2020, official Commerce statistics showed that 4.1 million pounds of barium chloride from India and 5,375 pounds of barium chloride from nonsubject sources entered the United States under HTSUS subheading 2827.39.45 (see app. D of this report). The 11 firms which submitted a U.S. importer questionnaire to the Commission reported that they imported *** pounds of barium chloride from India and *** pounds of barium chloride from nonsubject sources in 2020. These firms therefore accounted for *** percent of imports of barium chloride from India and *** percent of imports of barium chloride from nonsubject sources during 2020.

[4] There are indications that there are additional U.S. importers of barium chloride:

- ***.
- ***.
- ***.

Table IV-1
Barium chloride: U.S. importers, their headquarters, and share of total imports within a given source by firm, in 2020

Share in percent

Firm	Headquarters	India	Nonsubject sources	All import sources
BassTech	Fort Lee, NJ	***	***	***
Brenntag Mid-South	Henderson, KY	***	***	***
CDN	Warrenville, IL	***	***	***
Connell	San Francisco, CA	***	***	***
Fermaz	Austin, TX	***	***	***
QualChem	Beasley, TX	***	***	***
Skyhawk	Houston, TX	***	***	***
Skyline	Riverside, CA	***	***	***
Sojitz	New York, NY	***	***	***
Sun	Parsippany, NJ	***	***	***
Wego	Great Neck, NY	***	***	***
All firms	Various	***	***	***

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

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

U.S. imports

Table IV-2 and figure IV-1 present data for U.S. imports of barium chloride from India and all other sources. The majority of imports of barium chloride are imported from the subject country. Imports of barium chloride from nonsubject sources, by quantity, ranged between *** and *** percent of total imports during the POI.

Imports of barium chloride from India decreased irregularly throughout the POI. Imports of subject merchandise declined from *** pounds in 2018 to *** pounds in 2019, a decrease of *** percent.[5] These imports, however, rose to *** pounds in 2020, an increase of *** percent. Overall, imports of barium chloride from India decreased *** percent during 2018-20.

The unit value of imports from India was relatively steady throughout the POI, ranging between $*** and $*** per pound. The unit value of nonsubject imports increased from $*** per pound in 2018 to $*** per pound in 2020, which represented a *** percent increase during 2018-20. The unit value of nonsubject imports was higher in interim 2021 as compared to interim 2020.

The ratio of imports from nonsubject sources to U.S. production was relatively steady throughout the POI, ranging between *** and *** percent. The ratio of imports from India to U.S. production increased from *** percent in 2018 to *** percent in 2020, an increase of *** percentage points during 2018-20. The ratio of imports from India to U.S. production in interim 2021 was higher as compared to the ratio in interim 2020.

[5] BassTech and Brenntag Mid-South accounted for *** percent of the decrease in subject imports during 2018-19.

Brenntag Mid-South, which accounted for *** percent of the decrease, ***.

BassTech, which accounted for *** percent of the decrease, reported that its importation of and subsequent sales of barium chloride are "lumpy" and not linear. It noted that its principal purchaser, Honeywell UOP, "split the business between CPC and BassTech." Respondent BassTech's postconference brief, exh. 1, p. 3; exh. 1, att. 5. ***. *Id.* at exh. 1, p.3.

Table IV-2
Barium chloride: U.S. imports, by source and period

Quantity in 1,000 pounds; Value in 1,000 dollars; Unit values in dollars per pound; Shares and ratios in percent; Ratios represent the ratio to U.S. production

Source	Measure	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
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	***	***	***	***	***
India	Share of quantity	***	***	***	***	***
Nonsubject sources	Share of quantity	***	***	***	***	***
All import sources	Share of quantity	***	***	***	***	***
India	Share of value	***	***	***	***	***
Nonsubject sources	Share of value	***	***	***	***	***
All import sources	Share of value	***	***	***	***	***
India	Ratio	***	***	***	***	***
Nonsubject sources	Ratio	***	***	***	***	***
All import sources	Ratio	***	***	***	***	***

Table continued.

Table IV-2 continued
Barium chloride: U.S. imports, by source and by period

Change in percent

Source	Measure	2018-20	2018-19	2019-20	Jan-Sep 2020-21
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	▲***	▲***	▼***	▲***

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

Figure IV-1
Barium chloride: U.S. import quantities and average unit values, by source and period

* * * * * * *

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

U.S. shipments of imports

Table IV-3 presents U.S. shipments of imports differentiated by product type.[6] The data show that U.S. importers' U.S. shipments of anhydrous barium chloride were relatively small.[7] The share of U.S. importers' U.S. shipments of anhydrous barium chloride ranged between *** and *** percent during the POI.

U.S. importers' U.S. shipment of crystalline barium chloride were comparably larger but declined over the POI. These shipments were *** pounds in 2018, *** pounds in 2019, and *** pounds 2020, a decrease of *** percent during 2018-20. U.S. importers' U.S. shipment of crystalline barium chloride were lower in interim 2021 as compared to interim 2020. U.S. importers' U.S. shipments of other barium chloride, by contrast, increased during 2018-20. The share of these shipments increased from *** percent in 2018 to *** percent in 2020. The share was higher in interim 2021 as compared to interim 2020.[8]

Table IV-3
Barium chloride: U.S. importers' U.S. shipments of imports from India, by product type and period

Quantity in 1,000 pounds; shares in percent

Item	Measure	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
Crystalline barium chloride	Quantity	***	***	***	***	***
Anhydrous barium chloride	Quantity	***	***	***	***	***
Other	Quantity	***	***	***	***	***
All product types	Quantity	***	***	***	***	***
Crystalline barium chloride	Share	***	***	***	***	***
Anhydrous barium chloride	Share	***	***	***	***	***
Other	Share	***	***	***	***	***
All product types	Share	***	***	***	***	***

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 "---".

[6] As previously noted, there are two different form types of barium chloride—crystalline barium chloride and anhydrous barium chloride. See "The product" section of this report for more information.

[7] Petitioner estimates that anhydrous sales represent less than 5 percent of the barium chloride market. Conference transcript, pp. 18 and 39 (Bourdon and Ingram).

[8] Three U.S. importers provided data on their U.S. shipments of other barium chloride. All three firms listed "barium chloride dihydrate" as other. Petitioner notes that barium chloride dihydrate is the same as crystalline barium chloride. Conference transcript, pp. 54-56 (Bourdon). However, staff chose not to modify or change importers' responses with regards to their reported U.S. shipments of other barium chloride.

If the data for other barium chloride is added to the data for crystalline barium chloride, then U.S. importers' U.S shipments of crystalline barium chloride only declined by *** percent during 2018-20.

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 barium chloride by quantity during January 2021 through December 2021 (table IV-4).

Table IV-4
Barium chloride: U.S. imports in the twelve-month period preceding the filing of the petitions, January 2021 through December 2021

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

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

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 “---“.

[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 of the total market

Information on apparent U.S. consumption of the total market is presented in this section. U.S. producers' U.S. shipments and U.S. importers' U.S. shipments are inclusive of commercial shipments, internal consumption, and transfers.[11] [12]

Based on quantity

Table IV-5 and figure IV-2 present data on apparent U.S. consumption of the total market and U.S. market shares by quantity for barium chloride. Apparent consumption from all sources, and consequently total apparent consumption, declined during 2018-20.

U.S. producers' market share was at *** percent in 2018, it decreased to *** percent in 2019, and then further decreased to *** percent in 2020, a decline of *** percentage points during 2018-20. U.S. producers' market share was lower in interim 2021 (*** percent) as compared to interim 2020 (*** percent).

As U.S. producers' market share decreased, India's market share increased. India's share was at *** percent in 2018, it increased to *** percent in 2019, and then further increased to *** percent in 2020, an increase of *** percentage points during 2018-20. India's market share was higher in interim 2021 (*** percent) as compared to interim 2020 (*** percent).

The market share of nonsubject sources was *** percent throughout the POI.

[11] U.S. producers' U.S. shipments represents the data reported by CPC, the sole responding U.S. producers. CPC noted *** internal consumption. See the "Captive consumption" section of Part III for more information. Given CPC's captive consumption, merchant market data is presented below and in app. C, table C-2.

[12] U.S. importers' U.S. shipments do not include data on internal consumption, as no U.S. importer reported internal consumption. ***.

Table IV-5
Barium chloride: Apparent U.S. total market consumption and market shares based on quantity data, by source and period

Quantity in 1,000 pounds; Shares in percent

Source	Measure	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
U.S. producers	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	***	***	***	***	***

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 IV-2
Barium chloride: Apparent U.S. total market consumption based on quantity data, by source and period

* * * * * * *

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

Based on value

Table IV-6 and figure IV-3 present data on apparent U.S. consumption of the total market and U.S. market shares by value for barium chloride. The trends for apparent U.S. consumption of the total market by value follow the trends for apparent U.S. consumption of the total market by quantity discussed above.

Table IV-6
Barium chloride: Apparent U.S. total market consumption and market shares based on value data, by source and period

Value in 1,000 dollars; shares in percent

Source	Measure	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
U.S. producers	Value	***	***	***	***	***
India	Value	***	***	***	***	***
Nonsubject sources	Value	***	***	***	***	***
All import sources	Value	***	***	***	***	***
All sources	Value	***	***	***	***	***
U.S. producers	Share	***	***	***	***	***
India	Share	***	***	***	***	***
Nonsubject sources	Share	***	***	***	***	***
All import sources	Share	***	***	***	***	***
All sources	Share	***	***	***	***	***

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 IV-3
Barium chloride: Apparent U.S. total market consumption based on value data, by source and period

* * * * * * *

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

Apparent U.S. consumption of the merchant market

As previously noted, the domestic industry is a captive consumer of barium chloride.[13] As a result, data on apparent U.S. consumption of the merchant market is presented in this section.[14] U.S. producers' U.S. shipments include only commercial shipments, while U.S. importers' U.S. shipments are inclusive of commercial shipments, internal consumption, and transfers.[15] [16]

Based on quantity

Table IV-7 and figure IV-4 present data on apparent U.S. consumption of the merchant market and U.S. market shares by quantity for barium chloride. Apparent consumption from all sources, and consequently total apparent consumption, declined during 2018-20.

U.S. producers' market share was at *** percent in 2018, it decreased to *** percent in 2019, and then further decreased to *** percent in 2020, a decline of *** percentage points during 2018-20. U.S. producers' market share was lower in interim 2021 as compared to interim 2020.

As U.S. producers' market share decreased, India's market share increased. India's share was at *** percent in 2018, it increased to *** percent in 2019, and then further increased to *** percent in 2020, an increase of *** percentage points during 2018-20. India's market share was higher in interim 2021 as compared to interim 2020.

The market share of nonsubject sources was *** percent throughout the POI.

[13] See the "Captive consumption" section of Part III of this report for more information.

[14] App. C, table C-2 contains additional information on the merchant market.

[15] As previously noted, CPC is the only firm to submit a U.S. producer questionnaire to the Commission.

[16] U.S. importers' U.S. shipments do not include data on internal consumption, as no U.S. importer reported internal consumption. ***.

Table IV-7
Barium chloride: Apparent U.S. merchant market consumption and shares, based on quantity, by source and by period

Quantity in 1,000 pounds; Shares in percent

Source	Measure	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
U.S. producers	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	***	***	***	***	***

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.

Figure IV-4
Barium chloride: Apparent U.S. merchant market consumption and shares, based on quantity, by source and by period

* * * * * * *

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

Based on value

Table IV-8 and figure IV-5 present data on apparent U.S. consumption of the merchant market and U.S. market shares by value for barium chloride. The trends for apparent U.S. consumption of the merchant market by value follow the trends for apparent U.S. consumption of the merchant market by quantity discussed above.

Table IV-8
Barium chloride: Apparent U.S. merchant market consumption and market shares based on value data, by source and period

Value in 1,000 dollars; shares in percent

Source	Measure	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
U.S. producers	Value	***	***	***	***	***
India	Value	***	***	***	***	***
Nonsubject sources	Value	***	***	***	***	***
All import sources	Value	***	***	***	***	***
All sources	Value	***	***	***	***	***
U.S. producers	Share	***	***	***	***	***
India	Share	***	***	***	***	***
Nonsubject sources	Share	***	***	***	***	***
All import sources	Share	***	***	***	***	***
All sources	Share	***	***	***	***	***

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.

Figure IV-5
Barium chloride: Apparent U.S. merchant market consumption based on value data, by source and period

* * * * * * *

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

Part V: Pricing data

Factors affecting prices

Raw material costs

Domestic barium chloride is produced by crushing barite ore, mixing it with petroleum coke, and reacting it with hydrochloric acid in order to remove the byproduct hydrogen sulfide as a gas.[1] "When the resulting solution is evaporated, barium chloride crystals remain," which forms the crystalline form of barium chloride. To form anhydrous barium chloride, the crystalline form is reduced "by applying intense heat, which drives off the water that is molecularly bonded in the crystals."[2] CPC's raw materials as a share of COGS increased from *** percent in 2018 to *** percent in 2020, and was *** percent in January-September 2021.[3]

As shown in figure V-1, the average unit values (AUVs) for imports of ground natural barium sulfate (barite ore, or baryte) from China, Mexico, Morocco, and Vietnam varied throughout January 2018-December 2021, with the AUVs from Morocco showing a large spike in February 2019, and the AUVs from China and Vietnam showing the greatest variation over the period.[4] The greatest volume of imports of barium sulfate came from China, while the least came from Vietnam.

As shown in figure V-2, the producer price index of petroleum and coke products including coke oven products generally increased from the beginning of 2018 to mid-2018, then decreased through then end of 2020, then increased intermittently through the end of 2021.

