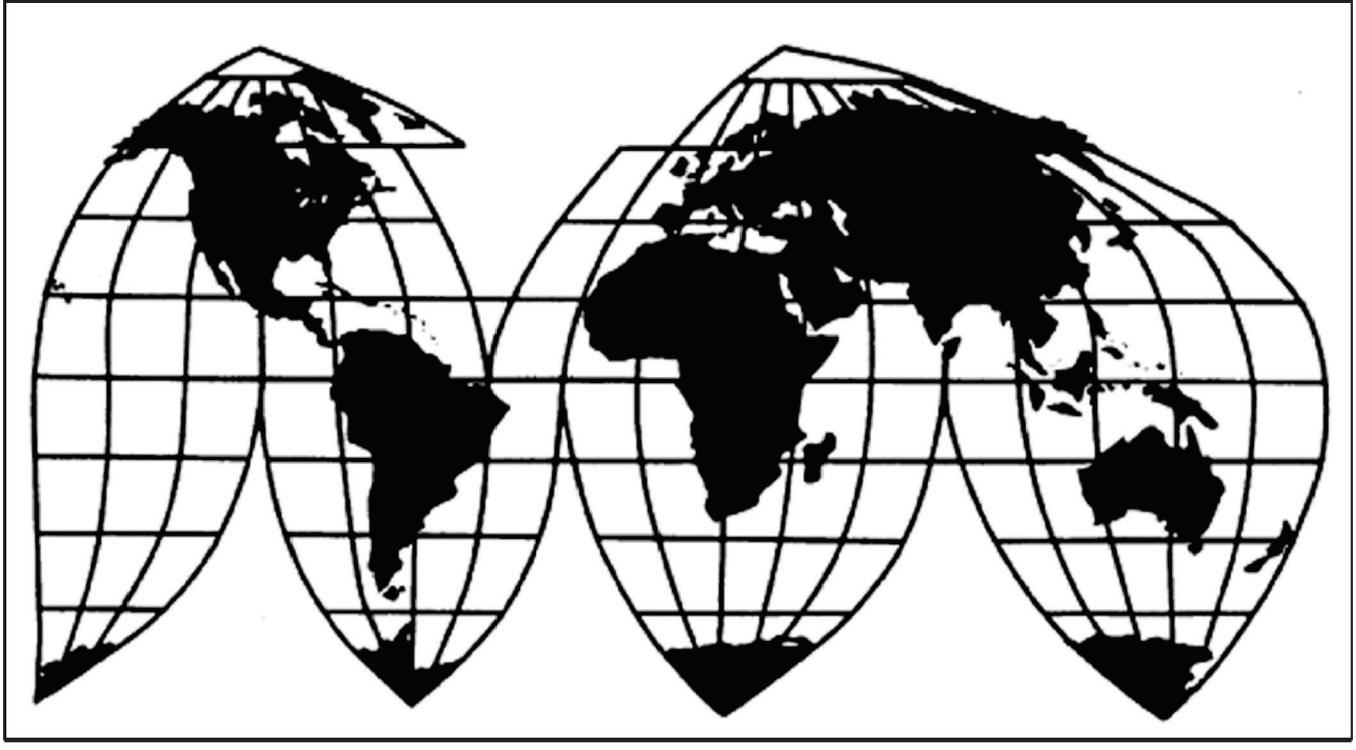
Sodium Nitrite from India and Russia

Investigation Nos. 701-TA-679-680 and 731-TA-1585-1586 (Preliminary)

Publication 5294 **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

Peter Stebbins, Investigator
Christopher Robinson, Industry Analyst
Natalia King, Economist
Joanna Lo, Accountant
Russell Duncan, Statistician
Brian Soiset, Attorney
Nathanael Comly, Supervisory Investigator

Special thanks to Mary Messer, 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

Sodium Nitrite from India and Russia

Investigation Nos. 701-TA-679-680 and 731-TA-1585-1586 (Preliminary)

Publication 5294

March 2022

CONTENTS

Page

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Note.—Information that would reveal confidential operations of individual concerns may not be published.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-679-680 and 731-TA-1585-1586 (Preliminary)

Sodium Nitrite from India and Russia

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 sodium nitrite from India and Russia, provided for in subheading 2834.10.10 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 governments of India and Russia.[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 7108 (February 8, 2022); 87 FR 7122 (February 8, 2022).

BACKGROUND

On January 13, 2022, Chemtrade Chemicals U.S. LLC, Parsippany, New Jersey filed petitions with the Commission and Commerce, alleging that an industry in the United States is materially injured or threatened with material injury by reason of subsidized imports of sodium nitrite from India and Russia and LTFV imports of sodium nitrite from India and Russia. Accordingly, effective January 13, 2022, the Commission instituted countervailing duty investigation Nos. 701-TA-679-680 and antidumping duty investigation Nos. 731-TA-1585-1586 (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 21, 2022 (87 FR 3333). The Commission conducted its conference on February 3, 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 sodium nitrite from India and Russia that are allegedly sold in the United States at less than fair value and that are allegedly subsidized by the governments of India and Russia.

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]

[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).

II. Background

Chemtrade Chemicals US LLC ("Chemtrade" or "Petitioner"), a U.S. producer and wholesaler of sodium nitrite, filed the petitions in these investigations on January 13, 2022.[3] Chemtrade appeared at the staff conference and submitted a postconference brief.[4]

Two respondent entities have participated in these investigations. Deepak Nitrite Limited ("Deepak"), a producer and exporter of sodium nitrite from India, appeared at the staff conference and submitted a postconference brief. Royce Associates ("Royce"), a U.S. importer of subject merchandise, submitted a postconference brief.

Data Coverage. The period of investigation is January 2018 through September 2021 ("POI"). U.S. industry data are based on the questionnaire response of one domestic producer that accounted for the vast majority of U.S. production of sodium nitrite in 2020.[5] U.S. imports are based on official U.S. import statistics of the U.S. Department of Commerce Census Bureau for HTS statistical reporting number 2834.10.1000.[6] The Commission received a questionnaire response from one foreign producer of subject merchandise in India, which reported that it accounted for approximately *** percent of overall production of sodium nitrite in India,[7] but

[3] In 2014, Chemtrade purchased General Chemicals, which was the petitioner for the 2008 investigations of sodium nitrite from China and Germany. Conference Tr. at 6 (Cannon); *see also Sodium Nitrite from China and Germany*, Inv. Nos. 701-TA-453 and 731-TA-1136-1137 (Final), USITC Pub. 4029 (Aug. 2008) at 3 ("*2008 Sodium Nitrite Investigations*").

[4] 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.

[5] Confidential Report Memorandum, INV-UU-015 (Feb. 18, 2022) ("CR") at I-4; *Sodium Nitrite from India, and Russia*, Inv. Nos. 701-TA-679-680 and 731-TA-1585-1586 (Preliminary), USITC Pub. 5294 (March 2022) ("PR") at I-4.

[6] CR/PR at I-4.

[7] CR/PR at VII-3.

received no usable questionnaire response from any foreign producer of subject merchandise in Russia.[8]

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."[9] Section 771(4)(A) of the Tariff Act of 1930, as amended ("the Tariff Act"), defines the relevant domestic industry as the "producers as a whole of a domestic like product, or those producers whose collective output of a domestic like product constitutes a major proportion of the total domestic production of the product."[10] In turn, the Tariff Act defines "domestic like product" as "a product which is like, or in the absence of like, most similar in characteristics and uses with, the article subject to an investigation."[11]

By statute, the Commission's "domestic like product" analysis begins with the "article subject to an investigation," *i.e.*, the subject merchandise as determined by Commerce.[12] 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

[8] CR/PR at VII-9.

[9] 19 U.S.C. § 1677(4)(A).

[10] 19 U.S.C. § 1677(4)(A).

[11] 19 U.S.C. § 1677(10).

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

Commission's like product analysis."[13] The Commission then defines the domestic like product in light of the imported articles Commerce has identified.[14] The decision regarding the appropriate domestic like product(s) in an investigation is a factual determination, and the Commission has applied the statutory standard of "like" or "most similar in characteristics and uses" on a case-by-case basis.[15] No single factor is dispositive, and the Commission may consider other factors it deems relevant based on the facts of a particular investigation.[16] The Commission looks for clear dividing lines among possible like products and disregards minor variations.[17] The Commission may, where appropriate, include domestic articles in the domestic like product in addition to those described in the scope.[18]

---

[13] *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. Circ. Feb. 7, 2020) (the statute requires the Commission to start with Commerce's subject merchandise in reaching its own like product determination).

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

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

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

[17] *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 (Continued…)

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

> Sodium nitrite in any form, at any purity level. In addition, the sodium nitrite covered by these investigations may or may not contain an anti-caking agent. Examples of names commonly used to reference sodium nitrite are nitrous acid, sodium salt, anti-rust, diazotizing salts, erinitrit, and filmerine. Sodium nitrite's chemical composition is $NaNO_2$, and it is generally classified under subheading 2834.10.1000 of the Harmonized Tariff Schedule of the United States (HTSUS). The American Chemical Society Chemical Abstract Service (CAS) has assigned the name "sodium nitrite" to sodium nitrite. The CAS registry number is 7632-00-0. For the purposes of the scope of these investigations, the narrative description is dispositive, not the tariff heading, CAS registry number or CAS name, which are provided for convenience and customs purposes.[19]

Sodium nitrite is an industrial inorganic chemical with a chemical formula of $NaNO_2$ that is primarily used as an intermediate or process chemical.[20] It has a wide variety of uses, including in water treatment chemicals, corrosion inhibitors, oil field applications, dyes and pigments, industrial and household adhesives, as primer for rifle bullets and in other military uses, as a metal blackening agent, and as a food-preserving agent to control botulism.[21]

(…Continued)
product' be interpreted in such a fashion as to prevent consideration of an industry adversely affected by the imports under consideration.").

[18] *See*, *e.g.*, *Pure Magnesium from China and Israel*, Inv. Nos. 701-TA-403 and 731-TA-895-96 (Final), USITC Pub. 3467 at 8 n.34 (Nov. 2001); *Torrington,* 747 F. Supp. at 748-49 (holding that the Commission is not legally required to limit the domestic like product to the product advocated by the petitioner, co-extensive with the scope).

[19] *Sodium Nitrite from India and the Russian Federation: Initiation of Countervailing Duty Investigations*, 87 Fed. Reg. 7108 (February 8, 2022); *Sodium Nitrite from India and the Russian Federation: Initiation of Less-Than-Fair-Value Investigations*, 87 Fed. Reg. 7122 (February 8, 2022).

[20] Petitioner Postconference Br. at 5.

[21] CR/PR at I-7.

The industrial manufacturing process to produce sodium nitrite relies on the transformation of liquid ammonia and a source of sodium (*i.e.*, soda ash or caustic soda).[22] Liquid ammonia is oxidized with air at a high temperature in a catalytic bed to form nitrogen oxides (NO and NO_2), and the nitric oxides then react with the sodium source in an absorption tower and form a sodium nitrite solution.[23] Regardless of the sodium raw material source, all sodium nitrite destined for sale as a dry product must undergo additional processing. The sodium nitrite liquid is crystallized, the crystals are centrifuged, then dried. Manufacturers either blend the crystals with an anti-caking agent to increase the flowability of the powder, or further dry and compact the crystals to yield a finished product with no anti-caking agent, and manufacturers may also dissolve the crystals in water to form a liquid solution form.[24] Finally, manufacturers can test sodium nitrite so they can certify that the product meets specific food quality standards, especially with respect to the presence of heavy metals.[25]

A. Arguments of the Parties

Petitioner's Arguments. Petitioner argues for a single domestic like product of sodium nitrite in all forms and grades, coextensive with the scope of investigations. It notes that all forms and grades share the same chemical composition and properties,[26] are interchangeable across a wide array of end uses,[27] are produced in the same domestic production facility using

[22] CR/PR at I-8.
[23] CR/PR at I-8.
[24] CR/PR at I-8.
[25] CR/PR at I-8; *see also* Petitioner Postconference Br. at 6.
[26] Petitioner Postconference Br. at 4-5.
[27] Petitioner Postconference Br. at 7.

the same workers and production equipment,[28] and are sold through the same channels of distribution.[29] Chemtrade further argues that the only distinction between the food grade and technical grade sodium nitrite that it produces is that food grade product receives an additional certification,[30] noting that end users can use food grade sodium nitrite in any technical grade application.[31] While acknowledging that prices can vary for different forms and grades of sodium nitrite, Petitioner asserts that prices of the different forms and grades overlap.[32]

Respondents' Argument. Neither Deepak nor Royce addresses the definition of domestic like product in their arguments.[33]

B. Analysis

Based on the following analysis, we define a single domestic like product consisting of sodium nitrite, coextensive with the scope.

Physical Characteristics and Uses. Sodium nitrite is available in two grades, food grade or technical grade,[34] and is also available in different forms (*e.g.*, liquid or dry) and types of packaging, which are determined by purchaser preferences and reflect their processes for

[28] Petitioner Postconference Br. at 5-6. Petitioner notes that there are variations in equipment used for packaging in the final stage of production. Conference Tr. at 44 (McFarland).

[29] Petitioner Postconference Br. at 7.

[30] Petitioner Postconference Br. at 8; Conference Tr. at 40 (McFarland).

[31] Petitioner Postconference Br. at 8.

[32] Petitioner Postconference Br. at 8-9.

[33] While Royce characterizes differences between food grade and technical grade sodium nitrite as constituting "clear dividing lines," the differences it alleges are between subject imports and the domestic like product. It does not allege clear dividing lines between different types of domestically produced sodium nitrite. *See, e.g*., Royce Postconference Br. at 5.

[34] CR/PR at I-8; Conference Tr. at 39-40 (McFarland). As discussed further below, Chemtrade maintains its entire production facility as food grade, resulting in the production of food grade and technical grade sodium nitrite that is physically identical, and distinguishable only by the certifications provided. *Id*. at 27 (Emfinger).

incorporating sodium nitrite into downstream products.[35] Sodium nitrite may also be sold with an anti-caking agent that helps to prevent hardening over extended storage.[36] Regardless of grade or form, all sodium nitrite has the same chemical composition ($NaNO_2$), general properties (being an industrial inorganic chemical with oxidizing properties),[37] and concentration (generally greater than 98 percent).[38] In addition, Chemtrade indicates that its food and technical grade sodium nitrite products are essentially identical, except that a further certification is provided for food grade products.[39]

Sodium nitrite has properties that permit its use as an additive in a wide array of industrial applications, including as a corrosion inhibitor, fuel additive, in dyes and synthetic

[35] Conference Tr. at 39-41 (McFarland), stating:

> "…what comes out of our crystallizers is a sodium nitrite crystal and that is the product we sell, and we sell it to the customer in the form that he wants it so that if they want it in a 400-pound drum, that's what we give it to them in…or, if they want it as a solution, we take the same crystal and we actually dissolve it and sell it to them. But the forms and grades are really customer preference driven. The product coming off is essentially identical for all of them."

[36] CR/PR at I-6. Witnesses for Chemtrade indicate that domestic products marketed as "high purity" do not contain an anti-caking agent but are otherwise identical to other grades and forms of sodium nitrite. Conference Tr. at 35 (McFarland).

[37] Petitioner Postconference Br. at 4-5.

[38] Conference Tr. at 68 (McFarland). Of domestically produced sodium nitrite, only technical liquor produced by Chemtrade has a concentration of less than 98 percent. Technical liquor is a mixture of sodium nitrite and sodium nitrate in liquid form that is a by-product of Chemtrade's production process. CR/PR at I-7. Because the scope includes sodium nitrite in any form or purity, Petitioner acknowledges that technical liquor falls within its proposed definition of domestic like product. Conference Tr. at 36 (Alves).

[39] As discussed further below, Chemtrade maintains its entire production facility as food grade, resulting in the production of food grade and technical grade sodium nitrite that is physically identical, and distinguishable only by the certifications provided. *Id*. at 27 (Emfinger).

rubber, a preservative for cured meat, in wastewater treatment, for hardening of metals, as an antidote to cyanide poisoning, and for military applications in ammunition and explosives.[40]

Manufacturing Facilities, Production Processes and Employees. Chemtrade produces all of its sodium nitrite at a single facility with the same employees. It uses the same production equipment for producing sodium nitrite crystals, and it uses different equipment only for certain types of packaging.[41] Chemtrade's entire production facility is certified as food grade at the state and federal levels.[42]

Channels of Distribution. The record indicates that domestically produced sodium nitrite is sold to distributors and end users.[43]

Interchangeability. Chemtrade indicates that any food grade sodium nitrite may be used in the same application as technical grade sodium nitrite, and that its technical grade product would only require a further certification for use in food grade applications.[44] Chemtrade also argues that sodium nitrite is generally interchangeable whether in liquid or dry

---

[40] CR/PR at I-7. Chemtrade's technical liquor by-product has more limited uses than other forms of sodium nitrite. Chemtrade reported that ***. CR/PR at III-7 n.6.

[41] Conference Tr. at 44-45 (McFarland). The other domestic producer, SABIC, uses a different production process from Chemtrade, producing sodium nitrite as a by-product from its polymer synthesis. CR/PR at I-8 n.30.

[42] Conference Tr. at 27 (Emfinger). While information on SABIC is limited in the preliminary phase of these investigations, witnesses for Chemtrade reported that SABIC's production of sodium nitrite is likely limited to technical grade based on the end uses of its customers. Conference Tr. at 19-20 (McFarland).

[43] CR/PR at Table II-1.

[44] Conference Tr. at 40 (McFarland), stating: "…{food grade} product is essentially the same product {as technical grade}. The difference is the level of certification. So you can use food grade material in any tech grade application. And to use tech grade in a food grade, you would have to get it certified."

There is limited interchangeability between Chemtrade's sodium nitrite and its technical liquor by-product, which for many years had a single purchaser using it to make charcoal briquettes, but that now has no purchaser. However, this product may be substituted in limited uses in which higher purity sodium nitrite is used, such as for heat bath salts. Conference Tr. at 36-37 (McFarland & Boonstra).

forms, given that many end users will dissolve the dry product into solution themselves,[45] and that customers in some end uses may utilize sodium nitrite in either liquid or dry form.[46] The responding U.S. producer and responding importers reported that sodium nitrite in different grades or forms are at least somewhat interchangeable.[47]

Producer and Customer Perceptions. Chemtrade indicates that it perceives its sodium nitrite in all grades and forms as "one product, which is sodium nitrite crystals," and that differences in grade or form primarily reflect customer preferences for packaging and downstream processing.[48] The responding U.S. producer and responding importers reported that sodium nitrite in different forms and grades are at least somewhat comparable in terms of producer and customer perceptions.[49]

Price. While acknowledging small differences in price between different forms (*e.g.*, flake product may be higher priced than liquid product) or grades (*e.g.*, technical grade product is lower priced than food grade) of sodium nitrite, Chemtrade indicates that overall prices for sodium nitrite in different forms and grades are "quite similar" and overlap due to the high

[45] Conference Tr. at 39-40 (McFarland).

[46] For instance, Chemtrade indicates that its sodium nitrite used in pigments/dyes, corrosion inhibitors, metal treating, and rubber chemicals can come in either dry or liquid form. Petitioner Postconference Br. at 7.

[47] The U.S. producer reported that sodium nitrite in liquid or dry form are "fully" interchangeable, while U.S. importers reported that these forms were "somewhat" interchangeable. CR/PR at Table D-1. The U.S. producer reported that food and technical grade sodium nitrite are "mostly" interchangeable. CR/PR at Table D-4.

[48] Petitioner Postconference Br. at 5; Conference Tr. at 20 (McFarland).

[49] The U.S. producer indicated that sodium nitrite in dry and liquid forms are perceived as fully comparable, while U.S. importers reported that such products are perceived as mostly or somewhat comparable. CR/PR at Table D-1. Regarding food and technical grades, the U.S. producer reported that such products were perceived as mostly comparable. CR/PR at Table D-4.

degree of interchangeability between different forms and grades of sodium nitrite.[50] Pricing data indicate that domestic prices for technical grade sodium nitrite in dry and liquid forms showed substantial overlap, while domestic prices for food grade sodium nitrite were slightly higher than domestic prices for technical grade sodium nitrite.[51] The responding U.S. producer and responding importers reported that prices between different forms and grades of sodium nitrite are at least somewhat comparable.[52]

Conclusion. In sum, all grades and forms of sodium nitrite share a common chemical formula, have similar properties, and are generally sold in concentrations of greater than 98 percent for the same range of end uses. The record further shows that all types of sodium nitrite within the U.S. are produced in the same production facility with the same equipment and employees, share common channels of distribution, and have at least some degree of interchangeability.[53] Finally, the record indicates that producers and customers perceive all forms and grades of sodium nitrite as being similar, and pricing data show that domestic prices

[50] Petitioner Postconference Br. at 8; Conference Tr. at 21-22 (McFarland).

[51] Quarterly domestic prices for product 1, technical grade in dry form, ranged from $*** to $*** per pound, while quarterly domestic prices for product 3, technical grade in liquid form, ranged from $*** to $*** per pound. Quarterly domestic prices for product 2, food grade product, ranged from $*** to $*** per pound. CR/PR at Table V-8.

[52] In comparing dry and liquid forms of domestic sodium nitrite, the U.S. producer reported that prices were fully comparable, and importers reported that they were somewhat comparable. CR/PR at Table D-1. Regarding comparisons of domestic food and technical grade sodium nitrite, the U.S. producer reported that prices were mostly comparable, and importers reported that they were somewhat comparable. CR/PR at Table D-4.

[53] Chemtrade's technical liquor by-product differs from other forms of sodium nitrite described in the scope, in that it is mixed with sodium nitrate and has more limited uses. Conference Tr. at 20 (McFarland). Nonetheless, technical liquor shares common production facilities, equipment, and employees with other forms of sodium nitrite, is sold through the same channels of distribution, and is interchangeable with other grades and forms of sodium nitrite in certain applications. Conference Tr. at 36-37 (Boonstra) (indicating that technical liquor could also be used in applications such as heat bath salts in which higher concentration sodium nitrite is used).

for different grades and forms of sodium nitrite have significant overlap. Based on these considerations, and the absence of any contrary argument, we define a single domestic like product consisting of all sodium nitrite, coextensive with the scope.

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

These investigations raise the issue of whether firms that dissolve dry sodium nitrite, sourced from outside suppliers, into solution engage in sufficient production-related activities to qualify as domestic producers.[55] In deciding whether a firm qualifies as a domestic producer of the domestic like product, the Commission generally analyzes the overall nature of a firm's U.S. production-related activities, although production-related activity at minimum levels could be insufficient to constitute domestic production.[56]

---

[54] 19 U.S.C. § 1677(4)(A).

[55] The issue of sufficient production-related activities did not arise in the 2008 investigations of sodium nitrite. In the context of arguing that competition was attenuated between subject imports and the domestic product because of differences in dry and liquid form, respondents indicated that importers or purchasers dissolving dry product into solution themselves was "impractical," which indicates that firms were not engaged in such activities at that time. *See 2008 Sodium Nitrite Investigations*, USITC Pub. 4029, at pgs. 20-21.

There is no related party issue in these investigations. ***. CR/PR at III-7, Table III-2.

[56] The Commission generally considers six factors: (1) source and extent of the firm's capital investment; (2) technical expertise involved in U.S. production activities; (3) value added to the product (Continued…)

Petitioner argues that firms that dissolve dry forms of sodium nitrite into solution do not engage in sufficient production-related activities.[57] Respondents do not address the definition of the domestic industry.[58]

Source and Extent of Capital Investment. Chemtrade argues that only a water tank is required for the dissolution of dry product into solution and that investment is otherwise minimal, and certainly much smaller than the investment needed to create a greenfield sodium nitrite plant.[59]

Technical Expertise Involved. Deepak describes the dissolution process as ***.[60] Chemtrade argues that this process is "exceedingly simple" and akin to dissolving salt in heated water.[61]

(…Continued)
in the United States; (4) employment levels; (5) quantity and type of parts sourced in the United States; and (6) any other costs and activities in the United States directly leading to production of the like product. No single factor is determinative and the Commission may consider any other factors it deems relevant in light of the specific facts of any investigation. *Crystalline Silicon Photovoltaic Cells and Modules from China*, Inv. Nos. 701-TA-481 and 731-TA-1190 (Final), USITC Pub. 4360 at 12-13 (Nov. 2012), *aff'd*, Changzhou Trina Solar Energy Co. v. USITC, 879 F. 3d 1377 (Fed. Cir. 2018).

[57] Petitioner Postconference Br. at 10-12.

[58] U.S. importer *** is the only importer that reported U.S. shipments of subject imports in liquid form, which suggests that it dissolved dry sodium nitrite into liquid form in the United States during the POI, given that sodium nitrite reportedly is only imported in dry form. *Compare* CR/PR at Table IV-4 *with* U.S. Importer Questionnaire, EDIS Doc. ***, at II-5c & II-6c; *see also* Conference Tr. at 22-23 (McFarland) (indicating that imports of sodium nitrite enter the U.S. in dry form given higher ocean freight costs for sodium nitrite in liquid form). Testimony from Chemtrade further indicates that many purchasers of its sodium nitrite in dry form subsequently dissolve the product into solution for internal consumption. *See* Conference Tr. at 22 (McFarland). *** did not complete a domestic producers' questionnaire response.

[59] Petitioner Postconference Br. at 11-12. Petitioner asserts that a greenfield sodium nitrite facility would require an investment of $*** and three to four years of studies and procurement.

[60] Deepak Postconference Br. at Att. A, pg. 18.

[61] Petitioner Postconference Br. at 10-11; Conference Tr. at 23 (McFarland). In the 2008 investigations of sodium nitrite, however, respondent parties noted that complications might arise in dissolving product into solution if an anti-caking agent were present. *2008 Sodium Nitrite Investigations*, USITC Pub. 4029, at pgs. 20-21.

Value Added. Petitioner argues that dissolving dry sodium nitrite into solution does not add value because the liquid form is still sold on the basis of the dry weight.[62] Pricing data indicate that domestic prices for technical grade sodium nitrite in liquid and dry forms have substantial overlap, and that prices for product in dry form have a slightly higher range than those in liquid form.[63]

Employment Levels. There is no information on the record concerning the employment levels of firms that dissolve dry forms of sodium nitrite into solution. Deepak indicates that dissolving dry sodium nitrite into solution ***.[64]

Quantity and Parts Sourced in the United States. The only known firm that appears to have dissolved dry forms of sodium nitrite into solution using sodium nitrite sourced from outside suppliers, U.S. importer ***.[65] Chemtrade acknowledges that the majority of purchasers of its dry sodium nitrite also dissolve the product into solution for internal consumption, but there is no information on the identity of such purchasers or the extent to which they sourced sodium nitrite from domestic versus subject sources.[66] Deepak claims that ***.[67]

Conclusion. While the record of this preliminary phase is limited regarding the operations of firms that dissolve dry sodium nitrite sourced from outside suppliers into

[62] Petitioner Postconference Br. at 12.

[63] CR/PR at Table V-8. Domestic prices for product 1, technical grade in dry form, ranged from $*** per pound to $*** per pound during the POI; domestic prices for product 3, technical grade in liquid form, ranged from $*** per pound to $*** per pound during the POI. *Id*.

[64] Deepak Postconference Br. at Att. A, pg. 18.

[65] U.S. Importer Questionnaire, EDIS Doc. ***, at Section II.

[66] Conference Tr. at 22 (McFarland).

[67] Deepak Postconference Br. at Att. A, pg. 18.

solution, the information available indicates that such firms do not engage in sufficient production-related activities to qualify as domestic producers. The process of dissolving dry sodium nitrite into solution appears to have little complexity relative to the production of sodium nitrite, adds little value, and requires minimal capital investment and employment. Although Chemtrade acknowledges that some purchasers may dissolve domestically produced sodium nitrite into solution for their own internal consumption, the only firm reporting U.S. commercial shipments of dry sodium nitrite sourced from outside suppliers that has been dissolved into solution, U.S. importer ***. Based on these considerations, and in the absence of any contrary argument, we find that U.S. firms that dissolve dry forms of sodium nitrite sourced from outside suppliers into solution do not engage in sufficient production-related activities to qualify as domestic producers.

In sum, based on our definition of the domestic like product, we define the domestic industry as all domestic producers of sodium nitrite, but not firms that dissolve dry forms of sodium nitrite sourced from outside suppliers into solution.