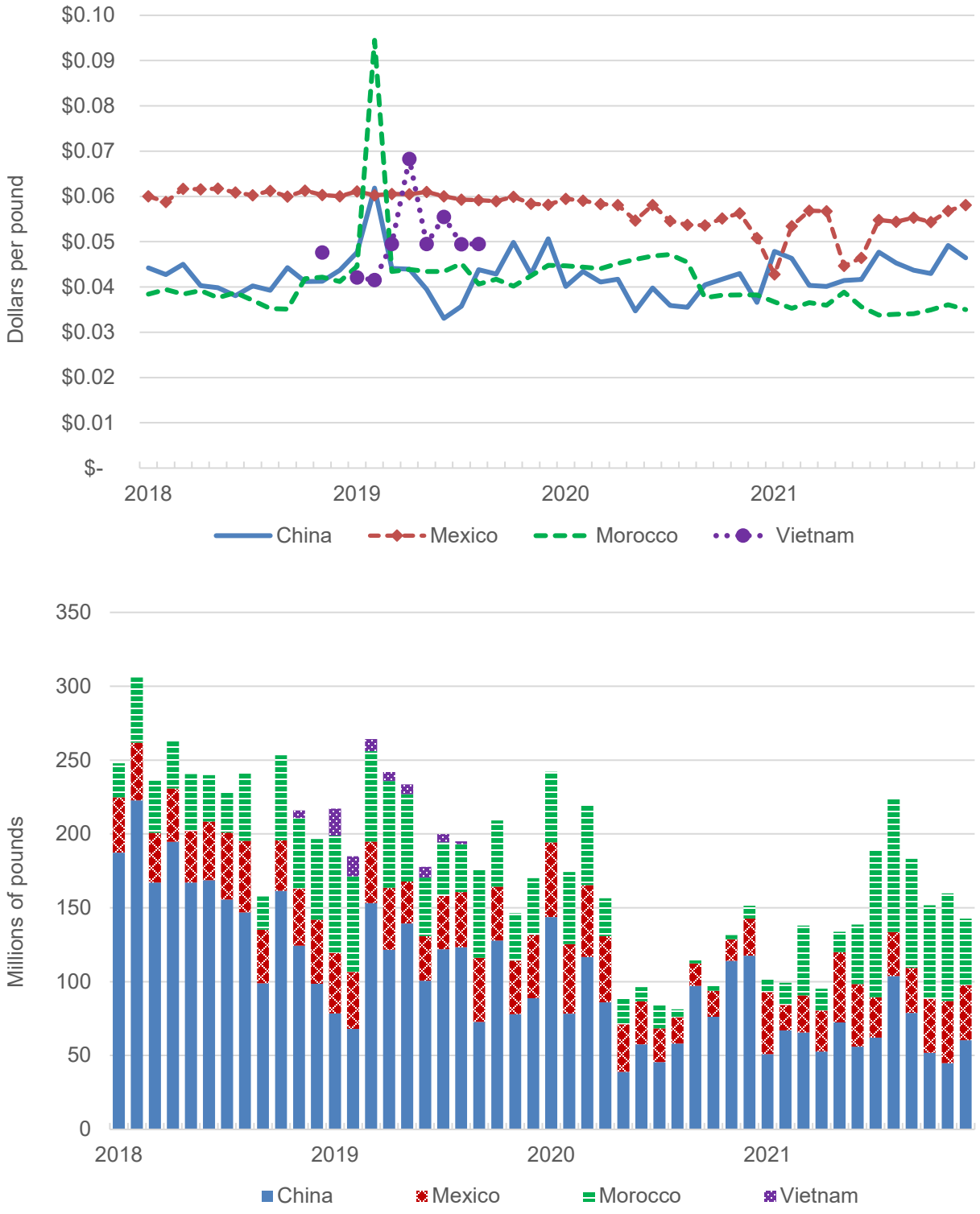
[1] Petitions, p. I-6; Conference transcript, pp. 15-16 (Bourdon).

[2] Ibid.

[3] CPC reported that "***." Petitions, p. I-18.

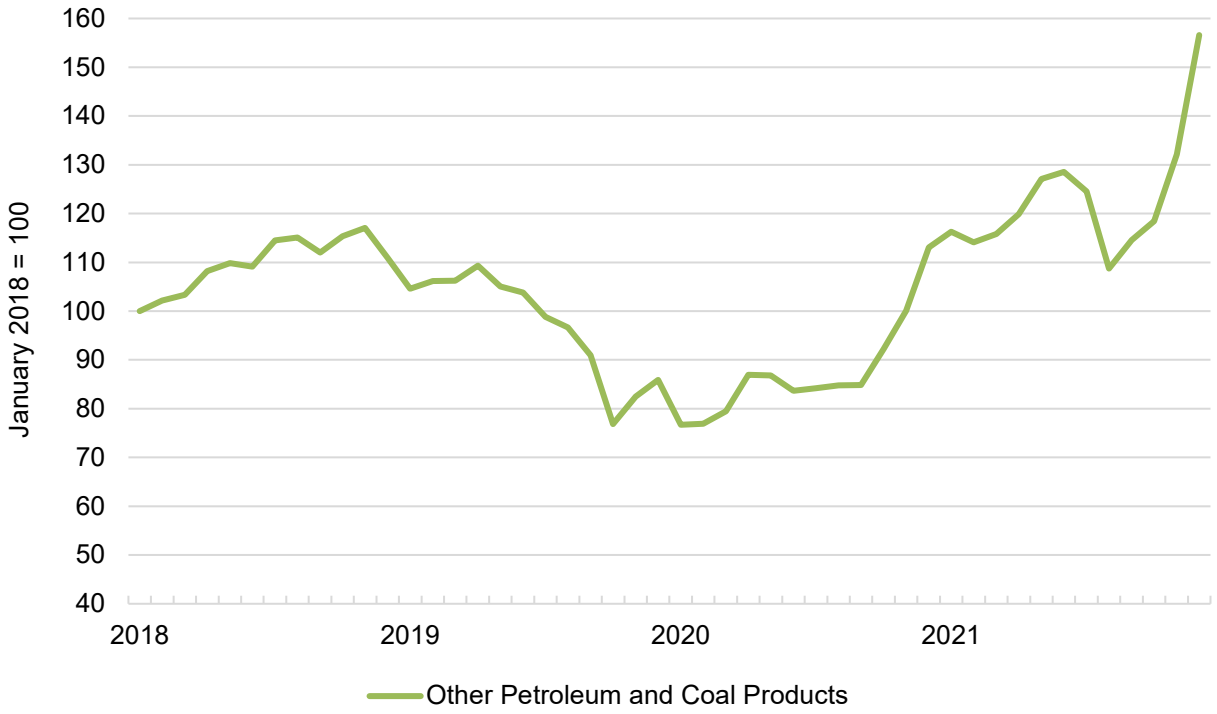
[4] In its postconference brief, CPC provided its cost data for barite ore, petroleum coke, and hydrochloric acid. It indicated that ***, and that it "***." CPC indicated that for its coke, it has a "***," and that ***. For its hydrochloric acid, it ***. See Petitioner's postconference brief, exh. 2 (Responses to Questions from Commission Staff) at att. A, and exh. 3 (Responses to Questions from Commission Staff via Email).

Figure V-1
Baryte imports: Average unit values and quantities of imports of ground barium natural barium sulfate (barytes) from China, Mexico, Morocco, and Vietnam, monthly, January 2018–December 2021



Source: USITC Dataweb, HTS statistical reporting number 2511.10.1000, accessed February 10, 2022.

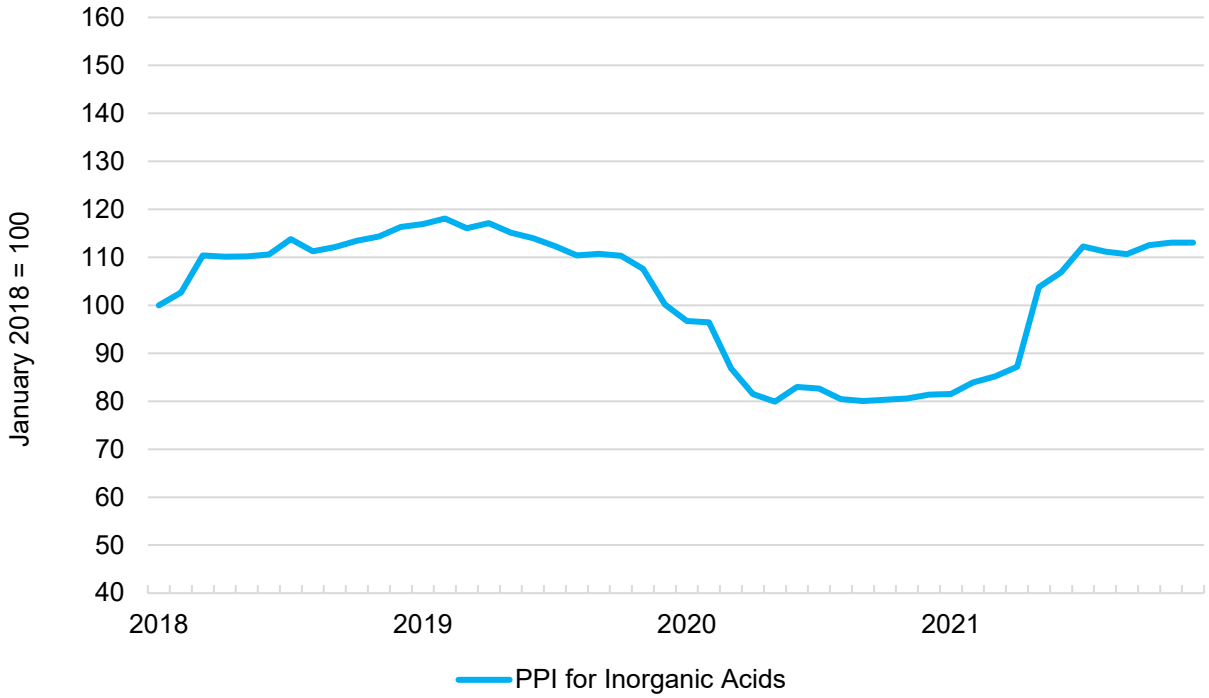
Figure V-2
Petroleum coke: Producer Price Index by Commodity: Fuels and Related Products and Power: Other Petroleum and Coal Products, Including Coke Oven Products, Not Elsewhere Classified, Monthly, Not Seasonally Adjusted, January 2018–December 2021



Source: U.S. Energy Information Administration, https://fred.stlouisfed.org/series/WPU058103, retrieved February 10, 2022.

As shown in figure V-3, the prices for inorganic acids (including hydrochloric acid) were generally stable throughout 2018 before decreasing in 2019 and 2020 and increasing again in 2021.

Figure V-3
Inorganic acids: Producer Price Index by Commodity: Chemicals and Allied Products: Inorganic Acids, including Hydrochloric Acid, Sulfuric Acid, and Others, Monthly, Not Seasonally Adjusted, January 2018-December 2021

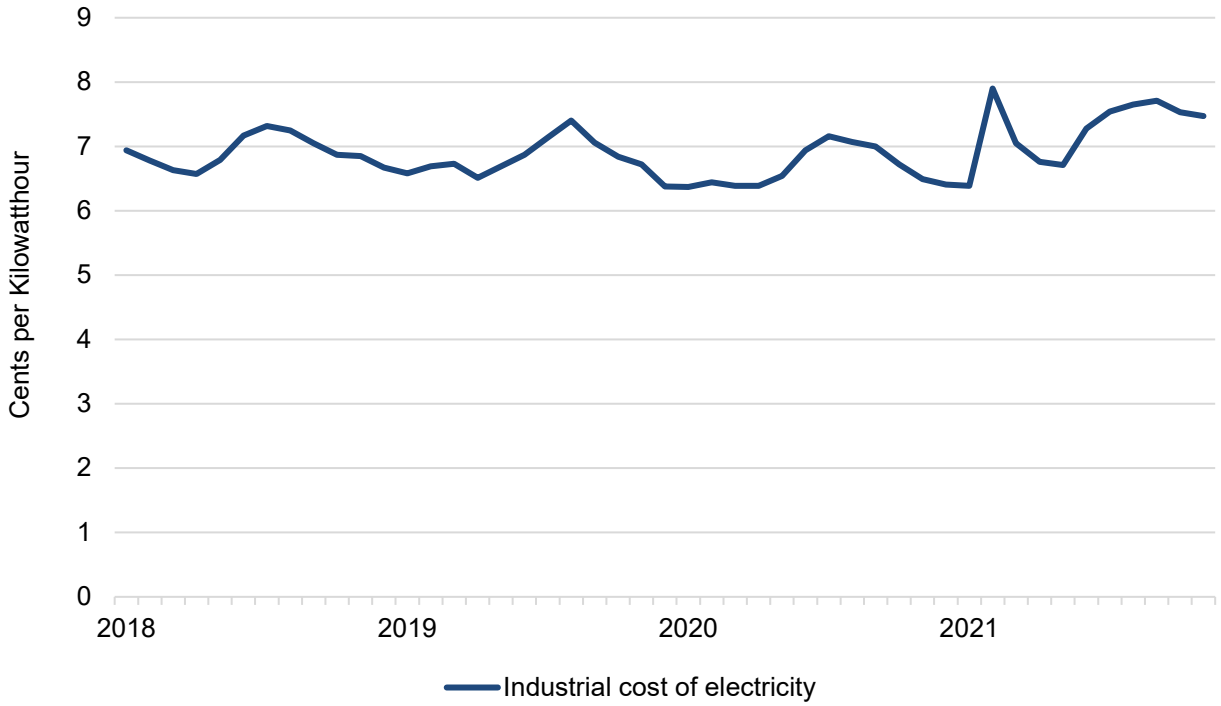


Source: FRED, https://fred.stlouisfed.org/series/WPU0613020T#0, retrieved February 7, 2022.

Energy costs

As shown in figure V-4, the average industrial retail price of electricity in the United States remained fairly stable throughout the period of investigation, with the most volatility during the beginning of 2021.