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.[68] During the most recent 12-month period preceding the filing of the petitions in these

[68] 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)).

investigations (January 2021 through December 2021), imports from India accounted for 83.8 percent of total imports, and imports from Russia accounted for 6.4 percent of total imports.[69] Because imports with respect to all investigations are not less than the 3.0 percent negligibility threshold applicable to antidumping duty investigations and countervailing duty investigations, we find that imports from India and Russia subject to the antidumping and countervailing duty investigations are not negligible.

VI. Cumulation

For purposes of evaluating the volume and effects for a determination of reasonable indication of material injury by reason of subject imports, section 771(7)(G)(i) of the Tariff Act requires the Commission to cumulate subject imports from all countries as to which petitions were filed and/or investigations self-initiated by Commerce on the same day, if such imports compete with each other and with the domestic like product in the U.S. market. In assessing whether subject imports compete with each other and with the domestic like product, the Commission generally has considered four factors:

> (1) the degree of fungibility between subject imports from different countries and between subject imports and the domestic like product, including consideration of specific customer requirements and other quality related questions;

[69] CR/PR at Table IV-3. Although imports from India and Russia are subject to both antidumping and countervailing duty investigations, the volume of subject imports from each country is the same with respect to both investigations. *Id.* Nonetheless, the Commission considers negligibility separately for antidumping and countervailing duty investigations involving imports from the same subject country. *See, e.g., Nucor Corp. v. United States*, Slip Op. 18-13 at 20 (Ct. Int'l Trade Feb. 28, 2018), *aff'g Certain Hot-Rolled Steel Flat Products from Australia, Brazil, Japan, Korea, the Netherlands, Turkey, and the United Kingdom*, Inv. Nos. 701-TA-545-547 and 731-TA-1291-1297 (Final), USITC Pub. 4638 at 13 (Sept. 2016).

(2) the presence of sales or offers to sell in the same geographic markets of subject imports from different countries and the domestic like product;

(3) the existence of common or similar channels of distribution for subject imports from different countries and the domestic like product; and

(4) whether the subject imports are simultaneously present in the market.[70]

While no single factor is necessarily determinative, and the list of factors is not exclusive, these factors are intended to provide the Commission with a framework for determining whether the subject imports compete with each other and with the domestic like product.[71] Only a "reasonable overlap" of competition is required.[72]

A. Arguments of the Parties

Petitioner's Arguments. Petitioner argues that the Commission should cumulate subject imports from India and Russia because the record shows that there is a reasonable overlap of competition between and among subject imports from both countries and the domestic like product. Specifically, Chemtrade claims that sodium nitrite from India, Russia, and the United States is generally fungible, sold through the same channels of distribution, sold in overlapping geographic regions, and simultaneously present in the U.S. market over the POI.[73]

Respondents' Arguments. Respondents do not address the issue of cumulation.

---

[70] *See Certain Cast-Iron Pipe Fittings from Brazil, the Republic of Korea, and Taiwan*, Inv. Nos. 731-TA-278-80 (Final), USITC Pub. 1845 (May 1986), *aff'd*, *Fundicao Tupy, S.A. v. United States*, 678 F. Supp. 898 (Ct. Int'l Trade), *aff'd*, 859 F.2d 915 (Fed. Cir. 1988).

[71] *See*, *e.g.*, *Wieland Werke, AG v. United States*, 718 F. Supp. 50 (Ct. Int'l Trade 1989).

[72] The Statement of Administrative Action (SAA) to the Uruguay Round Agreements Act (URAA), expressly states that "the new section will not affect current Commission practice under which the statutory requirement is satisfied if there is a reasonable overlap of competition." H.R. Rep. No. 103-316, Vol. I at 848 (1994) (*citing Fundicao Tupy*, 678 F. Supp. at 902); *see Goss Graphic Sys., Inc. v. United States*, 33 F. Supp. 2d 1082, 1087 (Ct. Int'l Trade 1998) ("cumulation does not require two products to be highly fungible"); *Wieland Werke, AG*, 718 F. Supp. at 52 ("Completely overlapping markets are not required.").

[73] Petitioner Postconference Br. at 13-16.

B. Analysis

As an initial matter, Petitioner filed the antidumping and countervailing duty petitions with respect to both subject countries on the same day, January 13, 2022.[74]

Fungibility. U.S. producer Chemtrade reported that subject imports from each subject country were ***.[75] U.S. importers reported that subject imports from India and Russia were sometimes interchangeable, and a majority of U.S. importers reported that subject imports from both sources were at least sometimes interchangeable with domestically produced sodium nitrite.[76] Furthermore, the responding domestic producer and importers reported U.S. shipments of sodium nitrite ***,[77] and ***.[78]

Channels of Distribution. Domestically produced sodium nitrite and imports from each subject country were sold through the same channels of distribution, to distributors and end users.[79]

Geographic Overlap. Domestically produced sodium nitrite and imports from each subject country were sold in the *** geographic markets of the United States during the POI.[80]

---

[74] None of the statutory exceptions to cumulation applies.

[75] CR/PR at Table II-6.

[76] CR/PR at Table II-7. Three of four responding U.S. importers reported that the domestic like product and subject imports from India were at least sometimes interchangeable, while all responding importers reported that the domestic product and subject imports from Russia were sometimes interchangeable. *Id*. Deepak acknowledges that the domestic like product and subject imports from both India and Russia are ***. Deepak Postconference Br. at Att. A, pg. 19-20.

[77] CR/PR at Table IV-4. The responding domestic producer and responding U.S. importers reported U.S. shipments of the following three types of sodium nitrite from all three sources in 2020: granular less than 99 percent pure, granular all purity levels, and liquid form. *Id*.

[78] CR/PR at Table V-8.

[79] CR/PR at Table II-1. The domestic producer sold primarily to ***, although the proportion of its sales to *** increased over the POI. U.S. shipments of subject imports from India were sold to distributors and end users in similar proportions, while U.S. shipments of subject imports from Russia were present in both channels in varying proportions during the POI. *Id*.

The vast majority of subject imports from both sources entered the U.S. through Eastern borders of entry, specifically through Charleston, South Carolina.[81]

Simultaneous Presence in Market. Domestically produced sodium nitrite and subject imports from India were present in the U.S. market throughout the POI.[82] Although subject imports from Russia had a sporadic presence in 2018 and 2019, they were present in the U.S. market throughout most of 2020 and interim 2021.[83]

Conclusion. Because the record of the preliminary phase of the investigations indicates there is a reasonable overlap of competition between and among imports from each subject country and the domestic like product, we cumulate subject imports from India and Russia for our analysis of material injury by reason of subject imports.

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

A. Legal Standard

In the preliminary phase of antidumping and countervailing duty investigations, the Commission determines whether there is a reasonable indication that an industry in the United States is materially injured or threatened with material injury by reason of the imports under investigation.[84] 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

---

(…Continued)

[80] CR/PR at Table II-2. Questionnaire respondents reported subject imports from Russia being sold only in the Northeast and Midwest geographic markets; respondents indicated that ***. *Id*.

[81] CR/PR at IV-13 & Table IV-6.

[82] CR/PR at Tables IV-7, V-5-7 (showing quarterly shipments of domestic sodium nitrite).

[83] CR/PR at Table IV-7. Subject imports from Russia were present in the U.S. market for two months of 2018, five months of 2019, 11 months of 2020, and six of the nine months for interim 2021. *Id*.

[84] 19 U.S.C. §§ 1671b(a), 1673b(a).

domestic producers of the domestic like product, but only in the context of U.S. production operations.[85] The statute defines "material injury" as "harm which is not inconsequential, immaterial, or unimportant."[86] 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.[87] 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."[88]

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,[89] 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.[90] 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

[85] 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).

[86] 19 U.S.C. § 1677(7)(A).

[87] 19 U.S.C. § 1677(7)(C)(iii).

[88] 19 U.S.C. § 1677(7)(C)(iii).

[89] 19 U.S.C. §§ 1671b(a), 1673b(a).

[90] *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).

cause of injury and that there is a sufficient causal, not merely a temporal, nexus between subject imports and material injury.[91]

In many investigations, there are other economic factors at work, some or all of which may also be having adverse effects on the domestic industry. Such economic factors might include nonsubject imports; changes in technology, demand, or consumer tastes; competition among domestic producers; or management decisions by domestic producers. The legislative history explains that the Commission must examine factors other than subject imports to ensure that it is not attributing injury from other factors to the subject imports, thereby inflating an otherwise tangential cause of injury into one that satisfies the statutory material injury threshold.[92] In performing its examination, however, the Commission need not isolate the injury caused by other factors from injury caused by unfairly traded imports.[93] Nor does

[91] 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).

[92] 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.

[93] 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 (Continued…)

the "by reason of" standard require that unfairly traded imports be the "principal" cause of injury or contemplate that injury from unfairly traded imports be weighed against other factors, such as nonsubject imports, which may be contributing to overall injury to an industry.[94] It is clear that the existence of injury caused by other factors does not compel a negative determination.[95]

Assessment of whether material injury to the domestic industry is "by reason of" subject imports "does not require the Commission to address the causation issue in any particular way" as long as "the injury to the domestic industry can reasonably be attributed to the subject imports."[96] 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

---

(…Continued)
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.").

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

[95] *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.").

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

sources to the subject imports." [97] The Federal Circuit has examined and affirmed various Commission methodologies and has disavowed "rigid adherence to a specific formula."[98]

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.[99] Congress has delegated this factual finding to the Commission because of the agency's institutional expertise in resolving injury issues.[100]

B. Conditions of Competition and the Business Cycle

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

1. Demand Conditions

As noted above, sodium nitrite is used as a chemical additive in a wide array of applications, including dyes, metal treatments, and food additives.[101] U.S. demand for sodium nitrite thus depends on the demand for these downstream products produced in the United States.[102] Sodium nitrite generally accounts for a small share of the costs for these downstream

---

[97] *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.

[98] *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.").

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

[100] *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.").

[101] CR/PR at II-7.

[102] CR/PR at II-7.

products, but these costs can vary, ranging between 0.1 percent to 2.0 percent for pigments, 6.5 percent for the creation of synthetic dyes, and 66.0 percent for H_2S scavengers.[103] All responding firms indicated that there are no substitutes for sodium nitrite.[104]

*** and five of eight responding U.S. importers reported that demand for sodium nitrite was not subject to business cycles, while three importers reported that demand was subject to seasonal effects or inventory levels.[105] U.S. producer Chemtrade reported that U.S. demand *** during the POI, while U.S. importers reported varying demand trends.[106] The record indicates that apparent U.S. consumption declined irregularly between 2018 and 2020, initially declining from *** pounds in 2018 to *** pounds in 2019, before increasing to *** pounds in 2020, a level *** percent lower than in 2018. Apparent U.S. consumption was *** percent higher in January-September 2021 (*** pounds) than in interim 2020 (*** pounds).[107]

2. Supply Conditions

There are two domestic producers of sodium nitrite, Chemtrade and SABIC, but only Chemtrade provided data in the preliminary phase of these investigations.[108] The domestic industry was the largest supplier of the U.S. market during the POI, but its share declined throughout the period. The domestic industry's share of apparent U.S. consumption declined

[103] CR/PR at II-7. H_2S (hydrogen sulfide) scavengers are used to eliminate odor emissions in the oil and gas industry. *Id*.

[104] CR/PR at II-8.

[105] CR/PR at II-7.

[106] CR/PR at Table II-4. Of seven responding U.S. importers, two reported that demand increased, two that it did not change, one that it decreased, and two that it fluctuated. These varied responses reflect the varied end uses for sodium nitrite, with importer *** for instance specifying that demand for sodium nitrite in water treatment and oil fields increased during the POI. *Id*.

[107] CR/PR at Tables IV-8 & C-1.

[108] CR/PR at I-4. Chemtrade estimates that SABIC accounts for less than *** percent of domestic production. CR/PR at VI-1 n.2.

from *** percent in 2018 to *** percent in 2019 and *** percent in 2020; its share was also lower in interim 2021 (*** percent) than in interim 2020 (*** percent).[109] The industry's production capacity was steady throughout the POI, remaining at *** pounds from 2018-2020 and at *** pounds in the interim periods, and this capacity was sufficient to supply apparent U.S. consumption throughout the POI.[110] Chemtrade reported that ***, while importer *** reported that ***.[111]

Cumulated subject imports accounted for the second largest share of apparent U.S. consumption, and this share increased throughout the POI. Cumulated subject imports increased as a share of apparent U.S. consumption from *** percent in 2018 to *** percent in 2019 and to *** percent in 2020. Their market share was also higher in interim 2021 (*** percent) than in interim 2020 (*** percent).[112]

Nonsubject imports accounted for the smallest share of apparent U.S. consumption during the POI. Nonsubject imports as a share of apparent consumption was steady at *** percent in 2018 and 2019, before increasing slightly in 2020 to *** percent. Their market share was higher in interim 2021 (*** percent) than in interim 2020 (*** percent).[113] The vast majority of nonsubject imports during the POI were from Canada.[114]

[109] CR/PR at Tables IV-8 & C-1.
[110] CR/PR at Table C-1.
[111] CR/PR at II-6-7; *see also* Royce Postconference Br. at Exh. 1 (correspondence between ***).
[112] CR/PR at Tables IV-8 & C-1.
[113] CR/PR at Tables IV-8 & C-1.
[114] CR/PR at IV-2 n.4. Chemtrade reported that it is unaware of any sodium nitrite production in Canada, as further discussed in section VII.E below. Petitioner Postconference Br. at 27 n.109.

3. Substitutability and Other Conditions

The record in these preliminary phase investigations indicates that there is a moderately high degree of substitutability between cumulated subject imports and the domestic like product.[115] Factors contributing to the substitutability of subject and domestic sodium nitrite include similarities in the quality and forms of sodium nitrite available from the three sources, as well as the high degree of interchangeability between subject and domestic sodium nitrite of the same type.[116] As discussed above, Chemtrade reported that imports from each subject country were *** interchangeable with each other as well as with domestically produced sodium nitrite, while U.S. importer responses indicated that such products were at least sometimes interchangeable.[117] Furthermore, Chemtrade and responding importers reported U.S. shipments of similar types of sodium nitrite in 2020.[118]

We also find that price is an important factor in purchasing decisions, among other important factors. Responding purchasers identified quality, price, and availability/supply as the most important purchasing factors for sodium nitrite, with three responding purchasers

[115] CR/PR at II-8.

[116] CR/PR at II-8-9. Factors that may reduce substitutability between domestic and subject imported sodium nitrite include the unavailability of food grade product from subject sources, differences in interchangeability and lead times, and reports by some importers of being unable to source from domestic producers. *Id*.