Figure V-4
Electricity price: Average retail industrial price of electricity in the United States, monthly, January 2018-November 2021



Source: U.S. Energy Information Administration, https://www.eia.gov/electricity/data/browser/#/topic/7?agg=2, retrieved February 7, 2022.

Transportation costs to the U.S. market

Transportation costs for barium chloride shipped from India to the United States averaged 15 percent during 2020. These estimates were derived from official import data and represent the transportation and other charges on imports.[5]

U.S. inland transportation costs

Almost all responding firms (including ***) reported that they typically arrange transportation to their customers. Only one firm, ***, reported that its customers typically arrange transportation. U.S. producer CPC ***, while importers reported inland transportation costs ranging from 2 percent to 20 percent, for a simple average of 7.6 percent.

[5] The estimated transportation costs were obtained by subtracting the customs value from the c.i.f. value of the imports for 2020 and then dividing by the customs value based on the HTS statistical reporting number 2827.39.4500.

Pricing practices

Pricing methods

As shown in table V-1, U.S. producer CPC reported setting prices ***. Most importers reported setting prices using transaction-by-transaction negotiations, though one firm (***) reported also using contracts, and another firm (***) reported setting prices based on "market value."

Table V-1
Barium chloride: U.S. producers' and importers' reported price setting methods, count

Method	U.S. producers	Importers
Transaction-by-transaction	***	10
Contract	***	1
Set price list	***	0
Other	***	1
Responding firms	1	11

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

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

U.S. producer CPC reported selling *** of its barium chloride under *** contract, and the remaining amount in the spot market (table V-2). All six responding importers reported selling in the spot market, while *** reported selling via *** contract. Cumulatively, importers reported selling ***, roughly ***, and the remaining amount in the spot market.

Table V-2
Barium chloride: U.S. producers' and importers' shares of U.S. commercial shipments by type of sale, 2020

Share in percent

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

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

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

U.S. producer CPC reported that ***. ***. Even

though *** reported selling by short-term contract in 2020, importers reported that their short term-contracts typically averaged “30-60” days. Three importers reported that for these contracts, prices could not be renegotiated during the contract period, the contracts fixed both price and quantity, and the contracts were not indexed to raw material costs. For both annual and long-term contracts, *** reported that ***. ***. No firm identified any indexes used in its contract sales.

Sales terms and discounts

Most firms, including ***, typically quote prices on a delivered basis. *** also reported quoting prices on an f.o.b. basis, and *** reported quoting prices on both a delivered and f.o.b. basis. In terms of discounts, CPC reported ***. Most importers reported having no specific discount policy, though two firms (***) offer quantity discounts, and one firm (***) offers discounts on total volume purchased.

Price data

The Commission requested U.S. producers and importers to provide quarterly data for the total quantity and f.o.b. value of the following barium chloride products shipped to unrelated U.S. customers during January 2018-September 2021.

Product 1.--Crystalline barium chloride

Product 2.--Anhydrous barium chloride

U.S. producer CPC and nine importers 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 U.S.

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

producers' U.S. shipments of barium chloride and *** percent of U.S. shipments of subject imports from India in 2020.[7]

Price data for products 1 and 2 are presented in tables V-3 to V-4 and figures V-5 to V-6.

Table V-3
Barium chloride: Weighted-average f.o.b. prices and quantities of domestic and imported product 1 and margins of underselling/(overselling), by quarter, January 2018-September 2021

Price in dollars per pound, quantity in pounds (dry weight), margin in percent.

Period	U.S. price	U.S. quantity	India price	India quantity	India margin
2018 Q1	***	***	***	***	***
2018 Q2	***	***	***	***	***
2018 Q3	***	***	***	***	***
2018 Q4	***	***	***	***	***
2019 Q1	***	***	***	***	***
2019 Q2	***	***	***	***	***
2019 Q3	***	***	***	***	***
2019 Q4	***	***	***	***	***
2020 Q1	***	***	***	***	***
2020 Q2	***	***	***	***	***
2020 Q3	***	***	***	***	***
2020 Q4	***	***	***	***	***
2021 Q1	***	***	***	***	***
2021 Q2	***	***	***	***	***
2021 Q3	***	***	***	***	***

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

Note: Product 1: Crystalline barium chloride.

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

Table V-4
Barium chloride: Weighted-average f.o.b. prices and quantities of domestic and imported product 2 and margins of underselling/(overselling), by quarter, January 2018-September 2021

Price in dollars per pound, quantity in pounds (dry weight), margin in percent.

Period	US price	US quantity	India price	India quantity	India margin
2018 Q1	***	***	***	***	***
2018 Q2	***	***	***	***	***
2018 Q3	***	***	***	***	***
2018 Q4	***	***	***	***	***
2019 Q1	***	***	***	***	***
2019 Q2	***	***	***	***	***
2019 Q3	***	***	***	***	***
2019 Q4	***	***	***	***	***
2020 Q1	***	***	***	***	***
2020 Q2	***	***	***	***	***
2020 Q3	***	***	***	***	***
2020 Q4	***	***	***	***	***
2021 Q1	***	***	***	***	***
2021 Q2	***	***	***	***	***
2021 Q3	***	***	***	***	***

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

Note: Product 2: Anhydrous barium chloride.

Figure V-5
Barium chloride: Weighted-average prices and quantities of domestic and imported product 1, by quarter, January 2018-September 2021

* * * * * * *

* * * * * * *

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

Note: Product 1: Crystalline barium chloride.

Figure V-6
Barium chloride: Weighted-average prices and quantities of domestic and imported product 2, by quarter, January 2018-September 2021

* * * * * * *

* * * * * * *

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

Note: Product 2: Anhydrous barium chloride.

Price trends

In general, domestic prices increased during January 2018-September 2021, while import prices fluctuated but were slightly higher in the third quarter of 2021 than the first quarter of 2018. Table V-5 summarizes the price trends, by country and by product. As shown in the table, domestic prices increased by *** percent for product 1 and *** percent for product 2 between the first quarter of 2018 and the third quarter of 2021. Import prices were *** percent higher in the third quarter of 2021 than the first quarter of 2018 for product 1. There were too few instances of quarterly price data for subject imported product 2 to make a trend analysis, though the price of subject imports for product 2 in the third quarter of 2021 was *** percent higher than the second quarter of 2018 (the first quarter in which import prices for product 2 were reported).

Table V-5
Barium chloride: Summary of price data, by product and source

Volume in pounds (dry weight), price in dollars per pound

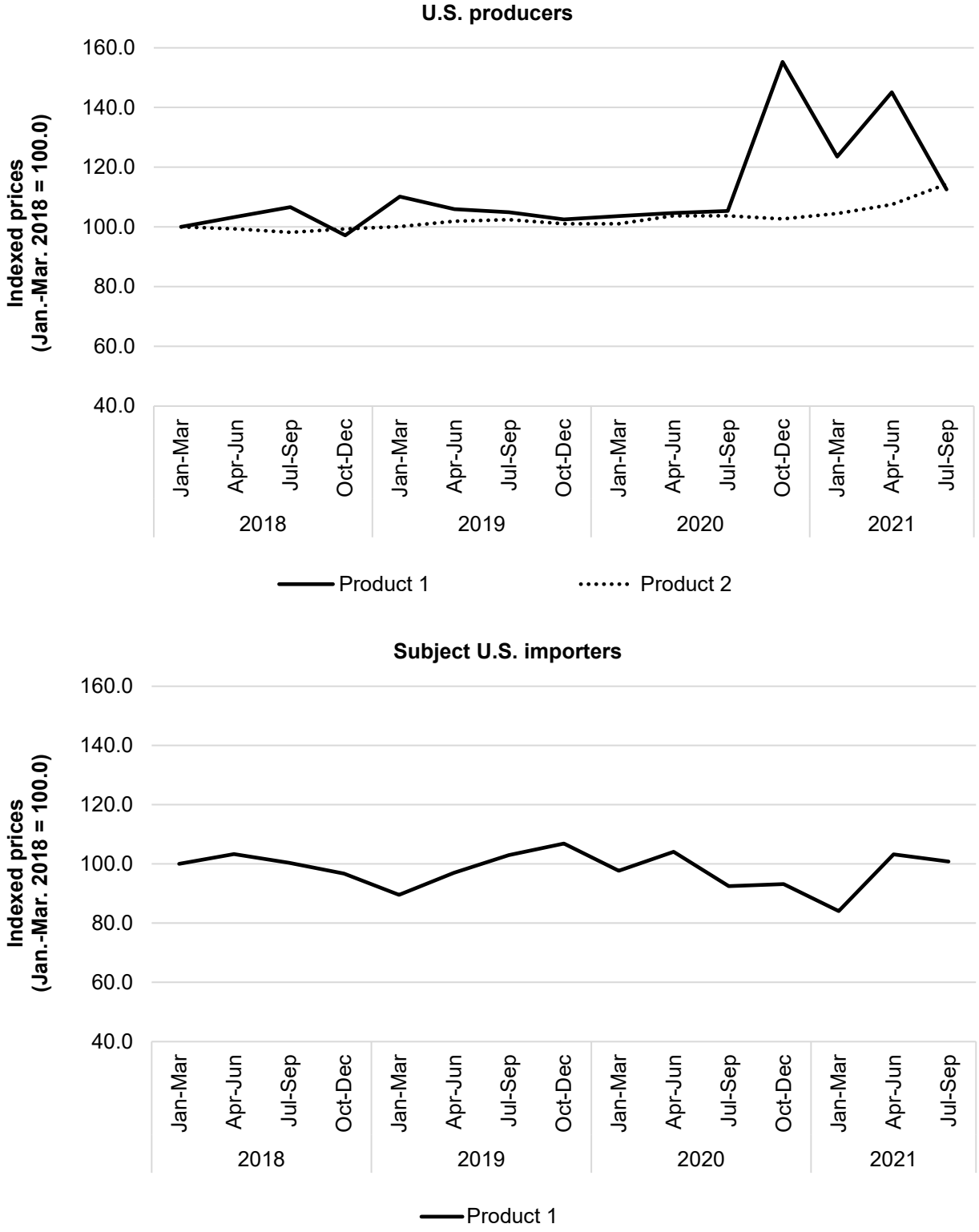
Product	Source	Number of quarters	Quantity	Low price	High price	First quarter price	Last quarter price	Percent change over period
Product 1	United States	***	***	***	***	***	***	***
Product 1	India	***	***	***	***	***	***	***
Product 2	United States	***	***	***	***	***	***	***
Product 2	India	***	***	***	***	***	***	***

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

Note: Percent change column is percentage change from the first quarter 2018 to the last quarter in 2021.

As shown in figure V-7, prices for domestic product 1 remained relatively stable until the fourth quarter of 2020, at which point prices increased by more than ***, and ended up *** percent higher at the end of the period than the beginning of the period. Subject import prices for product 1 remained comparatively more stable throughout the period of investigation.

Figure V-7
Barium chloride: Indexed U.S. producer and importer prices, by quarter, January 2018-September 2021



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

Price comparisons

As shown in table V-6, prices for barium chloride imported from India were below those for U.S.-produced product in all 22 instances (approximately *** pounds). The margin of underselling for product 1 was *** percent, and the margin of underselling for product 2 was *** percent, for a total combined average margin of 30.6 percent. There were no quarterly instances of overselling.

Table V-6
Barium chloride: Instances of underselling and overselling and the range and average of margins, by product

Quantity in 1,000 pounds; margin in percent

Product	Type	Number of quarters	Quantity	Average margin	Min margin	Max margin
Product 1	Underselling	***	***	***	***	***
Product 2	Underselling	***	***	***	***	***
Total	Underselling	22	***	30.6	9.0	62.5
Product 1	Overselling	---	---	---	---	---
Product 2	Overselling	---	---	---	---	---
Total	Overselling	---	---	---	---	---

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

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

Lost sales and lost revenue

The Commission requested that U.S. producers of barium chloride report purchasers with which they experienced instances of lost sales or revenue due to competition from imports of barium chloride from India during January 2018-September 2021. The responding U.S. producer, CPC, reported that since January 1, 2018 ***. CPC ***, and in those allegations identified five firms with which it lost sales, ***. CPC identified one firm with which it lost revenue: ***.

Staff contacted eight purchasers and received responses from seven purchasers.[8] Responding purchasers reported purchasing approximately *** million pounds of barium chloride during January 2018-September 2021 (table V-7).

[8] The Commission received responses from ***.

Table V-7
Barium chloride: Purchasers' reported purchases and imports, by firm and by source, January 2018-September 2021

Quantity in 1,000 pounds, change in shares in percentage points

Purchaser	Domestic quantity	Subject quantity	All other quantity	Change in domestic share	Change in subject country share
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
All firms	***	***	***	▼(14.3)	▲14.9

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

Note: The 'all other' category includes nonsubject sources and unknown sources. 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. Period changes preceded by a "▲" represent an increase, while period changes preceded by a "▼" represent a decrease.

During 2020, responding purchasers purchased and imported 34.0 percent from U.S. producers, 65.9 percent from India, and less than percent from nonsubject and "unknown source" countries. Purchasers were asked about changes in their purchasing patterns from different sources since 2018. Of the responding purchasers, three reported decreasing purchases from domestic producers, none reported increasing such purchases, one reported no change, one reported fluctuating purchases, and one did not purchase any domestic product (table V-8).[9] One purchaser reported decreasing purchases of Indian barium chloride, two reported increasing such purchases, one reported no change, one reported fluctuating purchases, and one did not purchase any domestic product.

[9] Of the seven responding purchasers, one purchaser (***) indicated that it did not know the source of the barium chloride it purchased. It identified the suppliers for these purchases as ***. As noted above, ***.