[117] CR/PR at Tables II-6 & II-7. Three of four responding U.S. importers reported that the domestic like product and subject imports from India were at least sometimes interchangeable, and all responding importers reported that the domestic product and subject imports from Russia were sometimes interchangeable. *Id*.

[118] CR/PR at Tables IV-4 & IV-5. In 2020, Chemtrade and responding importers reported U.S. shipments of domestic and subject sodium nitrite of the same five types, including ***. *Id.* Chemtrade reported U.S. shipments of only two types of sodium nitrite for which there were no reported U.S. shipments of cumulated subject imports, sodium nitrite in *** and food grade sodium nitrite. *Id*.

identifying price as among their three most important purchasing factors.[119] Chemtrade reported that differences other than price were only *** important when comparing domestically produced sodium nitrite and subject imports, and responding U.S. importers reported that such differences were only *** important when comparing domestically produced sodium nitrite with subject imports from Russia.[120] On the other hand, responding U.S. importers reported that such differences were always or frequently important when comparing domestically produced sodium nitrite with subject imports from India.[121]

Sodium nitrite is primarily sold from inventory. Chemtrade reported that *** of its commercial shipments were from inventory, with lead times averaging *** days. Responding importers reported that 92.2 percent of their commercial shipments were from U.S. inventories, with lead times averaging 4 days.[122] *** the majority of responding importers reported selling sodium nitrite on a transaction-by-transaction basis.[123] Further, *** importers reported selling virtually all sodium nitrite on the spot market.[124]

The principal raw materials used to produce sodium nitrite are ammonia and either soda ash (a process used by Chemtrade, which also produces a technical liquor by-product) or

[119] CR/PR at Table II-5. Of responding purchasers, five identified quality as an important purchasing factor, four identified availability/supply, and three identified price. *Id*.

[120] CR/PR at Table II-9. When comparing subject imports from Russia with the domestic like product, two importers reported that non-price differences were sometimes important. *Id*.

[121] CR/PR at Table II-9. When comparing domestic sodium nitrite and subject imports from India, three importers reported that non-price differences were always important and one that such differences were frequently important. *Id*.

[122] CR/PR at II-10. The remaining 7.8 percent of importers' commercial U.S. shipments were from foreign inventories, with lead times averaging 90 days. *Id*.

[123] CR/PR at Table V-3. One importer reported using both set price lists and transaction-by-transaction methods, and one reported using other pricing methods. *Id*. & CR/PR at V-5.

[124] CR/PR at Table V-4. ***. Otherwise, all other sales were in the spot market. *Id*.

caustic soda (a process used by foreign producer Deepak).[125] Ammonia prices were steady from 2018 through 2020, but increased sharply in 2021, resulting in such prices being *** percent higher in September 2021 than in January 2018.[126] Chemtrade also reported using natural gas to generate steam in its production process, and prices for natural gas fluctuated from 2018 to 2020 before increasing sharply in 2021, resulting in prices that were 33.3 percent higher in September 2021 than in January 2018.[127]

In August 2008, antidumping duties were imposed on imports of sodium nitrite from China and Germany, and countervailing duties were imposed on imports of sodium nitrite from China; such duties remain in place.[128]

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."[129]

The volume of cumulated subject imports increased during the POI, even as apparent U.S. consumption declined irregularly from 2018 to 2020. Cumulated subject import volume declined from 11.3 million pounds in 2018 to 10.7 million pounds in 2019 before increasing to

[125] CR/PR at V-1; *see also* Royce Postconference Br. at 11-12. As previously noted, SABIC primarily produces plastics/polymers, and sodium nitrite is a by-product of this production. CR/PR at VI-1 n.2.

[126] CR/PR at V-1 & Figure V-1 & Table V-1. The increase in ammonia prices in 2021 resulted from increasing prices for natural gas (used in ammonia production) and increased demand for fertilizer, which uses ammonia. *Id*.

[127] CR/PR at V-1-3 & Figure V-2 & Table V-2. Natural gas prices peaked in February 2021 due to winter storms in Texas and Oklahoma. While natural gas prices declined in March 2021 after this peak, prices subsequently increased throughout the remainder of the POI. *Id*. at V-3.

[128] CR/PR at I-4-5.

[129] 19 U.S.C. § 1677(7)(C)(i).

14.8 million pounds in 2020, a level 31.8 percent higher than in 2018. Cumulated subject imports were 29.8 percent higher in interim 2021, at 13.1 million pounds, than in interim 2020, at 10.1 million pounds.[130]

Cumulated subject imports' share of apparent U.S. consumption similarly increased, from *** percent in 2018 to *** percent in 2019 and *** percent in 2020. Their market share was *** percentage points higher in interim 2021, at *** percent, than in interim 2020, at *** percent.[131]

Cumulated subject imports also increased as a ratio to domestic production during the POI, from *** percent in 2018 to *** percent in 2019 and *** percent in 2020. The ratio of subject imports to domestic production was higher in interim 2021, at *** percent, than in interim 2020, at *** percent.[132]

Based on the foregoing, we conclude that the volume of cumulated subject imports and the increase in that volume are significant both in absolute terms and relative to U.S. consumption, and that the increase in the volume of cumulated subject imports is also significant relative to U.S. production.

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

[130] CR/PR at Tables IV-8 & C-1.
[131] CR/PR at Tables IV-8 & C-1.
[132] CR/PR at Table IV-2.

(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.[133]

As discussed above, we find that there is a moderately high degree of substitutability between the domestic like product and cumulated subject imports and that price is an important consideration in purchasing decisions, among other important considerations.

The Commission requested that U.S. producers and importers provide quarterly data for the total quantity and f.o.b. value of their sales of three sodium nitrite products to unrelated customers from January 2018 through September 2021.[134] Chemtrade and five importers reported usable pricing data for sales, although not all firms reported data for all products or for all quarters.[135] Pricing data reported by these firms accounted for *** percent of the domestic industry's U.S. shipments, *** percent of U.S. shipments of subject imports from India, and *** percent of U.S. shipments of subject imports from Russia in 2020.[136]

According to these pricing data, cumulated subject imports undersold the domestic like product in 25 of 36 quarterly comparisons (69.4 percent of the time) involving *** pounds, at

---

[133] 19 U.S.C. § 1677(7)(C)(ii).

[134] The pricing products were defined as follows:

Product 1.— minimum sodium nitrite component of 98.0 percent. Sodium nitrite may or may not contain anti-caking agent. Sodium nitrite may or may not be sold in prill form. Do not include flake, liquor, or products that meet the product 2 definition;

Product 2.— minimum sodium nitrite component of 99.0 percent. Certified as complying with the Food Chemical Codex ("FCC") and current Good Manufacturing Practice ("cGMP"). Sodium nitrite may or may not contain an anti-caking agent. Sodium nitrite may or may not be sold in prill form. Do not include flake or liquor;

Product 3.— sodium nitrite in aqueous solution, with a nominal concentration between 38 and 42 percent.

CR/PR at V-6.

[135] CR/PR at V-6-7. No importers reported pricing data for product 2. *Id*.

[136] CR/PR at V-6.

underselling margins ranging from *** percent to *** percent and averaging *** percent.[137] Subject imports oversold the domestic like product in the remaining 11 comparisons (30.6 percent of the time) involving *** pounds, at overselling margins ranging from *** percent to *** percent and averaging *** percent.[138]

We have also considered purchasers' responses to lost sales and lost revenue allegations. Four of seven purchasers reported purchasing subject imports instead of the domestic like product during the POI, with one of these firms reporting that subject imports were lower priced and that price was a primary reason for purchasing subject imports instead of the domestic like product.[139] This firm estimated that it purchased *** pounds of subject imports instead of the domestic like product due to price.[140] Although no purchasers reported that domestic producers reduced prices to compete with subject imports, purchaser *** acknowledged that it shifted purchases to subject imports as domestic prices became higher than subject import prices in interim 2021.[141]

[137] CR/PR at Table V-9 & V-14-15.

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

[139] CR/PR at Table V-13. Other firms that reported purchasing subject imports instead of the domestic like product reported non-price reasons for such purchases, including ***. *Id*.; *see also* Royce Postconference Br. at Exh. 4 (correspondence with purchaser ***). Nonetheless, the purchaser that reported purchasing subject imports due to their lower price, ***, was the *** of sodium nitrite responding to Commission questionnaires, accounting for approximately *** percent of total purchases by responding firms. *Calculated from* CR/PR at Table V-11. Further, the reported quantity of these purchases, *** pounds, was the entirety of this firms' subject import purchases during the POI. CR/PR at V-17 n.14.

[140] CR/PR at Table V-13. The quantity of confirmed lost sales corresponded to *** percent of the total aggregate *** pounds of sodium nitrite purchases reported by seven purchasers that responded to the Commission's questionnaires. *Id*. No purchaser reported that domestic producers reduced prices to compete with subject imports.

[141] CR/PR at V-18-19. *** acknowledged that in 2021, when it shifted purchases from domestic product to subject imports, domestic prices were 10 percent higher than subject import prices. *Id*.

Given the moderately high degree of substitutability between the domestic like product and subject imports, as well as the importance of price in purchasing decisions, we find subject import underselling to be significant. Subject import underselling caused a *** percentage point shift in market share from the domestic industry to subject imports from 2018 to 2020, and a further *** percentage point shift from the domestic industry to subject imports in interim 2021 compared to interim 2020.[142] Responding purchasers reported that their purchases of domestically produced sodium nitrite declined as a share of their total purchases by *** percentage points from 2018 to 2020, while the subject import share of their purchases increased by the same amount.[143]

We have also examined available data on price trends. U.S. prices for sodium nitrite generally increased between January 2018 and September 2021. Domestic prices increased for each of the pricing products over this period, with prices increasing *** percent for product 1, *** percent for product 2, and *** percent for product 3.[144] Prices for subject imports from India also increased for products 1 and 3, with an increase of *** percent for product 1 and *** percent for product 3.[145]

We have also considered whether cumulated subject imports prevented price increases that would have otherwise occurred to a significant degree. The domestic industry's ratio of cost of goods sold ("COGS") to net sales value increased irregularly between 2018 and 2020,

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

[143] CR/PR at Table V-11.

[144] CR/PR at Table V-8.

[145] CR/PR at Table V-8. There was not sufficient pricing data for subject imports from Russia to calculate a price change over the period. No importers reported pricing data for subject imports from Russia for products 1 or 2, and importers reported only *** quarters of pricing data for product 3. CR/PR at V-14 n.11.

initially increasing *** from *** percent in 2018 to *** percent in 2019 before decreasing to *** percent in 2020, a level *** percentage points higher than in 2018.[146] The industry's ratio of COGS to net sales was also *** higher in interim 2021 (*** percent) than in interim 2020 (*** percent).[147] Chemtrade argues that in order to compete with subject imports, it lowered its prices in 2016 and kept them low into 2018 and 2019 in order to attempt to spread its fixed costs over a higher production volume, but continued to lose sales to subject imports.[148] As the domestic industry's unit COGS increased between 2018 and 2019, the average unit value of its net sales declined[149] and apparent U.S. consumption declined by *** percent during this period,[150] and the industry experienced a cost-price squeeze. Chemtrade claims that new management subsequently increased prices in 2020 and interim 2021 in an effort to cover its increasing costs, particularly as raw material costs increased in interim 2021 compared

[146] CR/PR at Tables VI-1 & C-1.

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

[148] Petitioner Postconference Br. at 36; Conference Tr. at 14 (Boonstra). We note that the domestic industry lost *** percentage points of market share directly to subject imports between 2018 and 2019. CR/PR at Table C-1. Cumulated subject imports were lower priced than the domestic product in 9 of 16 quarterly comparisons in 2018 and 2019. CR/PR at Tables V-5 – V-7.

[149] The domestic industry's unit COGS increased from $*** per pound in 2018 to $*** per pound in 2019, largely due to increasing per unit ***. CR/PR at Table VI-1, VI-6 n.11. Its average unit value of net sales declined from $*** per pound in 2018 to $*** per pound in 2019. CR/PR at Table VI-1.

[150] The decrease in apparent U.S. consumption between 2018 and 2019, when U.S. consumption declined *** percent, from *** pounds in 2018 to *** pounds in 2019 corresponds with the sharpest increase in Chemtrade's ratio of COGS to net sales during the POI, from *** percent to *** percent. CR/PR at Table C-1.

to interim 2020,[151] but consequently lost sales and market share to subject imports.[152] In any final phase of these investigations, we will further investigate whether subject imports prevented price increases that would have otherwise occurred to a significant degree.

Based on the record in the preliminary phase of these investigations, we find that cumulated subject imports significantly undersold the domestic like product and took sales and market share from the domestic industry. Accordingly, we find that subject imports had significant price effects.

E. Impact of the Subject Imports[153]

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.

[151] As noted above, prices for raw materials, including ammonia and natural gas, increased sharply in 2021. CR/PR at V-1-3. At the same time, prices of the domestically produced pricing products increased. CR/PR at Tables V-5 - V-7. The data further show that the industry's unit net sales value as well as its unit COGS were both $*** per pound higher between the interim periods while its unit raw material costs were $*** per pound higher. CR/PR at Table VI-1.

[152] *See, e.g.*, Petitioner Postconference Br. at 37-38; Conference Tr. at 14 (Boonstra); CR/PR at V-19 (purchaser *** reporting that domestic price increases later in the POI resulted in domestic prices being 10 percent higher than subject imports in September 2021, a period in which it shifted sales to subject imports).

[153] In its notice initiating the antidumping duty investigations on sodium nitrite from India and Russia, Commerce reported estimated dumping margins of 53.43 to 153.30 percent for imports from India, and an estimated dumping margin of 207.17 percent for imports from Russia. *Sodium Nitrite from India and the Russian Federation: Initiation of Less-Than-Fair-Value Investigations*, 87 Fed. Reg. 7122, 7125 (February 8, 2022).

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."[154]

As apparent U.S. consumption declined irregularly from 2018 to 2020, the domestic industry lost *** percentage points of market share to increasing volumes of cumulated subject imports, and experienced declines in production, shipments, sales, and other performance indicators. Notwithstanding higher apparent U.S. consumption in interim 2021 compared to interim 2020, the industry's performance continued to worsen, according to many measures, as the industry lost an additional *** percentage points of market share to subject imports.