Table V-8
Barium chloride: Count of changes in reported purchase patterns from the United States, subject, and nonsubject sources

Count in number of reporting firms

Source of purchases	Decreased	Increased	Constant	Fluctuated	Did not purchase
United States	3	0	1	1	1
India	1	2	1	1	1
All other sources	1	0	0	0	3
Sources unknown	0	0	0	0	3

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

Explanations for decreasing purchases of domestic product included non-competitive domestic pricing, a lack of availability in 2019 and price, and a decrease in overall demand for end products in the global market due to the COVID-19 pandemic. Explanations for increasing purchases of imports from India included more competitive pricing, increased customer demand, and lower pricing on barium chloride sourced from India. The sole explanation for decreasing purchases of imports from India was a decrease in overall demand for end products in the global market due to the COVID-19 pandemic.

Of the seven responding purchasers, five reported that, since 2018, they had purchased imported barium chloride from India instead of U.S.-produced product. All five of these purchasers reported that subject import prices were lower than U.S.-produced product, and four of them reported that price was a primary reason for the decision to purchase imported product rather than U.S.-produced product. All four of these purchasers estimated the quantity of barium chloride from India purchased instead of domestic product; quantities ranged from *** pounds to *** million pounds, for a total of 6.8 million pounds (table V-9).[10] The sole purchaser that identified non-price reasons for purchasing imported rather than U.S.-produced product (***), reported a desire to not be sole-sourced in order to have more security of supply.

[10] Petitioner CPC argues that it had experienced "numerous instances of lost sales and lost revenue as the result of unfair competition from dumped and subsidized imports of subject merchandise from India, {and that} altogether, such losses approximated $*** during the period of investigation." Petitions, p. I-23.

Table V-9
Barium chloride: Purchasers' responses to purchasing subject imports instead of domestic product, by firm

Quantity in 1,000 pounds

Purchaser	Purchased subject imports instead of domestic	Imports priced lower	Choice based on price	Quantity	Explanation
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
All firms	Yes--5; No--2	Yes--5; No--0	Yes--4; No--1	6,826	NA

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

Of the six responding purchasers, none reported that U.S. producers had reduced prices in order to compete with lower-priced imports from India, while four reported that they had not; two reported that they did not know (table V-10).

Table V-10
Barium chloride: Purchasers' responses to U.S. producer price reductions, by firm

Count in number of firms reporting; price reductions in percent

Purchaser	Reported producers lowered prices	Estimated percent of U.S. price reduction	Explanation
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
Total / average	Yes--0; No--4; Don't Know--2	***	NA

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

In responding to the lost sales lost revenue survey, some purchasers provided additional information. *** reported the following:

"***."

*** reported the following:

"***."

*** reported the following:

"***."

Part VI: Financial experience of the U.S. producer

Background[1]

A single U.S. producer, CPC, reported financial results and related information on its U.S. barium chloride manufacturing operations. CPC's barium chloride operations are conducted as part of its barium business unit, which also includes the production and sale of other barium-related products.[2]

With regard to changes in its barium chloride operations during the period, CPC reported that ***.[3] ***.[4] ***.[5]

Operations on Barium chloride

Table VI-1 and table VI-2 present income-and-loss data for the U.S. producer's barium chloride operations and corresponding changes in average per pound values (AUVs), respectively.[6]

[1] The following abbreviations may be 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. 45 (McCall). CPC, a privately held company, reported its financial results based on U.S. GAAP and on a calendar-year basis. Conference transcript, pp. 13-14 (Bourdon). CPC U.S. producer questionnaire responses to question III-2.

[3] CPC U.S. producer questionnaire response to II-2a.

[4] Email with attachment from Counsel of behalf of CPC to USITC staff, February 7, 2022. With regard to how specific aspects of CPC's barium chloride production were affected ***. Ibid.

[5] CPC U.S. producer questionnaire response to II-2a. Email with attachment from Counsel of behalf of CPC to USITC staff, February 7, 2022.

[6] The Commission's variance analysis is generally more meaningful when product mix remains the same throughout the period. While barium chloride, as a physical product, is not highly differentiated,

(*continued*...)

Table VI-1
Barium chloride: Results of total market operations of U.S. producer CPC, by item and period

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

Item	Measure	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
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	***	***	***	***	***
Estimated cash flow from operations	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 or (loss)	Ratio to NS	***	***	***	***	***
SG&A expenses	Ratio to NS	***	***	***	***	***
Operating income or (loss)	Ratio to NS	***	***	***	***	***
Net income or (loss)	Ratio to NS	***	***	***	***	***

Table continued.

CPC indicated that there are differences among customers in terms of product specifications. Conference transcript, pp. 47-48 (Ingram, Bourdon). With regard to how average per pound barium chloride sales value may have been impacted by changes in customer mix during the period, CPC reported that ***. Petitioner's postconference brief, exh. 2, p. 5. As noted below, CPC's commercial export sales to ***. While barium chloride product mix, in a traditional sense, may not have changed substantially during the period, changes in CPC's *** to reduce the utility of a variance analysis. Accordingly, a variance analysis is not presented here.

Table VI-1 continued
Barium chloride: Results of total market operations of the U.S. producer CPC, by item and period

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

Item	Measure	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
COGS: Raw materials	Share	***	***	***	***	***
COGS: Direct labor	Share	***	***	***	***	***
COGS: Other factory	Share	***	***	***	***	***
COGS: Total	Share	***	***	***	***	***
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: Ratios represent the ratio to net sales value and shares represent the share of COGS.

Table VI-2
Barium chloride: Changes in U.S. producer CPC's total market AUVs between comparison periods

Changes in percent

Item	2018-20	2018-19	2019-20	Jan-Sep 2020-21
Total net sales	***	***	***	***
COGS: Raw materials	***	***	***	***
COGS: Direct labor	***	***	***	***
COGS: Other factory	***	***	***	***
COGS: Total	***	***	***	***

Table continued.

Table VI-2 continued
Barium chloride: Changes in U.S. producer CPC's total market AUVs between comparison periods

Changes in dollars per pound

Item	2018-20	2018-19	2019-20	Jan-Sep 2020-21
Total net sales	***	***	***	***
COGS: Raw materials	***	***	***	***
COGS: Direct labor	***	***	***	***
COGS: Other factory	***	***	***	***
COGS: Total	***	***	***	***
Gross profit or (loss)	***	***	***	***
SG&A expenses	***	***	***	***
Operating income or (loss)	***	***	***	***
Net income or (loss)	***	***	***	***

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

Net sales

Barium chloride sales *** represent commercial sales (*** percent of total sales value) with internal consumption (*** percent) accounting for the remainder.[7] *** transfer sales to related firms were reported. Given the *** of commercial sales, a single line item for sales is presented in the relevant tables above.[8] [9]

[7] CPC's barium chloride internal consumption supports downstream production of ***. CPC U.S. producer questionnaire response to II-11a (note 1). CPC's average per pound value of internal consumption ranged from *** percent (January-September 2021) to *** percent (2018) of corresponding average commercial sales value. ***. Email with attachment from Counsel on behalf of CPC to USITC staff, February 7, 2022.

[8] While commercial sales *** reflect U.S. sales, export sales, ***, accounted for a relatively large share in 2018, *** during the full-year period to *** in 2020, and then *** in January-September 2021. Barium chloride export sales accounted for *** percent of commercial sales (value basis) in 2018, *** percent in 2019, *** percent in 2020, and *** percent in January-September 2021.

[9] Appendix G presents the U.S. producer's financial results specific to merchant market operations.

Quantity

On an overall basis, barium chloride sales quantity declined throughout the period with *** categories of commercial sales (U.S. commercial sales and exports) declining during the full-year period with the decline in exports *** on a percentage basis. In contrast and while the quantity of internal consumption fluctuated (***), these fluctuations had a *** impact on the directional pattern of overall barium chloride sales quantity given internal consumption's relatively *** share.

In January-September 2021, exports ***, having declined to *** in 2020, while U.S. commercial sales quantity was *** percent lower in January-September 2021 compared to January-September 2020. Overall commercial sales quantity (combined U.S. and export commercial sales) was *** percent lower in January-September 2021 compared to January-September 2020. With regard to the pattern of its export sales in general, CPC stated ***.[10]

Value

On an overall basis, barium chloride average per pound sales value increased throughout the period (see table VI-2).[11] Since average commercial export sales value was *** compared to corresponding U.S. commercial sales value, the *** in export sales quantity noted above effectively *** in overall average sales value during the full-year period. Conversely, *** in January-September 2021, they dampened the overall *** in average sales value.[12]

As shown in table VI-2, changes in overall average sales value and average raw material cost were directionally the same during only parts of the period, which is generally consistent

[10] Ibid.

[11] Average sales values for U.S. commercial sales and export sales *** increased during the period. The *** subcategory of barium chloride whose average value declined during the period was internal consumption, which was *** lower on an average per pound basis in January-September 2021 compared to January-June 2020.

[12] ***. Ibid.

with the reported absence of a direct (or formulaic) passthrough of the primary raw material cost in sales value.[13]

Cost of goods sold and gross profit or loss

Raw materials

Total barium chloride raw material costs reflect barite ore (*** percent of 2020 raw material cost), followed by hydrochloric acid (*** percent), petroleum coke (*** percent), and other material inputs (collectively accounting for *** percent.[14] [15] As noted previously, barium sulfide solution is produced with processed barite ore and petroleum coke that serves as the feedstock for both barium chloride and barium carbonate and represents the first primary step to produce barium chloride. The second primary step is the reaction of the barium sulfide solution with hydrochloric acid, followed by evaporation (to produce barium chloride crystal) and a further drying step (to produce the anhydrous form of barium chloride crystal).[16]

For most of the period, total raw material cost was the largest component of COGS, ranging from *** percent (January-September 2021) of total COGS to *** percent (full-year and interim 2020). On an average per pound basis, raw material cost fluctuated: declining *** percent in 2019, increasing *** percent in 2020, and lower by *** percent in January-September 2021 compared to January-September 2020.

[13] Conference transcript, p. 49 (McCall).

[14] CPC U.S. producer questionnaire response to III-9d. Other material inputs were identified as ***. Ibid.

[15] ***. CPC U.S. producer questionnaire response to III-6. ***. Email with attachment from Counsel on behalf of CPC to USITC staff, February 7, 2022.

[16] Hydrogen sulfide gas is produced when barium sulfide solution is reacted with hydrochloric acid. Conference transcript, p. 15 (Bourdon). ***. Email with attachment from Counsel on behalf of CPC to USITC staff, February 7, 2022. In a response to a staff conference question regarding the cost treatment of hydrogen sulfide gas, which was referred to as a byproduct in staff conference testimony, CPC stated ***. Petitioner's postconference brief, exh. 2, p. 6.

Based on information submitted in its postconference brief, CPC appears to have a diversified source of supply for all of its primary inputs.[17] With regard to raw material purchasing in general, a CPC company official noted that potential supply disruptions during the period were anticipated and the company adjusted its purchasing patterns to account for extended lead times.[18] According to CPC, ***.[19]

Direct labor and other factory costs

Direct labor and other factory costs were the third and second largest components of COGS, respectively, for most of the period, direct labor ranging from *** percent of total COGS (2018) to *** percent (full-year and interim 2020) and other factory costs ranging from *** percent (full-year and interim 2020) to *** percent (January-September 2021).

As shown in table VI-1, the individual share of COGS accounted for by direct labor and other factory costs moved within relatively wide ranges, the fluctuations in other factory costs being more pronounced. With regard to this pattern in general, CPC stated that it ***.[20]

In terms of minimizing average per pound barium chloride COGS, capacity utilization was noted as a significant factor.[21] Specifically, CPC stated ***

[17] Petitioner's postconference brief, exh. 3, pp. 2-4. ***. Ibid.

[18] Conference transcript, p. 50 (McCall).

[19] Petitioner's postconference brief, exh. 2, p. 6. ***. USITC auditor notes (preliminary-phase).

[20] Ibid. ***. CPC U.S. producer questionnaire response to question III-10. Petitioner's postconference brief, exh. 2, p. 7.

[21] Conference transcript, p. 51 (Bourdon).

***.[22] Table VI-2 shows that other factory costs on a per pound basis declined during the full-year period and then was *** percent higher in January-September 2021 compared to January-September 2020.[23] In contrast, average per pound direct labor cost increased during the period and then was *** percent lower in January-September 2021 compared to January-September 2020.

Gross profit or loss

While remaining positive throughout the period, CPC's barium chloride gross profit fluctuated on an absolute basis. Notwithstanding the decline in total barium chloride sales quantity and value in 2019, total gross profit increased in that year, reflecting higher average per pound sales value and lower average raw material cost and conversion costs (combined direct labor cost and other factory costs), which in turn yielded a relatively large expansion in gross profit ratio (total gross profit divided by total sales). In 2020, in conjunction with a continued decline in total sales (quantity and value) and a contraction in gross profit ratio, reflecting a larger percentage increase in average COGS than the corresponding increase in average sales value (see table VI-2), total gross profit declined.[24] At the end of the period, higher average COGS in January-September 2021 compared to January-September 2020 exceeded the smaller increase in average sales value, resulting in a *** contraction in gross profit ratio, to ***. The higher average COGS in January-September 2021 reflects the previously-noted *** in average other factory costs, which more than offset the corresponding *** in average raw material cost and direct labor cost.

[22] Petitioner's postconference brief, exh. 2, p. 7. ***. Ibid.

[23] The *** average per pound other factory costs in January-September 2021 shown in table VI-1 coincides with the period's *** level of barium chloride production and capacity utilization (see table III-3). To the extent that barium chloride capacity utilization declined throughout the period, the reduction in average per pound other factory costs during the full-year period generally appears to reflect *** (see footnote 4).

[24] With regard to the impact of COVID-19 on its financial performance in general, ***. CPC U.S. producer questionnaire response to question III-18.

SG&A expenses and operating income or loss

Total SG&A expenses assigned to barium chloride operations increased to their highest full-year level in 2019, declined to their lowest level in 2020, and were lower in January-September 2021 compared to January-September 2020 (see table VI-1). While total SG&A expenses were somewhat higher in 2019, the relatively large increase in corresponding SG&A expense ratio (total SG&A expenses divided by total sales) primarily reflects the decline in total sales value. Similarly and notwithstanding the decline in total SG&A expenses in 2020, the SG&A expense ratio's further increase in that year, to its highest level of the period, reflects a continued decline in total sales value.

While the SG&A expense ratio was at its lowest level in 2018, it exceeded the corresponding gross profit ratio, resulting in an operating loss. In contrast, the gross profit ratio's previously-noted expansion in 2019 more than offset the increase in SG&A expense ratio, yielding operating income. In conjunction with a contraction in gross profit ratio, to a level *** than corresponding SG&A expense ratio, 2020 operating profit was ***. In January-September 2021 compared to January-September, the transition back to an operating loss primarily reflects the gross profit ratio's contraction to ***.

Interest expense, other expenses and income, and net income or loss

Directionally, barium chloride operating and net results shared the same pattern in terms of relative improvement in 2019, followed by decline in 2020. In contrast, the pattern diverged at the end of the period with operating results declining to a loss in January-September 2021, while net income was *** higher in January-September 2021 compared to January-September 2020. In general, the higher level of net income, which was positive throughout the period, reflects ***. In January-September 2021, the *** in the level of net income primarily reflects a ***.[25]

[25] ***. Email with attachment from Counsel on behalf of CPC to USITC staff, February 7, 2022.

Capital expenditures, R&D expenses, total net assets and return on assets

Table VI-3 presents the U.S. producer's capital expenditures, R&D expenses, total net assets and corresponding ROA, respectively.[26] Table VI-4 presents corresponding narrative descriptions of the U.S. producer's capital expenditures and R&D expenses.

Table VI-3
Barium chloride: Capital expenditures, R&D expenses, net assets, and ROA of the U.S. producer CPC, by period

Value in 1,000 dollars

Item	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
Capital expenditures	***	***	***	***	***
R&D expenses	***	***	***	***	***
Net assets	***	***	***	***	***
Return on assets	***	***	***	***	***

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

Table VI-4
Barium chloride: Narrative descriptions of the U.S. producer CPC's capital expenditures and R&D expenses

Firm	Narrative
Capital expenditures	***
R&D expenses	***

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

Capital and investment

The Commission requested the U.S. producer to describe any actual or potential negative effects of imports of barium chloride from India on its growth, investment, ability to raise capital, development and production efforts, or the scale of capital investments. Table VI-5 presents the effects reported and table VI-6 provides the U.S. producer's narrative descriptions.

[26] ROA is calculated here as operating income divided by total assets. With respect to a company's overall operations, staff notes that a total asset value (i.e., the bottom line value on the asset side of a company's balance sheet) reflects an aggregation of a number of current and non-current assets, which, in many instances, are not product specific. The ability of a U.S. producer to assign total asset values to discrete product lines affects the meaningfulness of calculated operating return on net assets.

Table VI-5
Barium chloride: Count indicating actual and anticipated negative effects of imports from subject sources on investment, growth, and development since January 1, 2018, by effect

Number of firms reporting

Effect	Category	Count
Cancellation, postponement, or rejection of expansion projects	Investment	***
Denial or rejection of investment proposal	Investment	***
Reduction in the size of capital investments	Investment	***
Return on specific investments negatively impacted	Investment	***
Other investment effects	Investment	***
Any negative effects on investment	Investment	***
Rejection of bank loans	Growth	***
Lowering of credit rating	Growth	***
Problem related to the issue of stocks or bonds	Growth	***
Ability to service debt	Growth	***
Other growth and development effects	Growth	***
Any negative effects on growth and development	Growth	***
Anticipated negative effects of imports	Future	***

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

Table VI-6
Barium chloride: Narratives relating to actual and anticipated negative effects of imports on investment, growth, and development, since January 1, 2018

Item	Firm name and accompanying narrative response
***	***
***	***
***	***
***	***
***	***

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

Part VII: Threat considerations and information on nonsubject countries

Section 771(7)(F)(i) of the Act (19 U.S.C. § 1677(7)(F)(i)) provides that—

> *In determining whether an industry in the United States is threatened with material injury by reason of imports (or sales for importation) of the subject merchandise, the Commission shall consider, among other relevant economic 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 IV* and *V*; and information on the effects of imports of the subject merchandise on U.S. producers' existing development and production efforts is presented in *Part VI*. Information on inventories of the subject merchandise; foreign producers' operations, including the potential for "product-shifting;" any other threat indicators, if applicable; and any dumping in third-country markets, follows. Also presented in this section of the report is information obtained for consideration by the Commission on nonsubject countries.

[2] Section 771(7)(F)(iii) of the Act (19 U.S.C. § 1677(7)(F)(iii)) further provides that, in antidumping investigations, ". . . the Commission shall consider whether dumping in the markets of foreign countries (as evidenced by dumping findings or antidumping remedies in other WTO member markets against the same class or kind of merchandise manufactured or exported by the same party as under investigation) suggests a threat of material injury to the domestic industry."

The industry in India

The Commission issued foreign producers' or exporters' questionnaires to 22 firms believed to produce and/or export barium chloride from India.[3] Usable responses to the Commission's questionnaire were received from two firms: Chaitanya Chemicals ("Chaitanya") and Shri Shanti Laboratories ("Shri Shanti"). These firms' exports to the United States accounted for *** percent of U.S. imports of barium chloride from India in 2020.[4] According to estimates requested of the responding producers in India, the production of barium chloride in India reported in questionnaires accounts for approximately *** percent of overall production of barium chloride in India.[5] Table VII-1 presents information on the barium chloride operations of the responding producers and exporters in India.[6] [7] [8]

[3] These firms were identified in the petitions, industry research, and previous and related title VII investigations on barium chloride.

[4] Chaitanya estimated that ***. Data from responses to the U.S. importer questionnaire ***. U.S. importers reported ***. Commission staff ***.

[5] Shri Shanti reported that ***. Correspondence with ***, February 1, 2022, EDIS #762319. Chaitanya ***.

[6] Chaitanya reported ***. The Commission ***. The Commission also ***.

[7] Shri Shanti reported ***. U.S. importer ***. Correspondence with ***, January 19, 2022, EDIS #761626.

[8] Three firms responding to the U.S. importer questionnaire reported imports of barium chloride from nonsubject sources: China, Mexico, and the United Kingdom.

Official U.S. import statistics show that imports of barium chloride entered the United States from nonsubject sources—Mexico, Russia, and the United Kingdom—during 2018-20. See app. D for more information. Petitioner notes, however, that to its knowledge ***. Petitioner's postconference brief, exh. 2, p. 1.

Table VII-1
Barium chloride: Summary data for producers in India, 2020

Firm	Production (1,000 pounds)	Share of reported production (percent)	Exports to the United States (1,000 pounds)	Share of reported exports to the United States (percent)	Total shipments (1,000 pounds)	Share of firm's total shipments exported to the United States (percent)
Chaitanya	***	***	***	***	***	***
Shri Shanti	***	***	***	***	***	***
All firms	***	***	***	***	***	***

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

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

Changes in operations

As presented in table VII-2, producers in India reported several operational and organizational changes since January 1, 2018. Shri Shanti reported ***. Chaitanya reported ***. Chaitanya also reported ***.

Table VII-2
Barium chloride: Reported changes in operations in India since January 1, 2018, by firm

Item	Firm name and accompanying narrative response
Prolonged shutdowns or curtailments	***
Revised labor agreements	***

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

Operations on barium chloride

Table VII-3 presents information on the barium chloride operations of the responding producers and exporters in India.

Producers in India reported capacity at *** pounds during 2018-20. This figure is projected to remain the same during 2021-22. Production and, consequently, capacity utilization decreased irregularly during 2018-20. Production was *** pounds (*** percent utilization) in 2018, it increased to *** pounds (*** percent utilization) in 2019, and then decreased to *** pounds (*** percent utilization) in 2020, a decline in production of *** percent during 2018-20. Producers in India project that their production and capacity utilization will both be higher in 2021 and 2022.

Producers in India are export-oriented. During 2018-20, their share of exports to total shipments ranged between *** and *** percent. Their projected share is *** percent in 2021 and *** in 2022. The ratio of producers' exports to the United States to total shipments ranged between *** percent and *** percent during 2018-20, and it is projected to be at *** percent in 2021 and *** percent in 2022.[9]

End-of-period inventories for producers in India are small relative to their production and total shipments. During 2018-20, the ratio of inventories to production ranged between *** and *** percent. During the same time, the ratio of inventories to total shipments ranged between *** and *** percent. In 2021, the ratio of inventories to production and the ratio of inventories to total shipments is projected to be *** percent. In 2022, the ratio of inventories to production and the ratio of inventories to total shipments is projected to be *** percent.

[9] Chaitanya reported that it ***. Respondent Chaitanya's postconference brief, pp. 19, 29.

Table VII-3
Barium chloride: Data on industry in India, by period

Quantity in 1,000 pounds

Item	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021	Projection 2021	Projection 2022
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	***	***	***	***	***	***	***

Table continued.

Table VII-3 continued
Barium chloride: Data on industry in India, by period

Shares and ratios in percent

Item	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021	Projection 2021	Projection 2022
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	***	***	***	***	***	***	***

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 “---“.

Alternative products

As previously stated, there are two different form types of barium chloride—crystalline barium chloride and anhydrous barium chloride.[10] Table VII-4 presents subject producers' production of crystalline barium chloride and anhydrous barium chloride, as well as their production of alternative products produced on the same equipment and machinery as used to produce barium chloride.[11]

Producers in India produced barium chloride and alternative products in relatively equal shares. The share of production of all barium chloride ranged between *** and *** percent during 2018-20, while the share of production of all out-of-scope products ranged between *** and *** percent during the same timeframe. The production of all barium chloride, as compared to the production of all out-of-scope products, was higher in both interim 2020 and interim 2021.

Producers in India parallel U.S. producers in that they produce ***.[12] On average, producers in India produce ***.

[10] See "The product" section of this report for more information on the two form types of barium chloride.

[11] Shri Shanti ***. Chaitanya reported ***.

[12] See Part III, table III-7 for more information.

Table VII-4
Barium chloride: Producers in India overall capacity and production on the same equipment as subject production, by period

Quantities in 1,000 pounds; Shares and ratios in percent

Item	Measure	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
Overall capacity	Quantity	***	***	***	***	***
Production: Crystalline barium chloride	Quantity	***	***	***	***	***
Production: Anhydrous barium chloride	Quantity	***	***	***	***	***
Production: All barium chloride	Quantity	***	***	***	***	***
Production: Other products	Quantity	***	***	***	***	***
Production: All out-of-scope products	Quantity	***	***	***	***	***
Production: Total	Quantity	***	***	***	***	***
Overall capacity utilization	Ratio	***	***	***	***	***
Production: Crystalline barium chloride	Share	***	***	***	***	***
Production: Anhydrous barium chloride	Share	***	***	***	***	***
Production: All barium chloride	Share	***	***	***	***	***
Production: Other products	Share	***	***	***	***	***
Production: All out-of-scope products	Share	***	***	***	***	***
Production: Total	Share	***	***	***	***	***

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 "---".

Exports

According to Global Trade Atlas ("GTA"), the leading export markets for barium chloride from India, by quantity, are the United Arab Emirates, Saudi Arabia, and Kuwait. In 2020, their share of exports from India were 18.0, 14.4, and 12.4 percent, respectively. In 2020, the United States was the eighth-largest export market destination, by quantity, for barium chloride from India (4.5 percent). By value, the United States was the top export market of barium chloride from India (35.2 percent). Table VII-5 presents exports from India to its leading markets.

Table VII-5
Chlorides: Exports from India, by destination market and by period

Quantity in 1,000 pounds; Value in 1,000 dollars

Destination market	Measure	2018	2019	2020
United States	Quantity	6,282	5,925	6,789
United Arab Emirates	Quantity	22,935	25,138	26,799
Saudi Arabia	Quantity	17,398	22,015	21,531
Kuwait	Quantity	4,202	14,175	18,468
Oman	Quantity	6,053	10,104	12,269
Qatar	Quantity	11,360	10,916	8,350
Bahrain	Quantity	7,206	8,183	7,924
Philippines	Quantity	269	7,855	6,827
Malaysia	Quantity	4,444	4,312	6,754
All other destination markets	Quantity	29,711	36,138	33,580
All destination markets	Quantity	109,859	144,761	149,292
United States	Value	6,332	8,017	11,834
United Arab Emirates	Value	1,328	1,328	1,412
Saudi Arabia	Value	749	975	1,009
Kuwait	Value	181	582	741
Oman	Value	292	472	549
Qatar	Value	647	637	456
Bahrain	Value	505	522	498
Philippines	Value	17	405	364
Malaysia	Value	335	288	436
All other destination markets	Value	20,529	17,442	16,357
All destination markets	Value	30,916	30,667	33,656
United States	Unit value	1.01	1.35	1.74
United Arab Emirates	Unit value	0.06	0.05	0.05
Saudi Arabia	Unit value	0.04	0.04	0.05
Kuwait	Unit value	0.04	0.04	0.04
Oman	Unit value	0.05	0.05	0.04
Qatar	Unit value	0.06	0.06	0.05
Bahrain	Unit value	0.07	0.06	0.06
Philippines	Unit value	0.06	0.05	0.05
Malaysia	Unit value	0.08	0.07	0.06
All other destination markets	Unit value	0.69	0.48	0.49
All destination markets	Unit value	0.28	0.21	0.23

Table continued.