The domestic industry's declining sales and market share contributed to declining production, capacity utilization, and U.S. shipments during the POI. The domestic industry's market share declined throughout the POI, from *** percent in 2018 to *** percent in 2019 and *** percent in 2020; it was *** percent in interim 2021, down from *** percent in interim 2020.[155] Consequently, while the domestic industry's production capacity remained steady,[156] the industry's capacity utilization,[157] production,[158] and U.S. shipments[159] all declined between

[154] 19 U.S.C. § 1677(7)(C)(iii). This provision was amended by the Trade Preferences Extension Act of 2015, Pub. L. 114-27.

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

[156] The domestic industry's average production capacity was *** pounds from 2018 to 2020, and *** pounds in interim 2020 and interim 2021. CR/PR at Table III-4.

[157] The domestic industry's capacity utilization declined from *** percent in 2018 to *** percent in 2019 and to *** percent in 2020. It was higher in interim 2021 (*** percent) than in interim 2020 (*** percent). CR/PR at Table III-4.

[158] The domestic industry's production declined from *** pounds in 2018 to *** pounds in 2019 to *** pounds in 2020. Its production was higher in interim 2021 (*** pounds) than in interim 2020 (*** pounds). CR/PR at Table III-4.

[159] The domestic industry's U.S. shipments declined from *** pounds in 2018 to *** pounds in 2019 to *** pounds in 2020. U.S. shipments also declined from *** pounds in interim 2020 to *** pounds in interim 2021. The industry also reported export shipments, which remained below *** percent of its total shipments throughout the POI. These export shipments initially increased from *** (Continued…)

2018 and 2020. The industry's U.S. shipments were lower in interim 2021 compared to interim 2020, while its capacity and rate of capacity utilization were higher. Its inventories declined between 2018 and 2020, but were higher in interim 2021 compared to interim 2020.[160]

The domestic industry's number of production-related workers ("PRWs") and total hours worked were relatively steady over the POI, while wages paid and hourly wages increased. Productivity, however, declined between 2018 and 2020, as a steady number of workers were utilized for declining levels of production, and unit labor costs also increased between 2018 and 2020.[161] The industry's PRWs, total hours worked, hourly wages paid, and productivity were higher in interim 2021 compared to interim 2020.

The domestic industry's declining sales and market share also impacted its financial performance, by reducing its revenues and increasing its unit costs. The industry's net sales value declined between 2018 and 2020, but was higher in interim 2021 compared to interim

---

(…Continued)
pounds in 2018 to *** pounds in 2019, before declining to *** pounds in 2020; export shipments were also lower in interim 2021 (*** pounds) than in interim 2020 (*** pounds). CR/PR at Table III-5.

[160] The domestic industry's end-of-period inventories decreased from *** pounds in 2018 to *** pounds in 2019 to *** pounds in 2020; end-of-period inventories were *** pounds in interim 2021, up from *** pounds in interim 2020. The industry's ratio of inventories to U.S. shipments fluctuated during the POI, initially increasing from *** percent in 2018 to *** percent in 2019 before declining to *** percent in 2020; its ratio was *** percent in interim 2021, up from *** percent in interim 2020. CR/PR at Table III-6. Chemtrade reported that the increase in its inventories in interim 2021 stemmed from ***. CR/PR at III-7 n.6.

[161] The domestic industry's PRWs totaled *** in 2018, *** in 2019, and *** in 2020; PRWs were higher in interim 2021 (***) than in interim 2020 (***). Total hours worked were *** in 2018, *** in 2019, and *** in 2020; hours worked were higher in interim 2021 (***) than in interim 2020 (***). Wages paid increased from $*** in 2018 to $*** in 2019 and to $*** in 2020; they were higher in interim 2021 ($***) than in interim 2020 ($***). Hourly wages increased from $*** in 2018 to $*** in 2019 and $*** in 2020; they were also higher in interim 2021 ($***) than in interim 2020 ($***). Productivity declined from *** pounds per hour in 2018 to *** pounds per hour in 2019 and *** pounds per hour in 2020; productivity was higher in interim 2021 (*** pounds per hour) than in interim 2020 (*** pounds per hour). Unit labor costs increased from $*** per pound in 2018 to $*** in 2019 and to $*** in 2020; unit labor costs were lower in interim 2021 ($*** than in interim 2020 ($***). CR/PR at Table III-7.

2020.[162] Similarly, the industry's gross profit declined irregularly between 2018 and 2020, with the lowest level experienced in 2019, but was higher in interim 2021 compared to interim 2020.[163] The industry's operating income and ratio of operating income to net sales also declined irregularly between 2018 and 2020, reaching their lowest levels in 2019, but were also lower in interim 2021 than in interim 2020.[164] The industry's net income, ratio of net income to net sales, and return on assets exhibited similar declining trends.[165] The industry's capital expenditures declined between 2018 and 2020, but were higher in interim 2021 than in interim 2020.[166] In addition, the domestic industry reported experiencing negative effects on investment due to subject imports.[167]

---

[162] The domestic industry's total net sales declined from $*** in 2018 to $*** in 2019 and to $*** in 2020; total net sales were higher in interim 2021 ($***) than in interim 2020 ($***). CR/PR at Table VI-1.

[163] The domestic industry's gross profit declined from $*** in 2018 to $*** in 2019, before increasing to $*** in 2020; gross profit was higher in interim 2021 ($***) than in interim 2020 ($***). CR/PR at Table VI-1.

[164] The domestic industry's operating income declined from $*** in 2018 to *** in 2019, and increased to $*** in 2020; operating income was lower in interim 2021 ($***) than in interim 2020 ($***). CR/PR at Table VI-1. Its operating income as a share of net sales declined from *** percent in 2018 to *** percent in 2019, and increased to *** percent in 2020; the ratio was lower in interim 2021 (*** percent) than in interim 2020 (*** percent. CR/PR at Table VI-1.

[165] The domestic industry's net income declined from *** in 2018 to *** in 2019, and increased to *** in 2020, a lower level than in 2018. Net income was lower in interim 2021, at ***, than in interim 2020, at ***. The industry's ratio of net income to sales declined from *** percent in 2018 to *** percent in 2019 and increased to *** percent in 2020, a lower level than 2018. It was lower in interim 2021, at *** percent, than in interim 2020, at *** percent. CR/PR at Table VI-1. The domestic industry also reported declining total net assets from 2018 to 2020, with reported assets declining from $*** in 2018 to $*** in 2019 and $*** in 2020. Its operating return on assets declined irregularly from 2018 to 2020, initially declining from *** percent in 2018 to *** percent in 2019, before increasing to *** percent in 2020, a lower level than in 2018. CR/PR at Table VI-7.

[166] The domestic industry's capital expenditures declined from $*** in 2018 to $*** in 2019, before increasing to $*** in 2020, a lower level than in 2018. Capital expenditures were higher in interim 2021 ($***) than in interim 2020 ($***). CR/PR at Table VI-5. Chemtrade reported that capital expenditures included ***. CR/PR at Table VI-6. The industry had *** during the POI. *Id*. at VI-9.

[167] CR/PR at Table VI-10. Negative effects on investment reported by Chemtrade include ***. *Id*.

As discussed above, we have found that cumulated subject import volume and market share increased significantly during the POI. We have also found that subject imports significantly undersold the domestic like product during the period, taking sales and market share from the domestic industry. The shift in market share from the domestic industry to subject imports during the POI contributed to the industry's declining performance in terms of production, capacity utilization, U.S. shipments, net sales value, operating income, and net income, among other measures.

We have also considered the role of factors other than subject imports. Nonsubject imports had a minimal presence in the U.S. market during the 2018-20 period, increasing their share of apparent U.S. consumption from *** percent in 2018 to *** percent in 2020, but accounted for *** percent of apparent U.S. consumption in interim 2021, up from *** percent in interim 2020.[168] Despite the apparent increase in nonsubject import market share in interim 2021, the vast majority of the increase consisted of nonsubject imports from Canada, and Chemtrade is unaware of any production of sodium nitrite in Canada.[169] While we recognize that nonsubject imports gained some market share from the domestic industry in interim 2021 compared to interim 2020, this market share shift does not negate the impact of the much larger shift in market share from the domestic industry to subject imports over the entire POI.

We have also considered demand trends. As discussed above, the record indicates that apparent U.S. consumption declined irregularly between 2018 and 2020, but that it was higher

[168] Nonsubject import volume was 59,000 pounds in 2018, 48,000 pounds in 2019, and 330,000 pounds in 2020. Their volume was higher in interim 2021, at 1.2 million pounds, than in interim 2020, at 248,000 pounds. CR/PR at Table IV-8.

[169] CR/PR at IV-2 n.4; *see also* Petitioner Postconference Br. at 27 n.109. We intend to further investigate the source of nonsubject imports in any final phase of the investigations.

in interim 2021 than in interim 2020. Yet, even as apparent U.S. consumption declined by *** percent between 2018 and 2020, subject import volumes increased by 31.8 precent, capturing *** percentage points of market share from the domestic industry.[170] As a result, the domestic industry's output indicia declined by more than the decrease in apparent U.S. consumption.[171] Moreover, cumulated subject imports deprived the domestic industry of the full benefit of increased apparent U.S. consumption in interim 2021 compared to interim 2020 by capturing an additional *** percentage points of market share from the industry over this period. Thus, we find that declining demand during the 2018-20 period does not fully explain declines in the domestic industry's performance over the POI.

We are unpersuaded by Royce's argument that changes in Chemtrade's performance over the POI are unrelated to subject imports and instead stem from other factors, including the costs of a legal settlement in 2019, debt costs related to Chemtrade's acquisition of General Chemical in 2014, and allegedly inefficient production processes.[172] While legal and debt costs would have impacted Chemtrade's net income,[173] such expenses do not explain declines in other measures of Chemtrade's performance, including its net sales value and operating income, which were impacted by Chemtrade's loss of sales and market share to cumulated

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

[171] *See* CR/PR at Table C-1.

[172] Royce Postconference Br. at 11-14 & Exhs. 6-8.

[173] Chemtrade's all other expenses declined irregularly over the POI. They initially declined from $*** in 2018 to $*** in 2019, before increasing to $*** in 2020, a lower level than in 2018. They were higher in interim 2021 ($***) than in interim 2020 ($***). Chemtrade's net income also declined irregularly. Accounting for these expenses, Chemtrade's net income declined irregularly over the POI. It declined from *** in 2018 to ***, before increasing to *** in 2020; net income was lower in interim 2021 (***) than in interim 2020 (***). CR/PR at Table VI-1.

subject imports.[174] Further, Chemtrade reported that ***, which would have adversely affected Chemtrade's operations, including potentially the efficiency of its production processes.[175] Thus, the factors argued by Royce do not explain the domestic industry's declining performance during the POI.[176]

We are also unpersuaded by Royce's argument that subject import purchases increased due to production shutdowns by U.S. producer SABIC and Chemtrade's change in its anti-caking agent in 2018, which allegedly made its sodium nitrite unsuitable for certain purchasers.[177] Contrary to this argument, Chemtrade had sufficient available production capacity to supply all apparent U.S. consumption, including SABIC's customers,[178] and Chemtrade's correspondence with *** indicates that it did supply SABIC's customers when sodium nitrite was unavailable from SABIC.[179] Further, most responding purchasers that switched to subject imports during the POI were not motivated by either SABIC's production shutdowns or Chemtrade's change in anti-caking agent.[180] Indeed, the *** responding purchaser, ***, reported that price was a

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

[175] CR/PR at Table VI-10.

[176] Deepak also argues that increases in subject import volumes do not correlate with declines in Chemtrade's performance. However, it relies on Chemtrade data either from outside the period of investigation, *see, e.g.*, Deepak Postconference Br. at 9-10 (relying on domestic industry net income for 2014-2016), or on company data inclusive of out-of-scope products. *See, e.g.*, Deepak Postconference Br. at 13-14 & Exh 1 (relying on Chemtrade quarterly reports for "WSSC manufactures", which includes sodium nitrite and other products). Given the limitations of the data relied upon by Deepak, these arguments do not detract from our findings based upon data specific to Chemtrade's production of sodium nitrite over the POI.

[177] Royce Postconference Br. at 3-4 & Exhs. 2-3.

[178] Chemtrade's production capacity was *** pounds from 2018 to 2020, and *** pounds in in the interim period, which were higher than any levels of apparent U.S. consumption over this period. CR/PR at Table C-1.

[179] Petitioner Postconference Br. at Exh. 7. Email communications indicate that ***. *Id*.

[180] Two of the three responding purchasers citing non-price reasons for switching to subject imports attributed the switch to the ***. CR/PR at Table V-13. While purchaser *** indicated that it (Continued…)

primary reason that it shifted *** pounds of its purchases from the domestic industry to subject imports over the POI.[181] Accordingly, we find that the record of the preliminary phase of the investigations does not support Royce's argument that non-price factors explain the significant increase in subject import volume over the POI.

Finally, we are unpersuaded by Royce's argument that competition between subject imports and the domestic industry was attenuated because there were no subject imports of food grade sodium nitrite.[182] While certain applications require food grade sodium nitrite, the domestic industry's U.S. shipments of food grade sodium nitrite accounted for only *** percent of total U.S. shipments in 2020.[183] Thus, the vast majority of the domestic industry's shipments competed with subject imports for sales of technical grade sodium nitrite in different purities and forms.[184] Given this, we find that the record of the preliminary phase of the investigations

---

(…Continued)
***, this firm further acknowledged that subject import prices were 10 percent lower than the domestic product when it switched purchases. CR/PR at V-19 & Table V-13. Royce also provides correspondence with purchaser ***, in which the purchaser indicated that ***, but this firm also indicated that its purchases ***. *Id*. at Exh. 2. Thus, it is unclear whether the problems experienced by *** stemmed from ***.

[181] CR/PR at Table V-13.

[182] Royce Postconference Br. at 5.

[183] CR/PR at Table IV-5. The record indicates that U.S. shipments of food grade sodium nitrite remained relatively small through the entire January 2018 through September 2021 period. The domestic industry's shipments of pricing product 2, food grade sodium nitrite, totaled *** pounds over this period, which account for *** percent of the domestic industry's total U.S. shipments over the POI. *Calculated from* CR/PR at Tables IV-8 & V-8.

[184] As discussed above, Chemtrade and responding importers reported U.S. shipments of domestic and subject sodium nitrite of the same types and grades. With respect to product types, Chemtrade and responding importers reported U.S. shipments for ***. CR/PR at Table IV-4. With respect to grades, most domestic shipments and all subject import shipments consisted of technical grade sodium nitrite. CR/PR at Table IV-5. While Deepak claims that its sodium nitrite in briquette form differs from the forms of sodium nitrite offered by domestic producers, it concedes that ***. Deepak Postconference Br., Att. A at 19-20.

does not support Royce's argument that subject import competition was significantly attenuated.

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

VIII. Conclusion

For the reasons stated above, we determine that there is a reasonable indication that an industry in the United States is materially injured by reason of subject imports of sodium nitrite from India and Russia that are allegedly sold in the United States at less than fair value and that are allegedly subsidized by the governments of India and Russia.

Part I: Introduction

Background

These investigations result from petitions filed with the U.S. Department of Commerce ("Commerce") and the U.S. International Trade Commission ("USITC" or "Commission") by Chemtrade Chemicals US LLC ("Chemtrade"), Parsippany, NJ, on January 13, 2022, 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 sodium nitrite[1] from India and Russia. Table I-1 presents information relating to the background of these investigations.[2] [3]

Table I-1
Sodium nitrite: Information relating to the background and schedule of this proceeding

Effective date	Action
January 13, 2022	Petitions filed with Commerce and the Commission; institution of Commission investigations (87 FR 3333, January 21, 2022)
February 3, 2022	Commission's conference
February 2, 2022	Commerce's notices of initiation of less-than-fair-value investigations (87 FR 7122, February 8, 2022) and countervailing duty investigations (87 FR 7108, February 8, 2022)
February 25, 2022	Commission's vote
February 28, 2022	Commission's determinations
March 7, 2022	Commission's views

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*

[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 appendix A, and may be found at the Commission's website (www.usitc.gov).

[3] A list of witnesses appearing at the conference is presented in appendix B of this report.

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.

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.

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

Organization of report

Part I of this report presents information on the subject merchandise, alleged subsidy and dumping margins, and domestic like product. Part II of this report presents information on conditions of competition and other relevant economic factors. Part III presents information on the condition of the U.S. industry, including data on capacity, production, shipments, inventories, and employment. Parts IV and V present the volume of subject imports and pricing of domestic and imported products, respectively. Part VI presents information on the financial experience of 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

Sodium nitrite is an industrial chemical that is available in technical grade or food grade.[6] Sodium nitrite is used in a wide range of end uses, including producing chemicals and dyes, metal coating, detinning, plating, wastewater treating, meat curing for food preservatives, ammunition for military applications, treating lumber, and some medical applications, including as an antidote to cyanide poisoning.[7]

The leading U.S. producer of sodium nitrite is Chemtrade. One additional company, SABIC Innovative Chemicals US, LCC ("SABIC"), may have also produced some sodium nitrite during the period of investigation.[8] Leading producers of sodium nitrite in countries subject to these investigations include Deepak Nitrite Limited ("Deepak") of India, and Uralchem, JSC of Russia. The leading U.S. importer of sodium nitrite from India is Royce Associates ("Royce"), while the leading importer of sodium nitrite from Russia is ***.[9] U.S. purchasers of sodium nitrite are mainly distributors and some end users; leading purchasers responding to the lost sales and lost revenue survey are distributors ***.

[6] *S*odium Nitrite from China and Germany. USITC Inv. Nos. 701-TA-453 and 731-TA-1136-1137 (Final). USITC Publication 4029, August 2008, ("China and Germany Original Publication"), p. II-1.

[7] Petition, pp. 11 and 17, and conference transcript, p. 6 (Alves).

[8] Petitions, vol. 1, p. 3. Importer ***. Chemtrade supplied SABIC customers ***. Chemtrade postconference brief, p. 21.

[9] Conference transcript, pp. 80, 83-84 (Gupta).

Apparent U.S. consumption of sodium nitrite totaled approximately *** pounds, on a dry measure basis ($***) in 2020. U.S. producer Chemtrade's U.S. shipments of sodium nitrite totaled *** pounds, on a dry measure basis ($***) in 2020, and accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value. U.S. imports from subject sources totaled 14.8 million pounds, on a dry measure basis ($5.3 million) in 2020 and accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value. U.S. imports from nonsubject sources totaled 330 thousand pounds, on a dry measure basis ($118,000) in 2020 and accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value.

Summary data and data sources

A summary of data collected in these investigations is presented in appendix C, table C-1. Except as noted, U.S. industry data are based on the questionnaire response of the petitioner Chemtrade that accounts for the vast majority of U.S. production of sodium nitrite during 2020.[10] U.S. imports, unless otherwise noted, are based on official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting number 2834.10.1000.

Previous and related investigations

Sodium nitrite has been the subject of prior countervailing and antidumping duty investigations in the United States. In 2007, General Chemical LLC ("General Chemical"), filed petitions alleging that an industry in the United States was materially injured or threatened with material injury by reason of subsidized imports of sodium nitrite from China and LTFV imports of sodium nitrite from China and Germany.[11] In August 2008, antidumping duties were imposed on imports of sodium nitrite from China and Germany, and countervailing duty orders imposed on imports from China, following an affirmative injury determination by the Commission. In January 2014 and July 2019 the Commission reached affirmative determinations in first and second five-year reviews, respectively, determining that revocation of existing orders on imports from China and Germany would likely lead to continuation or

[10] Chemtrade also identified SABIC as a domestic producer, ***. Petitions, vol. 1, p. 3.

[11] Chemtrade is the parent entity of Chemtrade Solutions LLC, the successor-in-interest to General Chemical. Chemtrade Solutions LLC currently operates the same manufacturing facility used by General Chemical to produce sodium nitrite in the United States. Petitions, vol. 1, p. 4.

recurrence of material injury to the domestic industry.[12] [13] Commerce issued continuation orders following second five-year reviews effective August 12, 2019.[14]

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 sodium nitrite from India and Russia.[15]

Alleged sales at LTFV

On February 8, 2022, Commerce published a notice in the Federal Register of the initiation of its antidumping duty investigations on sodium nitrite from India and Russia.[16] Commerce has initiated antidumping duty investigations based on estimated dumping margins ranging from 53.43 to 153.30 percent for sodium nitrite from India and 207.17 percent for sodium nitrite from Russia.

The subject merchandise

Commerce's scope

In the current proceeding, Commerce has defined the scope as follows:[17]

> *The product covered by these investigations is sodium nitrite in any form, at any purity level. In addition, the sodium nitrite covered by these investigations may or may not contain an anti-caking agent. Examples of names commonly used to reference sodium nitrite are nitrous acid, sodium salt, anti-rust, diazotizing salts, erinitrit, and filmerine. Sodium nitrite's chemical composition is $NaNO_2$, and it is generally classified under subheading 2834.10.1000 of the Harmonized Tariff Schedule of the United States (HTSUS). The American Chemical Society Chemical Abstract Service (CAS) has assigned the name ''sodium nitrite'' to sodium nitrite.*

[12] Sodium Nitrite from China and Germany, Inv. Nos. 701-TA-453 and 731-TA-1136-1137 (First Review), USITC Publication 4451, January 2014.

[13] Sodium Nitrite from China and Germany, Inv. Nos. 701-TA-453 and 731-TA-1136-1137 (Second Review), USITC Publication 4936, July 2019 ("China and Germany Second review publication").

[14] 84 FR 39804, August 12, 2019.

[15] For further information on the alleged subsidy programs see Commerce's notice of initiation and related CVD Initiation Checklist. 87 FR 7108, February 8, 2022.

[16] 87 FR 7122, February 8, 2022.

[17] 87 FR 7108 and 7122, February 8, 2022.

The CAS registry number is 7632–00–0. For purposes of the scope of these investigations, the narrative description is dispositive, not the tariff heading, CAS registry number or CAS name, which are provided for convenience and customs purposes.

Tariff treatment

Based upon the scope set forth by Commerce, information available to the Commission indicates that the merchandise subject to these investigations is provided for by name in subheading 2834.10.10 of the Harmonized Tariff Schedule of the United States ("HTS"). The 2022 general rate of duty for HTS subheading 2834.10.10 is 5.5 percent ad valorem, applicable to both respondent countries; products of designated beneficiary countries are eligible for duty-free entry upon proper claim under the Generalized System of Preferences. Effective May 10, 2019, sodium nitrite produced in China is subject to an additional 25.0 percent ad valorem duty under Section 301 of the Trade Act of 1974 as provided for in subheading 9903.88.03.[18] 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[19]

Sodium nitrite ($NaNO_2$) is an industrial chemical sold in solid or liquid form. There are no other chemical names for sodium nitrite. It is a white to slightly yellowish crystalline granular or flake solid that is very soluble in water, but not in standard organic solvents. It is produced in dry (flake, granular, or prill) and liquid (solution) forms. Dry sodium nitrite is sold in bags, drums, and super sacks. Granular sodium nitrite is a powder that may or may not be treated with an anti-caking agent. Sodium nitrite can be stored indefinitely without losing its properties,[20] but if not treated with an anti-caking agent, it can harden and require breaking up. The primary liquid form is sodium nitrite dissolved in water (known as "liquor"), typically about

[18] The U.S. Trade Representative has not granted any exclusions for subheading 2834.10.10 from Section 301 duties under 9903.88.03. Harmonized Tariff Schedule of the United States (2022), Basic Edition, USITC publication 5277, January 2022, Chapter 99, notes 20(e) and 20(f); 84 FR 20459, May 9, 2019.

[19] Unless otherwise noted, this information is based on China and Germany Second review publication, pp. I-7—I-9 and Petitions, pp. 6—8.

[20] Conference transcript, p. 55 (McFarland).

a 40 percent solution,[21] sold in tank trucks and rail cars. A secondary liquid form is a mixture of sodium nitrite and sodium nitrate called "technical liquor" and produced as a byproduct in Chemtrade's production process.[22]

Sodium nitrite is also sold in varying grades depending on the end-use application, including: (1) granular free-flowing food grade; (2) granular free-flowing technical grade; (3) high-purity flake; (4) high-purity granular; (5) crystal reagent quality; (6) high-purity special granular; (7) pure liquor; and (8) technical liquor, a solution with sodium nitrate.[23] Food grade is required to meet higher quality standards (notably for the level of heavy metals); to be in compliance with the Food Chemical Codex and current Good Manufacturing Practice (cGMP); and to be registered with the U.S. Food and Drug Administration.[24] Chemtrade's entire production facility meets standards for food grade and the sodium nitrite it produces likely meets food grade standards, though much of it is sold as technical product.[25]

Sodium nitrite is used in a wide range of industrial applications. As an oxidizing agent it is used in corrosion inhibition, detinning scrap tinplate, and phosphating metals. It also functions as a reducing agent with oxidizing agents such as dichromate, permanganate, chlorate, and chlorine. Sodium nitrite is an important source of nitrous acid in some organic syntheses, notably the production of organic amines.[26] It is also reacted with organic alcohols and amines to form amyl nitrite, amine nitrite, and other organic nitrites that are used as diesel fuel additives and corrosion inhibitors. Additional applications include the production of dyes (including azo, food, and textile) and synthetic rubber; as a preservative in curing meat; to control odor and inhibit bacterial growth in wastewater treatment; in heat treating salts to harden metals;[27] as an antidote to cyanide poisoning; and in military applications, including ammunition and explosives. Food grade sodium nitrite can be used for industrial applications.[28]

[21] Although a 40 percent solution is a common standard, each shipment is diluted to customers' specifications.

[22] Conference transcript, p. 20 (McFarland).

[23] Conference transcript, p. 20 (McFarland).

[24] Petitions, vol. 1, p. 12.

[25] Conference transcript, p. 27 (Emfinger) and p. 40 (McFarland).

[26] Nitrous acid is unstable and not available commercially. Sodium nitrite, when exposed to mineral acids, forms nitrous acid. Petitions, pp. 6—7.

[27] Conference transcript, p. 26 (Emfinger).

[28] Conference transcript, p. 40 (McFarland).

Manufacturing processes[29]

In the first stage of the manufacturing process used by Chemtrade,[30] liquid ammonia is oxidized with air at a high temperature in a catalytic bed to form nitrogen oxides (NO and NO_2) in the chemical equation $2\ NH_3 + 3\ O_2 \rightarrow 2\ HNO_2 + 2\ H_2O$.

Nitrogen oxides are then reacted with either soda ash (sodium carbonate), in the chemical reaction $2\ HNO_2 + Na_2(CO_3) \rightarrow 2NaNO_2 + H_2O + CO_2$, or caustic soda (sodium hydroxide), forming a highly dilute solution that requires concentration. Chemtrade uses soda ash in its production, while producers in India and Russia most likely use caustic soda.[31]

Additional processing is required to remove water to produce dry sodium nitrite. Processing in an evaporator-crystallizer followed by centrifugation yields crystals that are then either dried to reduce moisture to less than 0.2 percent (for high purity product); dried and blended with an anti-caking agent (which increases flowability of the powder); or further dried, compacted into a thin cake, and flaked. Food grade sodium nitrite is tested to certify that it meets quality standards, notably for the presence of heavy metals. For sale as a solution, sodium nitrite requires dilution in water, a process that, given its high water solubility, requires neither specialized skill nor equipment.[32]

Domestic like product issues

No issues with respect to domestic like product have been raised in these investigations. The petitioner proposes that the Commission should find a single domestic like product consisting of sodium nitrite, regardless of form or grade, and coextensive with the scope in the petitions.[33] Respondents did not comment on the petitioner's proposal.

---

[29] China and Germany Second review publication, pp. I-9—I-10 and petitions, pp. 7—8.

[30] SABIC, the other U.S. producer, produces sodium nitrite as a byproduct in polymer synthesis. At one point in a multi-stage process to produce a polyetherimide engineering thermoplastic resin, a waste stream is produced containing aqueous sodium nitrite. Prior to 2012, this waste stream was incinerated at significant expense. In 2012, SABIC began to extract sodium nitrite using carbon purification. In 2013, SABIC estimated that switching from incineration to extraction was saving the company $5 million per year. Guggenheim, Thomas; Lioba M. Klppenburg; and Christopher Piorer. "Purification and utilization a formerly incinerated sodium nitrite bearing wastewater stream." Green Processing and Synthesis 2013; 2: 311-322.

[31] Petitioner's postconference brief, p. 6.

[32] Conference transcript, p. 23 (McFarland).

[33] The scope proposed in the petitions is identical to the scope adopted by the Commission in Sodium Nitrite from China and Germany, Inv. Nos. 701-TA-453, 731-TA-1136-1137 (Final), USITC Publication 4029, August 2008 ("China and Germany Original Publication"), p. 8.