Table VII-5 continued
Chlorides: Exports from India, by destination market and by period

Unit values in dollars per pound; Shares in percent

Destination market	Measure	2018	2019	2020
United States	Share of quantity	5.7	4.1	4.5
United Arab Emirates	Share of quantity	20.9	17.4	18.0
Saudi Arabia	Share of quantity	15.8	15.2	14.4
Kuwait	Share of quantity	3.8	9.8	12.4
Oman	Share of quantity	5.5	7.0	8.2
Qatar	Share of quantity	10.3	7.5	5.6
Bahrain	Share of quantity	6.6	5.7	5.3
Philippines	Share of quantity	0.2	5.4	4.6
Malaysia	Share of quantity	4.0	3.0	4.5
All other destination markets	Share of quantity	27.0	25.0	22.5
All destination markets	Share of quantity	100.0	100.0	100.0
United States	Share of value	20.5	26.1	35.2
United Arab Emirates	Share of value	4.3	4.3	4.2
Saudi Arabia	Share of value	2.4	3.2	3.0
Kuwait	Share of value	0.6	1.9	2.2
Oman	Share of value	0.9	1.5	1.6
Qatar	Share of value	2.1	2.1	1.4
Bahrain	Share of value	1.6	1.7	1.5
Philippines	Share of value	0.1	1.3	1.1
Malaysia	Share of value	1.1	0.9	1.3
All other destination markets	Share of value	66.4	56.9	48.6
All destination markets	Share of value	100.0	100.0	100.0

Source: Official exports statistics under Harmonized System (“HS”) subheading 2827.39 as reported by the Indian Ministry of Trade in the Global Trade Atlas database, accessed January 22, 2022.

Note: HS subheading 2827.39 contains products outside the scope of these investigations.

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 “---“. United States is shown at the top, all remaining top export destinations shown in descending order of 2020 data.

U.S. inventories of imported merchandise

Table VII-6 presents data on U.S. importers' reported inventories of barium chloride. *** reported inventories of barium chloride from nonsubject sources.

U.S. importers' inventories of subject barium chloride decreased irregularly during 2018-20. Inventories were at *** pounds in 2018, they decreased to *** pounds in 2019, and then increased to *** pounds in 2020, a decrease of *** percent during 2018-20.[13] Inventories were lower in interim 2021 as compared to interim 2020.

The ratio of subject inventories to imports and the ratio of subject inventories to total U.S. shipments also decreased irregularly during 2018-20. The ratio of subject inventories to imports was *** percent in 2018, it decreased to *** percent in 2019, and then increased to *** in 2020, a decline of *** percentage points during 2018-2020. The ratio of subject imports to total shipments followed a similar trend; it was *** percent in 2018, then decreased to *** percent in 2019, and then increased to *** percent in 2020, a decline of *** percentage points during 2018-20. The two ratios were lower in interim 2021 as compared to interim 2020. The ratio of inventories to subject imports was *** percent in interim 2021 and *** percent in interim 2020. The ratio of inventories to total shipments was *** percent in interim 2021 and *** percent in interim 2020.

[13] BassTech, which accounted for *** percent of end-of-period inventories in 2020, reported that its importation of and subsequent sales of barium chloride are "lumpy" and not linear. It noted that its principal purchaser, Honeywell UOP, "split the business between CPC and BassTech." Respondent BassTech's postconference brief, exh. 1, p. 3; exh. 1, att. 5. ***. *Id.* at exh. 1, p. 3.

Table VII-6
Barium chloride: U.S. importers' inventories and their ratio to select items, by source and period

Quantity in 1,000 pounds; Ratios in percent

Measure	Source	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
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 import sources	***	***	***	***	***
Ratio to imports	All import sources	***	***	***	***	***
Ratio to U.S. shipments of imports	All import sources	***	***	***	***	***
Ratio to total shipments of imports	All import sources	***	***	***	***	***

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

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

U.S. importers' outstanding orders

The Commission requested importers to indicate whether they imported or arranged for the importation of barium chloride from India after September 30, 2021. Their reported data are presented in table VII-7. *** reported arranged imports from nonsubject sources. *** reported arranged imports from India.

Table VII-7
Barium chloride: Arranged imports, by source and by period

Quantity in 1,000 pounds

Source	Oct-Dec 2021	Jan-Mar 2022	Apr-Jun 2022	Jul-Sept 2022	Total
India	***	***	***	***	***
Nonsubect sources	***	***	***	***	***
All import sources	***	***	***	***	***

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 "---".

Third-country trade actions

Based on available information, barium chloride from India has not been subject to other antidumping or countervailing duty investigations outside the United States.

Information on nonsubject countries

Table VII-8 presents global export data for chlorides, a category that includes barium chloride and out-of-scope products, with the United States at the top and then by source in descending order of quantity for 2020.

In the Commission's fifth five-year review of the antidumping duty order on barium chloride from China, no respondent party provided a response. However, the Petitioner provided a list of 14 possible producers of barium chloride in China with an estimated capacity of 188,000 metric tons (414.5 million pounds).[14]

[14] Barium Chloride from China, Inv. No. 731-TA-149 (Fifth Review), USITC Publication 5203, June 2021, p. I-14.

Table VII-8
Chlorides: Global exports, by reporting country and by period

Quantity in 1,000 pounds; Value in 1,000 dollars

Exporting country	Measure	2018	2019	2020
United States	Quantity	16,126	14,415	17,003
India	Quantity	109,859	144,761	149,292
Germany	Quantity	433,179	431,904	413,131
China	Quantity	268,133	267,727	217,011
Belgium	Quantity	166,725	179,218	181,528
Austria	Quantity	4,710	146,783	138,913
Spain	Quantity	71,794	85,196	110,098
France	Quantity	73,125	91,107	106,290
Sweden	Quantity	74,480	75,570	75,862
Hungary	Quantity	58,962	51,274	57,812
Canada	Quantity	34,648	43,994	46,179
Taiwan	Quantity	30,829	44,131	38,470
All other exporters	Quantity	291,743	268,677	208,611
All reporting exporters	Quantity	1,634,315	1,844,757	1,760,200
United States	Value	53,228	56,272	68,453
India	Value	30,916	30,667	33,656
Germany	Value	77,382	76,701	78,170
China	Value	114,932	117,869	76,439
Belgium	Value	74,464	51,369	35,505
Austria	Value	1,488	9,631	9,322
Spain	Value	18,108	17,177	19,642
France	Value	6,957	10,755	10,829
Sweden	Value	4,628	4,771	4,936
Hungary	Value	2,383	2,287	2,714
Canada	Value	10,188	11,128	6,384
Taiwan	Value	6,957	7,382	5,910
All other exporters	Value	221,917	176,009	115,042
All reporting exporters	Value	623,547	572,019	467,000

Table continued.

Table VII-8 continued
Chlorides: Global exports, by reporting country and by period

Unit values in dollars per pound; Shares in percent

Exporting country	Measure	2018	2019	2020
United States	Unit value	3.30	3.90	4.03
India	Unit value	0.28	0.21	0.23
Germany	Unit value	0.18	0.18	0.19
China	Unit value	0.43	0.44	0.35
Belgium	Unit value	0.45	0.29	0.20
Austria	Unit value	0.32	0.07	0.07
Spain	Unit value	0.25	0.20	0.18
France	Unit value	0.10	0.12	0.10
Sweden	Unit value	0.06	0.06	0.07
Hungary	Unit value	0.04	0.04	0.05
Canada	Unit value	0.29	0.25	0.14
Taiwan	Unit value	0.23	0.17	0.15
All other exporters	Unit value	0.76	0.66	0.55
All reporting exporters	Unit value	0.38	0.31	0.27
United States	Share of quantity	1.0	0.8	1.0
India	Share of quantity	6.7	7.8	8.5
Germany	Share of quantity	26.5	23.4	23.5
China	Share of quantity	16.4	14.5	12.3
Belgium	Share of quantity	10.2	9.7	10.3
Austria	Share of quantity	0.3	8.0	7.9
Spain	Share of quantity	4.4	4.6	6.3
France	Share of quantity	4.5	4.9	6.0
Sweden	Share of quantity	4.6	4.1	4.3
Hungary	Share of quantity	3.6	2.8	3.3
Canada	Share of quantity	2.1	2.4	2.6
Taiwan	Share of quantity	1.9	2.4	2.2
All other exporters	Share of quantity	17.9	14.6	11.9
All reporting exporters	Share of quantity	100.0	100.0	100.0

Table continued.

Table VII-8 continued
Chlorides: Global exports, by reporting country and by period

Shares in percent.

Exporting country	Measure	2018	2019	2020
United States	Share of value	8.5	9.8	14.7
India	Share of value	5.0	5.4	7.2
Germany	Share of value	12.4	13.4	16.7
China	Share of value	18.4	20.6	16.4
Belgium	Share of value	11.9	9.0	7.6
Austria	Share of value	0.2	1.7	2.0
Spain	Share of value	2.9	3.0	4.2
France	Share of value	1.1	1.9	2.3
Sweden	Share of value	0.7	0.8	1.1
Hungary	Share of value	0.4	0.4	0.6
Canada	Share of value	1.6	1.9	1.4
Taiwan	Share of value	1.1	1.3	1.3
All other exporters	Share of value	35.6	30.8	24.6
All reporting exporters	Share of value	100.0	100.0	100.0

Source: Official exports statistics under Harmonized System (“HS”) 2827.39 as reported by various national statistical authorities in the Global Trade Atlas database, accessed January 22, 2022. These data may be overstated as HS subheading 2827.39 may contain products outside the scope of these investigations.

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 “---“. United States is shown at the top followed by the countries under investigation, all remaining top exporting countries in descending order of 2020 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
87 FR 2901, January 19, 2022	*Barium Chloride From India; Institution of Countervailing Duty and Antidumping Duty Investigations and Scheduling of Preliminary Phase Investigations*	https://www.govinfo.gov/content/pkg/FR-2022-01-19/pdf/2022-00911.pdf
87 FR 7094, February 8, 2022	*Barium Chloride From India: Initiation of Countervailing Duty Investigation*	https://www.govinfo.gov/content/pkg/FR-2022-02-08/pdf/2022-02559.pdf
87 FR 7100, February 8, 2022	*Barium Chloride From India: Initiation of Less-Than-Fair-Value Investigation*	https://www.govinfo.gov/content/pkg/FR-2022-02-08/pdf/2022-02558.pdf

APPENDIX B

LIST OF STAFF CONFERENCE WITNESSES

CALENDAR OF PUBLIC PRELIMINARY CONFERENCE

Those listed below appeared in the United States International Trade Commission's preliminary conference via videoconference:

Subject: Barium Chloride from India

Inv. Nos.: 701-TA-678 and 731-TA-1584 (Preliminary)

Date and Time: February 2, 2022 - 9:30 a.m.

OPENING REMARKS:

In Support of Imposition (**Frederick P. Waite**, Vorys, Sater, Seymour and Pease LLP)
In Opposition to Imposition (**Camelia Mazard**, Doyle, Barlow & Mazard PLLC)

In Support of the Imposition of
Antidumping and Countervailing Duty Order:

Vorys, Sater, Seymour and Pease LLP
Washington, DC
on behalf of

Chemical Products Corporation ("CPC")

Thomas S. Bourdon, President & Chief Executive Officer. CPC

Joseph L. McCall, Chief Financial Officer, CPC

Janet Ingram, Chief Commercial Officer, CPC

Rebecca Woodings, Consultant CPC

Frederick P. Waite)
) – OF COUNSEL
Kimberly R. Young)

In Opposition to the Imposition of
Antidumping Duty and Countervailing Duty Order:

Doyle, Barlow & Mazard PLLC
Washington, DC
on behalf of

BassTech International ("BassTech")

Alan Chalup, Chief Operating Officer, BassTech

Travis Pope, Project Manager, Capital Trade, Inc.

Camelia C. Mazard) – OF COUNSEL

TPM Solicitors & Consultants
Saket, New Delhi
on behalf of

Chaitanya Chemicals

A K Gupta)
Divya Nair)
K. N Kothari)
) – OF COUNSEL
Rahul Malsa)
Sumit Kothari)
Ashutosh Kashyap)

REBUTTAL/CLOSING REMARKS:

In Support of Imposition
(**Frederick P. Waite** and **Kimberly R. Young**, Vorys, Sater, Seymour and Pease LLP)

In Opposition to Imposition
(**Camelia Mazard**, Doyle, Barlow & Mazard PLLC)

-END-

APPENDIX C

SUMMARY DATA

Contents

Table C-1
Barium chloride: Summary data concerning the U.S. total market, by period

Quantity=1,000 pounds; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per pound; Period changes=percent--exceptions noted

	Reported data					Period changes			
	Calendar year			Jan-Sep		Comparison years			Jan-Sep
	2018	2019	2020	2020	2021	2018-20	2018-19	2019-20	2020-21
U.S. total market consumption quantity:									
Amount	***	***	***	***	***	▼***	▼***	▼***	▼***
Producers' share (fn1)	***	***	***	***	***	▼***	▼***	▼***	▼***
Importers' share (fn1):									
India	***	***	***	***	***	▲***	▲***	▲***	▲***
Nonsubject sources	***	***	***	***	***	▼***	▼***	▼***	▲***
All import sources	***	***	***	***	***	▲***	▲***	▲***	▲***
U.S. total market 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. producers':									
Average capacity quantity	***	***	***	***	***	▼***	***	▼***	▲***
Production quantity	***	***	***	***	***	▼***	▼***	▼***	▼***
Capacity utilization (fn1)	***	***	***	***	***	▼***	▼***	▼***	▼***
U.S. shipments:									
Quantity	***	***	***	***	***	▼***	▼***	▼***	▼***
Value	***	***	***	***	***	▼***	▼***	▼***	▼***
Unit value	***	***	***	***	***	▲***	▲***	▲***	▲***
Export shipments:									
Quantity	***	***	***	***	***	▼***	▼***	▼***	▲***
Value	***	***	***	***	***	▼***	▼***	▼***	▲***
Unit value	***	***	***	***	***	▼***	▲***	▼***	▲***
Ending inventory quantity	***	***	***	***	***	▲***	▼***	▲***	▲***
Inventories/total shipments (fn1)	***	***	***	***	***	▲***	▲***	▲***	▲***
Production workers	***	***	***	***	***	▼***	▼***	▼***	***
Hours worked (1,000s)	***	***	***	***	***	▼***	▼***	▼***	▼***
Wages paid ($1,000)	***	***	***	***	***	▼***	▼***	▼***	▼***
Hourly wages (dollars per hour)	***	***	***	***	***	▲***	▼***	▲***	▲***
Productivity (pounds per hour)	***	***	***	***	***	▼***	▼***	▲***	▲***
Unit labor costs	***	***	***	***	***	▲***	▲***	▼***	▼***

Table continued.