Petitioner asserts that a single domestic like product determination is warranted because this scope is identical to prior sodium nitrite proceedings wherein the Commission determined that, despite being sold in different forms (e.g., granular, flake, and prill) and with additives (e.g., anti-caking agent), the domestic like product consisted of sodium nitrite, regardless of grade or form.[34]

[34] Petitions, vol. 1, p. 10.

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

U.S. market characteristics

Sodium nitrite is an industrial chemical that is available in technical grade or food grade.[1] Sodium nitrite is used in a wide range of end uses, including producing chemicals and dyes, metal coating, detinning, plating, wastewater treating, meat curing for food preservatives, ammunition for military applications, treating lumber, and some medical applications, including as an antidote to cyanide poisoning.[2] It is sold on the basis of a supplier-provided certificate of analysis,[3] and some customers independently test the product for purity.[4]

Food grade sodium nitrite must meet higher quality specifications and quality standards than technical grade product, especially with regards to heavy metals.[5] Food grade sodium nitrite must also be registered with the Food and Drug Administration ("FDA"), and must comply with the Food Chemical Codex ("FCC") and current Good Manufacturing Practice ("cGMP") standards.[6] Food grade sodium nitrite can be substituted for technical grade sodium nitrite, but technical grade cannot be used for food applications.[7] [8] Generally, technical grade is priced lower than food grade sodium nitrite.[9]

Sodium nitrite can be dissolved in water as "liquor" form[10] and sold in trucks and rail cars, or in dry form sold in bags.[11] [12] Sodium nitrite is also sold in varying types depending on the end-use application, including:

---

[1] Sodium Nitrite from China and Germany. USITC Inv. Nos. 701-TA-453 and 731-TA-1136-1137 (Final). USITC Publication 4029, August 2008, ("China and Germany Original publication"), p. II-1.

[2] Petitions, pp. 11 and 17, and conference transcript, p. 6 (Alves).

[3] See Petitions, exh. I-9.

[4] Petitions, p. 17.

[5] Food grade sodium nitrite is generally tested for a larger range of impurities than technical grade product. Petitions, p. 17.

[6] U.S. producer Chemtrade keeps its entire plant as a food grade facility at the state and federal level. Conference transcript, p. 27 (Emfinger).

[7] Petitions, p. 12.

[8] Food grade sodium nitrite accounted for *** percent of domestic producer Chemtrade's U.S. shipments in 2020, with technical grade accounting for *** percent and other grades accounting for *** percent. See Part III for more information.

[9] Petitions, p. 14.

[10] Currently, all liquor forms of sodium nitrite are technical grade. Conference transcript, p. 34 (McFarland).

[11] Petitions, p. 6.

[12] Some customers purchase dry sodium nitrite and put the product in solution at their own facilities, while others purchase sodium nitrite in solution. This decision generally depends on transportation costs and storage requirements. Petitions, p. 13. See also conference transcript, p. 22 (McFarland).

- granular free-flowing food grade
- granular free-flowing technical grade
- high-purity flake (or briquettes)[13] [14]
- high-purity granular
- crystal reagent quality
- high-purity special granular
- pure liquor (40 percent solution).[15] [16]

High-purity flake is sold at a premium as some customers require a "specific quality" of sodium nitrite.[17] Some customers purchase multiple grades of product, and grades are generally standard across the industry.[18]

The U.S. market is mainly supplied by two U.S. producers, Chemtrade and SABIC,[19] [20] and imports from India and Russia. Neither subject country supplies food grade sodium nitrite.[21] Most exports from India and Russia are shipped in dry form in bags or super sacks; however, some importers will turn the dry form into a solution for commercial sale.[22] Sodium nitrite from China and Germany have been subject to countervailing and/or antidumping duty orders since August 2008.[23]

Apparent U.S. consumption of sodium nitrite decreased during 2018-20. Overall, apparent U.S. consumption in 2020 was *** percent lower than in 2018. However, apparent U.S. consumption was *** percent higher in January-September 2021 compared to the same period in 2020.

---

[13] Parties disagreed as to whether the briquette product offered by Indian producer Deepak is similar to Chemtrade's high-purity flake product. Petitioner argued that Deepak markets briquette product as "briquette/flake," which competes with U.S. producer Chemtrade's flake product. Respondent Deepak stated that its briquettes ***. Petitioner's postconference brief, p. 20. Respondent Royce's postconference brief, att. A, p. 18.

[14] High-purity flake does not have an anti-caking agent added to it. Most of the high-purity flake applications are heat bath salt applications. Conference transcript, p. 48 (Emfinger).

[15] The 40 percent sodium nitrite concentration is common across the industry. Petitions, p. 8.

[16] Petitions, p. 6.

[17] Conference transcript, p. 21 (McFarland).

[18] Petitions, p. 14.

[19] SABIC recovers sodium nitrite from a waste stream at its polymer plant, and it only produces ***. Petitions, p. 3.

[20] SABIC did not respond to the Commission's U.S. producer questionnaire.

[21] Conference transcript, p. 28 (Emfinger), Respondent Royce's postconference brief, p. 6, and Respondent Deepak's postconference brief, att. A, p. 20.

[22] Conference transcript, pp. 22-23 (McFarland).

[23] 73 Fed. Reg. 50593 (Aug. 27, 2008); 73 Fed. Reg. 50595 (Aug. 27, 2008).

Channels of distribution

U.S. producer Chemtrade sold mainly to ***; however, it had sizeable sales to *** that increased from 2018-20, as shown in table II-1. Imports of sodium nitrite from India were almost evenly split between distributors and end users. Importers sold Russian sodium nitrite *** to distributors in 2018, and *** to end users in 2020.

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

Shares in percent

Source	Channel	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
United States	Distributors	***	***	***	***	***
United States	End users	***	***	***	***	***
India	Distributors	***	***	***	***	***
India	End users	***	***	***	***	***
Russia	Distributors	***	***	***	***	***
Russia	End users	***	***	***	***	***
Subject sources	Distributors	***	***	***	***	***
Subject sources	End users	***	***	***	***	***
Nonsubject sources	Distributors	***	***	***	***	***
Nonsubject sources	End users	***	***	***	***	***
All import sources	Distributors	***	***	***	***	***
All import sources	End users	***	***	***	***	***

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

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent.

Geographic distribution

U.S. producer Chemtrade reported selling sodium nitrite to *** (table II-2). Importers reported selling product from India to all regions in the contiguous United States,[24] and Russian product was sold only in the Northeast and Midwest. For the responding U.S. producer, *** sales were within 100 miles of their production facility, *** percent were between 101 and 1,000 miles, and *** percent were over 1,000 miles. Importers sold *** percent of their product from India and Russia within 100 miles of their U.S. point of shipment, *** percent between 101 and 1,000 miles, and *** percent over 1,000 miles.

[24] No importers of Indian product reported selling product simultaneously in all regions except Other.

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

Count in number of firms reporting

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

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 sodium nitrite from U.S. producer Chemtrade and from foreign producer Deepak in India. No Russian foreign producers responded to the Commission's questionnaire.

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

Quantity in 1,000 pounds, dry measure basis; ratio and share in percent; count in number of firms reporting

Factor	Measure	United States	India	Russia	Subject suppliers
Capacity 2018	Quantity	***	***	***	***
Capacity 2020	Quantity	***	***	***	***
Capacity utilization 2018	Ratio	***	***	***	***
Capacity utilization 2020	Ratio	***	***	***	***
Ending inventories 2018	Ratio	***	***	***	***
Ending inventories 2020	Ratio	***	***	***	***
Home market 2020	Share	***	***	***	***
Non-US export markets 2020	Share	***	***	***	***
Ability to shift production	Count	***	***	***	***

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

Note: The responding U.S. producer accounted for approximately *** of U.S. production of sodium nitrite in 2020. The responding foreign producer/exporter firms accounted for *** percent of U.S. imports of sodium nitrite from India during 2020. For additional data on the number of responding firms and their share of U.S. production and of U.S. imports from each subject country, please refer to Part I, "Summary Data and Data Sources."

Note: Capacity utilization is measured as a ratio of production to capacity, ending inventories is measured as a ratio to total shipments, home market 2020 and non-U.S. export market 2020 shipments are measured as a share of total shipments.

Domestic production

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

Chemtrade's capacity was stable from 2018-20 while production decreased by *** percent, resulting in a decline in capacity utilization to *** percent. Chemtrade's major export markets include Canada and Mexico[25] and it reported *** to exporting. Chemtrade reported it *** on the same equipment as sodium nitrite.

[25] Conference transcript, p. 71 (McFarland).

Subject imports from India

Based on available information, the responding producer of sodium nitrite from India has the ability to respond to changes in demand with moderate-to-large changes in the quantity of shipments of sodium nitrite to the U.S. market. The main contributing factors to this degree of responsiveness of supply are ***. Factors mitigating responsiveness of supply include ***.

Deepak's capacity increased by *** during 2018-20, while production was *** stable, resulting in a *** decline in capacity utilization. Deepak's major export markets include ***, and there are *** to shifting between markets. Deepak reported that it *** on the same equipment as sodium nitrite, noting that its plant is ***.

Subject imports from Russia

No foreign producers from Russia responded to the Commission's questionnaire. Based on export data, Russia has substantial exports to the rest of the world, namely to Germany India, and Saudi Arabia, that could be diverted to the U.S. market.[26]

Imports from nonsubject sources

Nonsubject imports were a minor source of imports in the U.S. market. Nonsubject imports accounted for 2.2 percent of total U.S. imports in 2020, and less than one percent in 2018-19.

Supply constraints

The one responding U.S. producer reported ***. Most importers (6 of 8) reported that they had not experienced supply constraints since January 1, 2018. Importer *** reported that it had "production issues" and longer lead times due to freight issues. Importer *** reported that U.S. producer SABIC had an extended plant shutdown from November 2019 through January 2021, and that U.S. producer Chemtrade had a major maintenance shutdown in 2020 to upgrade its air pollution

[26] See Part VII for more information.

equipment.[27] Petitioner stated that it *** [28] ***.[29] Petitioner added that during SABIC's closure, it had supplied SABIC's customers and offered to continue to supply those customers once SABIC reopened.[30]

U.S. demand

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

End uses and cost share

U.S. demand for sodium nitrite depends on the demand for U.S.-produced downstream products, such as dyes, metal treatment, and food additives.

Sodium nitrite accounts for a small share of the cost of most of its end-use products in which it is used. Reported cost shares for some end uses were as follows: less than 1 percent for corrosion inhibitors and food curing; between 0.1 percent and 2.0 percent for pigments; and 6.5 percent for dye synthesis. Importer *** reported a cost share of 66.0 percent for H2S scavengers which are used to eliminate odor emissions.

Business cycles

*** most importers (5 of 8) indicated that the market was not subject to business cycles or conditions of competition. The three remaining importers reported that there were seasonal effects and that demand and/or inventory levels were subject to cyclical changes due to pricing and/or demand. Importer *** reported that demand for material increased coupled with both U.S. producers shutting down "several times" since 2018 as distinct conditions of competition.

[27] *** also reported that ***.
[28] Chemtrade ***. Petitioner's postconference brief, p. 19.
[29] Email from ***, February 4, 2022.
[30] Petitioner's postconference brief, p. 21.

Demand trends

U.S. producer Chemtrade reported *** in U.S. demand for sodium nitrite since January 1, 2018 (table II-4), while importers' descriptions of demand trends varied. U.S. producer Chemtrade reported that ***, and importer *** reported that demand decreased, and that it had not imported since 2019. Importer *** reported that sodium nitrite's usage for water treatment in oil fields had increased.

Table II-4
Sodium nitrite: Count of firms' responses regarding overall domestic and foreign demand, by firm type

Count in number of firms reporting

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

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

Substitute products

Substitutes for sodium nitrite are limited. *** all responding importers reported that there were no substitutes.

Substitutability issues

This section assesses the degree to which U.S.-produced sodium nitrite and imports of sodium nitrite from subject countries can be substituted for one another by examining the importance of certain purchasing factors and the comparability of sodium nitrite from domestic and imported sources based on those factors. Based on available data, staff believes that there is a moderately high degree of substitutability between domestically produced sodium nitrite and sodium nitrite imported from subject sources.[31] Factors contributing to this level of substitutability include similar quality, similar availability of forms of sodium nitrite, and high

[31] The degree of substitution between domestic and imported sodium nitrite depends upon the extent of product differentiation between the domestic and imported products and reflects how easily purchasers can switch from domestically produced sodium nitrite to the sodium nitrite 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.).

interchangeability between domestic and subject sources on a product basis. Factors reducing substitutability include the unavailability of food grade sodium nitrite from subject sources, some differences in reported interchangeability between sodium nitrite from domestic and subject sources, a difference in reported lead times from domestic and subject sources, and some significant factors other than price that firms consider, including the reported inability of some importers to purchase from domestic producers.[32]

Factors affecting purchasing decisions

Most important purchase factors

Purchasers responding to lost sales lost revenue allegations[33] were asked to identify the main purchasing factors their firm considered in their purchasing decisions for sodium nitrite. The major purchasing factors identified by firms include quality, price, availability/security of supply, and factors specific to the product including minimal organic residue, free flowing for handing purposes, the availability of non-coated sodium nitrite, and the fill weight of super sacks.

The most often cited top three factors firms consider in their purchasing decisions for sodium nitrite were quality (5 firms),[34] availability/supply (4 firms),[35] and price (3 firms) as shown in table II-5. Quality was the most frequently cited first-most important factor (cited by 3 firms), followed by availability (2 firms); other factors was the most frequently reported second-most important factor (4 firms). Quality, price, and other factors were the most frequently reported third-most important factor (2 firms each).

[32] Purchasers responding to the lost sales and lost revenue survey did not report supply constraints or an inability to purchase from domestic suppliers, and most importers did not report any supply constraints. U.S. producer Chemtrade's reported ***.

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

[34] Includes purchaser *** description of "product needs to have minimal organic residue when melted" as an indicator of quality.

[35] Includes purchaser *** description of "Deepak's ability to deliver non-coated sodium nitrite in the quantities needed" and *** description of "customer preference based on product specifications" as indicators of availability.

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

Count in number of firms reporting

Factor	First	Second	Third	Total
Quality	3	0	2	5
Availability/Supply	2	2	0	4
Price/Cost	0	1	2	3
All other factors	2	4	2	NA

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

Note: Other factors include commercial terms, service, proximity to customer location, free flowing for handling purposes, and fill weight of super sacks.