Table C-1 Continued
Barium chloride: Summary data concerning the U.S. total market, by period
Quantity=1,000 pounds; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per pound; Period changes=percent--exceptions noted

	Reported data					Period changes			
	Calendar year			Jan-Sep		Comparison years			Jan-Sep
	2018	2019	2020	2020	2021	2018-20	2018-19	2019-20	2020-21
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	***	***	***	***	***	***	***	***	***
Net assets	***	***	***	***	***	▼***	▲***	▼***	***

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

fn1.--Reported data are in percent and period changes are in percentage points.
fn2.--Percent changes only calculated when both comparison values represent profits; The directional change in profitability provided when one or both comparison values represent a loss.

Source: Compiled from official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting numbers 2827.39.4500, accessed on January 12, 2022, and from data submitted in response to Commission questionnaires. Imports are based on the imports for consumption data series. Value data reflect landed duty-paid values. 508-compliant tables containing these data are contained in parts III, IV, VI, and VII of this report.

Table C-2
Barium chloride: Summary data concerning the U.S. merchant market, by period
Quantity=1,000 pounds; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per pound; Period changes=percent--exceptions noted

	Reported data					Period changes			
	Calendar year			Jan-Sep		Comparison years			Jan-Sep
	2018	2019	2020	2020	2021	2018-20	2018-19	2019-20	2020-21
U.S. merchant market consumption quantity:									
Amount	***	***	***	***	***	▼***	▼***	▼***	▼***
Producers' share (fn1)	***	***	***	***	***	▼***	▼***	▼***	▼***
Importers' share (fn1):									
India	***	***	***	***	***	▲***	▲***	▲***	▲***
Nonsubject sources	***	***	***	***	***	▼***	▼***	▼***	▲***
All import sources	***	***	***	***	***	▲***	▲***	▲***	▲***
U.S. merchant market 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. producers':									
Commercial U.S. shipments:									
Quantity	***	***	***	***	***	▼***	▼***	▼***	▼***
Value	***	***	***	***	***	▼***	▼***	▼***	▼***
Unit value	***	***	***	***	***	▲***	▲***	▲***	▲***
Commercial sales:									
Quantity	***	***	***	***	***	▼***	▼***	▼***	▼***
Value	***	***	***	***	***	▼***	▼***	▼***	▼***
Unit value	***	***	***	***	***	▲***	▲***	▲***	▲***
Cost of goods sold (COGS)	***	***	***	***	***	▼***	▼***	▼***	▼***
Gross profit or (loss) (fn2)	***	***	***	***	***	▲***	▲***	▼***	▼***
SG&A expenses	***	***	***	***	***	▼***	▲***	▼***	▼***
Operating income or (loss) (fn2)	***	***	***	***	***	▲***	▲***	▼***	▼***
Net income or (loss) (fn2)	***	***	***	***	***	▲***	▲***	▼***	▲***
Unit COGS	***	***	***	***	***	▼***	▼***	▲***	▲***
Unit SG&A expenses	***	***	***	***	***	▲***	▲***	▲***	▲***
Unit operating income or (loss) (fn2)	***	***	***	***	***	▲***	▲***	▼***	▼***
Unit net income or (loss) (fn2)	***	***	***	***	***	▲***	▲***	▲***	▲***
COGS/sales (fn1)	***	***	***	***	***	▼***	▼***	▲***	▲***
Operating income or (loss)/sales (fn1)	***	***	***	***	***	▲***	▲***	▼***	▼***
Net income or (loss)/sales (fn1)	***	***	***	***	***	▲***	▲***	▼***	▲***

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).

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

Source: Compiled from official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting numbers 2827.39.4500, accessed on January 12, 2022, and from data submitted in response to Commission questionnaires. Imports are based on the imports for consumption data series. Value data reflect landed duty-paid values. 508-compliant tables containing these data are contained in parts III, IV, VI, and VII of this report.

APPENDIX D

OFFICIAL U.S. IMPORT STATISTICS FOR BARIUM CHLORIDE

Table D-1
Barium chloride: U.S. imports, by source and by month

Quantity in 1,000 pounds

Year	Month	India	Nonsubject sources	All import sources
2018	January	555	2	558
2018	February	547	---	547
2018	March	857	---	857
2018	April	418	0	419
2018	May	638	---	638
2018	June	162	---	162
2018	July	843	---	843
2018	August	853	---	853
2018	September	178	---	178
2018	October	95	---	95
2018	November	132	---	132
2018	December	314	0	314
2019	January	401	9	410
2019	February	53	1	54
2019	March	91	2	93
2019	April	196	---	196
2019	May	132	---	132
2019	June	224	---	224
2019	July	448	---	448
2019	August	44	---	44
2019	September	225	---	225
2019	October	720	3	723
2019	November	721	---	721
2019	December	573	---	573

Table continued.

Table D-1 continued
Barium chloride: U.S. imports, by source and by month

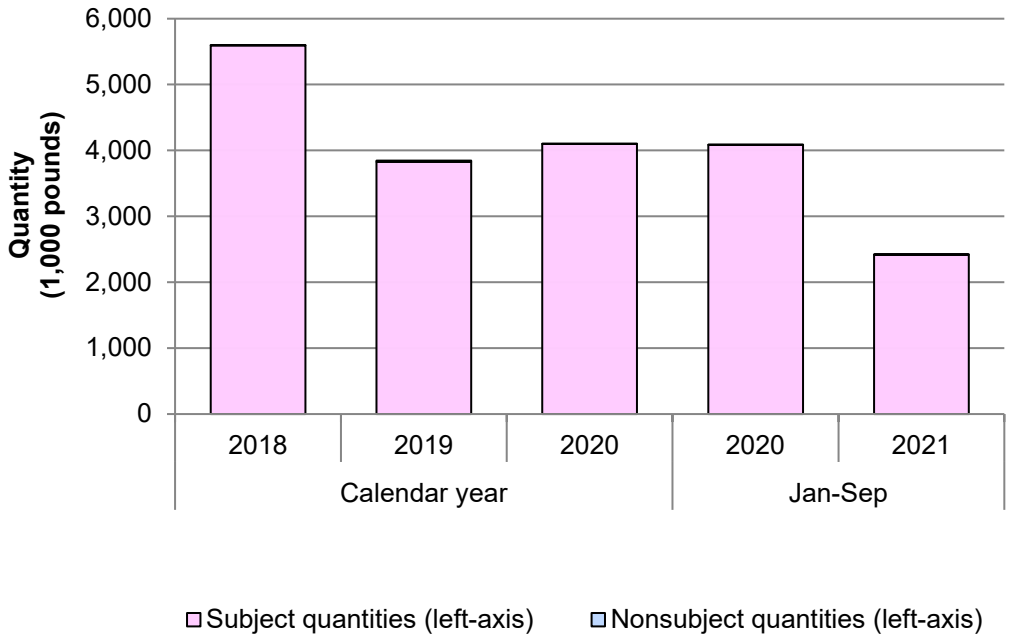
Quantity in 1,000 pounds

Year	Month	India	Nonsubject sources	All import sources
2020	January	449	---	449
2020	February	473	---	473
2020	March	1,106	---	1,106
2020	April	398	---	398
2020	May	450	---	450
2020	June	311	---	311
2020	July	607	3	609
2020	August	112	---	112
2020	September	178	---	178
2020	October	2	---	2
2020	November	13	3	16
2020	December	---	---	---
2021	January	89	---	89
2021	February	1	---	1
2021	March	88	---	88
2021	April	173	0	173
2021	May	450	3	453
2021	June	540	---	540
2021	July	405	---	405
2021	August	495	---	495
2021	September	179	---	179
2021	October	270	---	270
2021	November	405	---	405

Source: Compiled from official U.S. imports statistics of the U.S. Department of Commerce using HTS statistical reporting numbers 2827.39.4500, accessed January 12, 2022. Imports are based on the imports for consumption data series.

Note: Data shown as “0” represent non-zero values less than 500 pounds; zeroes, null values, and undefined calculations are suppressed and shown as “---“.

Figure D-1
Barium chloride: U.S. import quantities, 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 numbers 2827.39.4500, accessed on January 12, 2022. Imports are based on the imports for consumption data series.

APPENDIX E

DATA TABLES ACCOMPANYING FIGURES IN PART II

Appendix E-1
Crude oil and gasoline prices: Cushing, OK crude oil future contract 1-4 (average) price, and U.S. regular all formulations retail gasoline prices, by month

Crude oil future contract price in dollars per barrel, retail gasoline price in dollars per gallon

Year	Month	Crude oil future contract price	Retail gasoline price
2018	January	63.32	2.55
2018	February	61.74	2.59
2018	March	62.59	2.59
2018	April	66.02	2.76
2018	May	69.58	2.90
2018	June	66.54	2.89
2018	July	68.76	2.85
2018	August	67.08	2.84
2018	September	69.74	2.84
2018	October	70.73	2.86
2018	November	56.86	2.65
2018	December	49.12	2.37
2019	January	52.05	2.25
2019	February	55.63	2.31
2019	March	58.63	2.52
2019	April	63.90	2.80
2019	May	60.98	2.86
2019	June	54.85	2.72
2019	July	57.60	2.74
2019	August	54.56	2.62
2019	September	56.60	2.59
2019	October	53.94	2.63
2019	November	56.97	2.60
2019	December	59.47	2.56
2020	January	57.39	2.55
2020	February	50.82	2.44
2020	March	32.17	2.23
2020	April	24.36	1.84
2020	May	29.81	1.87
2020	June	38.62	2.08
2020	July	41.03	2.18
2020	August	42.83	2.18
2020	September	40.12	2.18
2020	October	40.03	2.16
2020	November	41.54	2.11
2020	December	47.26	2.20

Table continued.

Appendix E-1--continued
Crude oil and gasoline prices: Cushing, OK crude oil future contract 1-4 (average) price, and U.S. regular all formulations retail gasoline prices, by month

Crude oil future contract price in dollars per barrel, retail gasoline price in dollars per gallon

Year	Month	Crude oil future contract price	Retail gasoline price
2021	January	52.01	2.33
2021	February	58.70	2.50
2021	March	62.09	2.81
2021	April	61.54	2.86
2021	May	64.85	2.99
2021	June	70.53	3.06
2021	July	71.33	3.14
2021	August	67.19	3.16
2021	September	71.01	3.18
2021	October	79.93	3.29
2021	November	77.67	3.39
2021	December	71.25	3.31
2022	January	81.72	3.31

Source: U.S. Energy Information Administration, https://www.eia.gov/petroleum/weekly/, retrieved February 5, 2022.

Appendix E-2
Industrial drilling production and price indexes, by month

January 2018 = 100; changes in percent

Year	Month	Industrial drilling production index	Oil and gas drilling wells PPI
2018	January	100.0	100.0
2018	February	104.7	100.4
2018	March	107.0	100.2
2018	April	111.7	100.4
2018	May	118.1	101.5
2018	June	120.1	102.0
2018	July	119.5	101.4
2018	August	120.1	101.3
2018	September	120.3	100.4
2018	October	121.3	102.0
2018	November	122.6	104.1
2018	December	122.3	104.2
2019	January	119.2	104.1
2019	February	116.9	103.7
2019	March	114.6	103.7
2019	April	113.8	103.6
2019	May	111.5	103.6
2019	June	111.9	103.7
2019	July	112.3	102.9
2019	August	112.1	102.1
2019	September	109.6	102.0
2019	October	107.8	101.7
2019	November	106.9	101.2
2019	December	110.2	101.1
2020	January	111.9	100.5
2020	February	116.3	99.5
2020	March	116.1	98.2
2020	April	86.7	96.4
2020	May	57.1	94.7
2020	June	47.4	94.7
2020	July	45.3	94.1
2020	August	45.4	94.2
2020	September	47.7	93.8
2020	October	51.2	94.5
2020	November	55.4	94.4
2020	December	61.3	94.2

Table continued.

Appendix E-2--continued
Industrial drilling production and price indexes, by month

January 2018 = 100; changes in percent

Year	Month	Industrial drilling production index	Oil and gas drilling wells PPI
2021	January	66.6	93.0
2021	February	70.3	94.6
2021	March	70.4	94.6
2021	April	73.3	95.4
2021	May	76.2	95.4
2021	June	77.5	97.4
2021	July	81.2	97.9
2021	August	82.4	98.8
2021	September	80.9	99.2
2021	October	87.6	99.6
2021	November	91.8	99.8
2021	December	94.8	99.9

Source: St. Louis Federal Reserve Economic Data, https://fred.stlouisfed.org/series/IPN213111N# and https://fred.stlouisfed.org/series/PCU213111213111P, retrieved February 10, 2022.

Note: Mining, quarrying and oil and gas extraction industrial drilling data are not seasonally adjusted and based on NAICS code 213111. Producer price index for oil and gas drilling wells are for primary services and not seasonally adjusted.

Appendix E-3
Construction spending: Total construction spending in the United States, seasonally adjusted annual rate, by month

Construction spending in trillions of dollars

Year	Month	Construction spending
2018	January	1.34
2018	February	1.36
2018	March	1.35
2018	April	1.36
2018	May	1.37
2018	June	1.35
2018	July	1.34
2018	August	1.33
2018	September	1.32
2018	October	1.30
2018	November	1.29
2018	December	1.28
2019	January	1.30
2019	February	1.32
2019	March	1.34
2019	April	1.36
2019	May	1.37
2019	June	1.39
2019	July	1.41
2019	August	1.42
2019	September	1.43
2019	October	1.43
2019	November	1.45
2019	December	1.46
2020	January	1.49
2020	February	1.50
2020	March	1.51
2020	April	1.45
2020	May	1.44
2020	June	1.44
2020	July	1.44
2020	August	1.46
2020	September	1.46
2020	October	1.47
2020	November	1.49
2020	December	1.50

Table continued.

Appendix E-3--continued
Construction spending: Total construction spending in the United States, seasonally adjusted annual rate, by month

Construction spending in trillions of dollars

Year	Month	Construction spending
2021	January	1.55
2021	February	1.53
2021	March	1.55
2021	April	1.55
2021	May	1.56
2021	June	1.58
2021	July	1.58
2021	August	1.60
2021	September	1.61
2021	October	1.62
2021	November	1.63

Source: St. Louis Federal Reserve Economic Data, https://fred.stlouisfed.org/series/TTLCONS, retrieved February 9, 2022.

APPENDIX F

DATA TABLES ACCOMPANYING FIGURES IN PART V

Appendix F-1a
Baryte imports: Average unit values of imports of ground barium natural barium sulfate (barytes) from China, Mexico, Morocco, and Vietnam, by source and by month

Unit values in dollars per pound

Year	Month	China	Mexico	Morocco	Vietnam
2018	January	0.04	0.06	0.04	---
2018	February	0.04	0.06	0.04	---
2018	March	0.05	0.06	0.04	---
2018	April	0.04	0.06	0.04	---
2018	May	0.04	0.06	0.04	---
2018	June	0.04	0.06	0.04	---
2018	July	0.04	0.06	0.04	---
2018	August	0.04	0.06	0.04	---
2018	September	0.04	0.06	0.04	---
2018	October	0.04	0.06	0.04	---
2018	November	0.04	0.06	0.04	0.05
2018	December	0.04	0.06	0.04	---
2019	January	0.05	0.06	0.04	0.04
2019	February	0.06	0.06	0.09	0.04
2019	March	0.04	0.06	0.04	0.05
2019	April	0.04	0.06	0.04	0.07
2019	May	0.04	0.06	0.04	0.05
2019	June	0.03	0.06	0.04	0.06
2019	July	0.04	0.06	0.05	0.05
2019	August	0.04	0.06	0.04	0.05
2019	September	0.04	0.06	0.04	---
2019	October	0.05	0.06	0.04	---
2019	November	0.04	0.06	0.04	---
2019	December	0.05	0.06	0.04	---
2020	January	0.04	0.06	0.04	---
2020	February	0.04	0.06	0.04	---
2020	March	0.04	0.06	0.04	---
2020	April	0.04	0.06	0.05	---
2020	May	0.03	0.05	0.05	---
2020	June	0.04	0.06	0.05	---
2020	July	0.04	0.05	0.05	---
2020	August	0.04	0.05	0.05	---
2020	September	0.04	0.05	0.04	---
2020	October	0.04	0.06	0.04	---
2020	November	0.04	0.06	0.04	---
2020	December	0.04	0.05	0.04	---

Table continued.

Appendix F1a--continued
Baryte imports: Average unit values of imports of ground barium natural barium sulfate (barytes) from China, Mexico, Morocco, and Vietnam, monthly, January 2018–December 2021

Unit values in dollars per pound

Year	Month	China	Mexico	Morocco	Vietnam
2021	January	0.05	0.04	0.04	---
2021	February	0.05	0.05	0.04	---
2021	March	0.04	0.06	0.04	---
2021	April	0.04	0.06	0.04	---
2021	May	0.04	0.04	0.04	---
2021	June	0.04	0.05	0.04	---
2021	July	0.05	0.05	0.03	---
2021	August	0.05	0.05	0.03	---
2021	September	0.04	0.06	0.03	---
2021	October	0.04	0.05	0.03	---
2021	November	0.05	0.06	0.04	---
2021	December	0.05	0.06	0.03	---

Source: USITC Dataweb, HTS statistical reporting number 2511.10.1000, accessed February 10, 2022.

Appendix F-1b
Baryte imports: Quantities of imports of ground barium natural barium sulfate (barytes) from China, Mexico, Morocco, and Vietnam, by source and by month

Quantity in thousands of pounds

Year	Month	China	Mexico	Morocco	Vietnam
2018	January	187,276	37,518	23,034	---
2018	February	222,781	38,951	44,172	---
2018	March	167,179	33,656	35,089	---
2018	April	194,681	36,041	32,236	---
2018	May	167,088	34,904	38,451	---
2018	June	168,629	39,818	31,447	---
2018	July	155,529	45,424	27,240	---
2018	August	146,956	48,356	46,218	---
2018	September	98,908	36,204	22,562	---
2018	October	161,533	34,194	57,519	---
2018	November	124,453	38,636	47,569	5,335
2018	December	98,599	43,409	54,653	---
2019	January	78,524	40,962	79,421	18,283
2019	February	68,061	38,543	64,699	13,653
2019	March	153,228	41,643	61,108	8,289
2019	April	121,651	42,044	72,131	6,061
2019	May	139,400	28,393	59,097	6,742
2019	June	100,670	30,144	39,604	7,288
2019	July	121,900	36,134	36,237	5,617
2019	August	123,256	37,465	32,326	1,967
2019	September	72,686	43,480	59,606	---
2019	October	127,883	36,372	44,846	---
2019	November	77,949	36,378	31,967	---
2019	December	88,888	42,851	38,301	---
2020	January	143,730	50,642	47,675	---
2020	February	78,354	47,119	48,841	---
2020	March	116,662	48,638	54,242	---
2020	April	85,945	44,882	25,622	---
2020	May	38,942	32,209	17,319	---
2020	June	57,631	29,152	9,478	---
2020	July	45,479	22,955	15,789	---
2020	August	58,142	17,780	5,445	---
2020	September	97,252	15,139	2,820	---
2020	October	76,174	17,604	3,433	---
2020	November	114,045	14,667	2,822	---
2020	December	117,561	25,100	8,770	---

Table continued.

Appendix F-1b--continued
Baryte imports: Quantities of imports of ground barium natural barium sulfate (barytes) from China, Mexico, Morocco, and Vietnam, by source and by month

Quantity in thousands of pounds

Year	Month	China	Mexico	Morocco	Vietnam
2021	January	51,030	41,879	9,001	---
2021	February	66,965	17,322	15,064	---
2021	March	65,552	25,236	47,144	---
2021	April	52,620	27,745	14,839	---
2021	May	72,367	47,624	13,770	---
2021	June	55,938	42,487	40,327	---
2021	July	62,139	27,335	99,607	---
2021	August	103,886	29,754	89,856	---
2021	September	78,925	30,479	73,738	---
2021	October	51,756	36,636	63,301	---
2021	November	44,926	41,961	72,863	---
2021	December	60,440	37,174	45,043	---

Source: USITC Dataweb, HTS statistical reporting number 2511.10.1000, accessed February 10, 2022.

Appendix F-2
Producer Price Index for petroleum coke and other petroleum and coal products, not seasonally adjusted, by month

January 2018 = 100; changes in percent

Year	Month	Pet coke and other products PPI
2018	January	100.0
2018	February	102.2
2018	March	103.3
2018	April	108.2
2018	May	109.9
2018	June	109.1
2018	July	114.5
2018	August	115.1
2018	September	112.0
2018	October	115.3
2018	November	117.0
2018	December	110.9
2019	January	104.6
2019	February	106.2
2019	March	106.3
2019	April	109.3
2019	May	105.1
2019	June	103.8
2019	July	98.8
2019	August	96.7
2019	September	90.9
2019	October	76.9
2019	November	82.5
2019	December	85.9
2020	January	76.7
2020	February	76.9
2020	March	79.5
2020	April	87.0
2020	May	86.8
2020	June	83.7
2020	July	84.2
2020	August	84.8
2020	September	84.9
2020	October	92.3
2020	November	100.1
2020	December	113.1

Table continued.

Appendix F-2--continued
Producer Price Index for petroleum coke and other petroleum and coal products, not seasonally adjusted, by month

January 2018 = 100; changes in percent

Year	Month	Pet coke and other products PPI
2021	January	116.3
2021	February	114.1
2021	March	115.8
2021	April	119.9
2021	May	127.1
2021	June	128.6
2021	July	124.6
2021	August	108.7
2021	September	114.6
2021	October	118.4
2021	November	132.1
2021	December	156.6

Source: U.S. Energy Information Administration, https://fred.stlouisfed.org/series/WPU058103, retrieved February 10, 2022.

Appendix F-3
Producer Price Index for inorganic acids, including hydrochloric acid, not seasonally adjusted, by month

January 2018 = 100; changes in percent

Year	Month	Inorganic acids including hydrochloric acid PPI
2018	January	100.0
2018	February	102.6
2018	March	110.4
2018	April	110.1
2018	May	110.2
2018	June	110.6
2018	July	113.8
2018	August	111.3
2018	September	112.1
2018	October	113.5
2018	November	114.3
2018	December	116.3
2019	January	116.9
2019	February	118.1
2019	March	116.1
2019	April	117.1
2019	May	115.1
2019	June	114.0
2019	July	112.3
2019	August	110.4
2019	September	110.7
2019	October	110.3
2019	November	107.6
2019	December	100.2
2020	January	96.7
2020	February	96.4
2020	March	86.9
2020	April	81.5
2020	May	79.9
2020	June	83.0
2020	July	82.6
2020	August	80.4
2020	September	80.0
2020	October	80.3
2020	November	80.5
2020	December	81.4

Table continued.

Appendix F-3--continued
Producer Price Index for inorganic acids, including hydrochloric acid, not seasonally adjusted, by month

January 2018 = 100; changes in percent

Year	Month	Inorganic acids including hydrochloric acid PPI
2021	January	81.5
2021	February	83.9
2021	March	85.2
2021	April	87.2
2021	May	103.8
2021	June	106.8
2021	July	112.3
2021	August	111.2
2021	September	110.7
2021	October	112.5
2021	November	113.1
2021	December	113.1

Source: FRED, https://fred.stlouisfed.org/series/WPU0613020T#0, retrieved February 7, 2022.

Appendix F-4
Average retail industrial price of electricity in the United States, by month

Price in cents per kilowatt hour

Year	Month	Electricity price
2018	January	6.94
2018	February	6.78
2018	March	6.63
2018	April	6.57
2018	May	6.79
2018	June	7.17
2018	July	7.32
2018	August	7.25
2018	September	7.05
2018	October	6.87
2018	November	6.85
2018	December	6.67
2019	January	6.58
2019	February	6.69
2019	March	6.73
2019	April	6.51
2019	May	6.69
2019	June	6.87
2019	July	7.14
2019	August	7.40
2019	September	7.06
2019	October	6.84
2019	November	6.72
2019	December	6.38
2020	January	6.37
2020	February	6.44
2020	March	6.39
2020	April	6.39
2020	May	6.54
2020	June	6.94
2020	July	7.16
2020	August	7.07
2020	September	7.00
2020	October	6.72
2020	November	6.49
2020	December	6.41

Table continued.

Appendix F-4--continued
Average retail industrial price of electricity in the United States, by month

Price in cents per kilowatt hour

Year	Month	Electricity price
2021	January	6.39
2021	February	7.90
2021	March	7.05
2021	April	6.76
2021	May	6.71
2021	June	7.28
2021	July	7.54
2021	August	7.65
2021	September	7.71
2021	October	7.53
2021	November	7.47

Source: Energy Information Administration, https://www.eia.gov/electricity/data/browser/#/topic/7?agg=2, retrieved February 7, 2022.

APPENDIX G

FINANCIAL INFORMATION FOR MERCHANT MARKET OPERATIONS

Table G-1
Barium chloride: Results of merchant market operations of U.S. producer CPC, by item and period

Quantity in 1,000 pounds; value in 1,000 dollars; ratios in percent; shares in percent

Item	Measure	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
Commercial net sales	Quantity	***	***	***	***	***
Commercial 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	***	***	***	***	***
Estimated cash flow from operations	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 or (loss)	Ratio to NS	***	***	***	***	***
SG&A expenses	Ratio to NS	***	***	***	***	***
Operating income or (loss)	Ratio to NS	***	***	***	***	***
Net income or (loss)	Ratio to NS	***	***	***	***	***
COGS: Raw materials	Share	***	***	***	***	***
COGS: Direct labor	Share	***	***	***	***	***
COGS: Other factory	Share	***	***	***	***	***
COGS: Total	Share	***	***	***	***	***

Table continued.

Table G-1 continued
Barium chloride: Results of merchant market operations of U.S. producer CPC, by item and period

Unit values in dollars per pound; count in number of firms reporting

Item	Measure	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
Commercial 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: Ratios represent the ratio to net sales value and shares represent the share of COGS.

Table G-2
Barium chloride: Changes in U.S. producer CPC's merchant market AUVs between comparison periods

Changes in percent

Item	2018-20	2018-19	2019-20	Jan-Sep 2020-21
Commercial net sales	***	***	***	***
COGS: Raw materials	***	***	***	***
COGS: Direct labor	***	***	***	***
COGS: Other factory	***	***	***	***
COGS: Total	***	***	***	***

Table continued.

Table G-2 continued
Barium chloride: Changes in U.S. producer CPC's merchant market AUVs between comparison periods

Changes in dollars per pound

Item	2018-20	2018-19	2019-20	Jan-Sep 2020-21
Commercial 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: 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 "---". Period changes preceded by a "▲" represent an increase, while period changes preceded by a "▼" represent a decrease.