Lead times

Sodium nitrite is primarily sold from inventory. U.S. producer Chemtrade reported *** its commercial shipments were made from ***, with lead times averaging *** days. Importers reported that 92.2 percent of their commercial shipments were from U.S. inventories, with lead times averaging 4 days, and the remaining 7.8 percent were from foreign inventories, with lead times averaging 90 days.

Comparison of U.S.-produced and imported sodium nitrite

In order to determine whether U.S.-produced sodium nitrite can generally be used in the same applications as imports from India and Russia, 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 Chemtrade reported domestic sodium nitrite and product from India and Russia are *** interchangeable. Importers' responses were more varied.

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

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

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

Table II-7
Sodium nitrite: Count of importers reporting the interchangeability between product produced in the United States and in other countries, by country pair

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

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

Importer ***, which reported that domestic and Indian product were never interchangeable, reported that ***. Importer ***, which reported that domestic product is sometimes interchangeable with Indian and Russia product, reported that ***. Importer *** reported that it has been unable to "access" the domestic product and it relies upon imports; it reported that domestic and Russian sodium nitrite is sometimes interchangeable.

Respondent Royce argued that product from subject countries does not include food grade sodium nitrite, which limits competition between the two sources and, to an extent, interchangeability.[36] Petitioner Chemtrade also acknowledged that it is not aware of imports from subject countries used for food grade applications, but that they could seek certification

[36] Respondent Royce's postconference brief, p. 5.

for their products. Respondent Deepak and Petitioner agreed that domestic sodium nitrite and product from subject countries are similar to one another on a product basis.[37]

In addition, U.S. producers and importers were asked to assess how often differences other than price were significant in sales of sodium nitrite from the United States, subject, or nonsubject countries. As seen in tables II-8 and II-9, U.S. producer Chemtrade reported that non-price differences are *** significant when comparing domestic sodium nitrite and product from subject countries. Most importers reported that non-price differences were always significant when considering domestic and Indian sodium nitrite and sometimes significant when considering domestic and Russian product.

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

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

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

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

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

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

Multiple importers reported that the domestic producer is unwilling or unable to supply them. Importer *** reported that U.S. producers "will not or cannot sell" to it because the U.S. producers view *** as an importer and competition, and importer *** added that Deepak (India) meets a shortfall in the U.S. market caused by the "inability of the

[37] Respondent Deepak's postconference brief, att. A, p. 20; Conference transcript, p. 99 (Gupta); Petitioner's postconference brief, pp. 21-22.

U.S. manufacturer to meet demand."[38] *** also reported that ***. Importer *** also reported that it differentiates itself from Chemtrade on its shorter lead times and greater flexibility regarding customer requests. It added that Chemtrade is "notoriously slow, and unresponsive to customers." *** added that Indian product is the only alternative supplier to Chemtrade, and that ***.[39]

Respondent Royce also added that Chemtrade changed its anti-caking agent in mid-2018, resulting in "at least one" customer switching its business to Royce.[40] Petitioner argued that after ***.[41]

[38] Importer *** repeated its explanation regarding interchangeability, that it is unable to buy from U.S. producers, and adding it is because U.S. producers "control their supply line tightly."

[39] *** imported sodium nitrite from ***.

[40] Respondent Royce's postconference brief, p. 4.

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

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

The Commission analyzes a number of factors in making injury determinations (see 19 U.S.C. §§ 1677(7)(B) and 1677(7)(C)). Information on the subsidies and dumping margins was presented in Part I of this report and information on the volume and pricing of imports of the subject merchandise is presented in Part IV and Part V. Information on the other factors specified is presented in this section and/or Part VI and (except as noted) is based on the questionnaire response of one firm that accounted for *** percent of U.S. production of sodium nitrite during 2020.

U.S. producers

The Commission issued a U.S. producer questionnaire to two firms based on information contained in the petitions. One firm provided usable data on its operations. Staff believes that this response represents the vast majority of U.S. production of sodium nitrite.[1]

Table III-1 lists the responding U.S. producer of sodium nitrite, its production location, position on the petitions, and share of total reported production.

Table III-1
Sodium nitrite: U.S. producer Chemtrade, its position on the petitions, production location, and share of reported production, 2020

Shares in percent

Firm	Position on petitions	Production location	Share of reported production
Chemtrade	Petitioner	Syracuse, NY	100.0

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

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

[1] Petitions, vol. 1, p. 3. Conference transcript, p. 19-20.

Table III-2 presents information on the responding U.S. producer's ownership, related and/or affiliated firms. As indicated in table III-2, Chemtrade *** related to foreign producers of the subject merchandise and Chemtrade *** related to U.S. importers of the subject merchandise. In addition, as discussed in greater detail below, Chemtrade *** directly import the subject merchandise and *** purchase the subject merchandise from U.S. importers.

Table III-2
Sodium nitrite: U.S. producer Chemtrade's ownership, related and/or affiliated firms

Reporting firm	Relationship type and related firm	Details of relationship
***	***	***

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

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

Table III-3 presents the responding U.S. producer's reported changes in operations since January 1, 2018.[2]

Table III-3
Sodium nitrite: U.S. producer Chemtrade's reported changes in operations, since January 1, 2018

Item	Firm name and narrative response on changes in operations
Revised labor agreements	***
Other	***

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

[2] In addition to the operational changes described in table III-3, Chemtrade also shut down its plant for a period of 10 days in November 2020 and ***. Conference transcript, p. 72 (Boonstra) and Petitioner's postconference brief, p. 1.

U.S. production, capacity, and capacity utilization

Table III-4 and figure III-1 present the responding U.S. producer's production, capacity, and capacity utilization. Chemtrade's production decreased by *** percent from 2018 to 2020, with a *** percent decline during 2018-19 followed by a subsequent *** percent decline during 2019-20. The multi-year decline in production reversed in January-September ("interim") 2021, with production for interim 2021 *** percent higher than production in interim 2020. Production capacity did not fluctuate for the period reported, which combined with multi-year declines in production output, led to a *** percentage point decrease in capacity utilization from 2018 to 2020. Capacity utilization in interim 2021, however, was *** percentage points higher than interim 2020, although still lower than in calendar years 2018 and 2019.

Table III-4
Sodium nitrite: U.S. producer Chemtrade's average production capacity, production, and capacity utilization, by period

Capacity and production in 1,000 pounds, dry measure basis; capacity utilization ratio 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 "---".

Figure III-1
Sodium nitrite: U.S. producers Chemtrade's average production capacity, production, and capacity utilization, by period

* * * * * * *

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

Alternative products

Chemtrade *** production of other products on the same equipment used to produce sodium nitrite during January 1, 2018 through September 2021.

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

Table III-5 presents the responding U.S. producer's U.S. shipments, export shipments, and total shipments.[3] Chemtrade's total shipments of sodium nitrite, by quantity, declined continuously over the period reported, with consecutive declines of *** percent from 2018 to 2019 and *** percent from 2019 to 2020, resulting in a *** percent decline in total shipments from 2018 to 2020. Likewise, total shipments reported for interim 2021 were *** percent lower than interim 2020. The overall decline in total shipments from 2018 to 2020 was driven by declines in both U.S. and export shipments over the same period. Of the *** percent drop in total shipments from 2018 to 2020, declines in U.S. shipments accounted for *** percent. While export shipments followed the overall downward trend from 2018 to 2020, they did increase by *** percent from 2018 to 2019, before falling *** percent from 2019 to 2020.[4] Both the quantities of U.S. shipments and exports were lower in interim 2021 compared with interim 2020, by *** percent and *** percent, respectively.

While shipments by value for both U.S. and export shipments also declined from 2018 to 2020, the decline was of a lower magnitude than for shipments by quantity, with U.S. shipments by value declining by *** percent during 2018-20 and exports declining by *** percent.[5] Whereas shipments by quantity for both U.S. and export shipments were lower in interim 2021 than interim 2020, U.S. and export shipments by value were both higher in interim 2021 than interim 2020, by *** percent and *** percent, respectively. Thus, with the drop in shipments by quantity exceeding the drop in shipments by value over the reported period, unit values for total shipments rose by *** percent from 2018 to 2020, and were *** percent higher in interim 2021 compared to interim 2020. The unit value for total shipments reported in interim 2021 was the highest since 2018, *** percent higher than the unit value for total shipments reported in 2019, the lowest for the period during which data were collected. The increase in unit value for total shipments is caused primarily by rising unit values for Chemtrade's U.S. shipments, which never accounted for less than *** percent of total shipments as a share of quantity or value during the reporting period.

[3] Chemtrade ***.

[4] Chemtrade's principal export markets are Canada and Mexico. Conference transcript, p. 71 (McFarland).

[5] Chemtrade reported that during 2018-19 its ***. Petitions, vol. 1, pp. 24-25. In 2020, Chemtrade ***. Petitions, vol. 1, pp. 24-25 and Conference transcript, p. 14 (Boonstra).

Table III-5
Sodium nitrite: U.S. producer Chemtrade's total shipments, by destination and period

Quantity in 1,000 pounds, dry measure basis; Value in 1,000 dollars; Unit value in dollars per pound, dry measure basis; 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 "---".

U.S. producer's inventories

Table III-6 presents the responding U.S. producer's end-of-period inventories and the ratio of these inventories to the U.S. producer's production, U.S. shipments, and total shipments. Chemtrade's end-of-period inventory of sodium nitrite decreased by *** percent from 2018 to 2020. Inventory as a ratio to U.S. production, U.S. shipments, and total shipments also showed net decreases from 2018 to 2020. However, where inventory levels declined from 2018 to 2019, inventory as a ratio to production, U.S shipments, and total shipments all showed a year-on-year increase, prior to falling back below 2018 levels in 2020. Following the overall decline in inventory levels from 2018 to 2020, Chemtrade reported inventory levels *** percent higher for interim 2021 than interim 2020, with comparable changes for inventory ratios, as well, with the higher inventory for interim 2021 compared to interim 2020 set against a backdrop of lower shipment levels in interim 2021 compared to interim 2020, and outpacing the higher production levels for interim 2021 compared to interim 2020.[6]

Table III-6
Sodium nitrite: U.S. producer Chemtrade's inventories and their ratio to select items, by period

Quantity in 1,000 pounds, dry measure basis; 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 "---"

U.S. producer's imports and purchases

***.

[6] Chemtrade reported that the increase in inventory levels across interim 2020 and 2021 is explained by "***." Email from ***, Thursday, February 10, 2022.

U.S. employment, wages, and productivity

Table III-7 shows the U.S. producer's employment-related data.[7] Chemtrade's hourly wages increased by *** percent from 2018 to 2020, with interim 20201 hourly wages also being higher than interim 2020. Likewise, total wages paid increased from 2018 to 2020 by *** percent, with interim 2021 being higher than interim 2020. At the same time, productivity fell year on year from 2018 to 2020, an overall decline of *** percent. Although productivity was higher by *** percent in interim 2021 compared to interim 2020, interim 2021 productivity was still lower than 2018, the highest for the period reported.[8] This led to unit labor costs rising by *** percent from 2018 to 2020, with unit labor costs in interim 2021 higher than in 2018, the period in these investigations with the lowest unit labor costs.

Table III-7
Sodium nitrite: U.S. producer Chemtrade'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.

[7] Chemtrade reported that there were "***."

[8] Chemtrade noted that "the production of sodium nitrite is a high fixed-cost business. {…} It takes the same number of workers to run our plant, whether we are operating at over 80 percent capacity or at only 60 percent of capacity." Conference transcript, p. 15 (Boonstra).

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

U.S. importers

The Commission issued importer questionnaires to twenty-five firms believed to be importers of subject sodium nitrite, as well as to both U.S. producers of sodium nitrite.[1] Usable questionnaire responses were received from eight companies, representing *** percent of U.S. imports of sodium nitrite from India and *** percent of U.S. imports of sodium nitrite from Russia in 2020 under HTS statistical reporting number 2834.10.1000. Table IV-1 lists all responding U.S. importers of sodium nitrite from India and Russia, their locations, and their shares of U.S. imports, in 2020. None of the responding firms reported U.S. imports of sodium nitrite from nonsubject sources.

Table IV-1
Sodium nitrite: U.S. importers, their headquarters, and share of imports within a given source by firm, 2020

Shares in percent

Firm	Headquarters	India	Russia	Subject sources	Nonsubject sources	All import sources
Ace Fluids	Odessa, TX	***	***	***	***	***
Brenntag	Reading, PA	***	***	***	***	***
CDN	Warrenville, IL	***	***	***	***	***
Chem One	Houston, TX	***	***	***	***	***
Concordia	Humble, TX	***	***	***	***	***
Royale Pigments	Bear, DE	***	***	***	***	***
Royce	East Rutherford, NJ	***	***	***	***	***
Sunbelt	Rock Hill, SC	***	***	***	***	***
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 "---". Three U.S. importers (***) last reported imports of sodium nitrite in ***.

[1] The Commission issued questionnaires to those firms identified in the petitions, along with firms that, based on a review of data from third-party sources, may have accounted for more than one percent of total imports under HTS statistical reporting number 2834.10.1000 in 2020.

U.S. imports

Table IV-2 presents data for U.S. imports of sodium nitrite from India and Russia and all other sources. The quantity of imports from all sources increased by 34.1 percent from 2018 to 2020, with subject sources accounting for 92.9 percent of this increase. Subject imports from both India and Russia contributed to this increase, with imports from India rising 15.2 percent from 2018 to 2020, and imports from Russia rising by 2,132.5 percent.[2] [3] While nonsubject imports also increased across this period, the 462.3 percent growth from 2018 to 2020 still left nonsubject imports at 2.2 percent of the quantity of total imports.[4] The higher imports reported for interim 2021, relative to interim 2020, reflect the continuation of this growth, with nonsubject imports 396.9 percent higher in interim 2021 than interim 2020, and subject imports 29.8 percent higher, relative to interim 2020 quantities. In the case of subject imports, the higher quantities for interim 2021 are driven solely by imports from India, as imports from Russia were 20.0 percent lower in interim 2021 as compared with interim 2021.

Trends in value data reported for the period of investigation mirror those for quantity, with a 27.9 percent increase in value of total imports from 2018 to 2020 being driven by 12.8 percent growth in the value of Indian imports and 1787.9 percent growth in the value of Russian imports. The value of nonsubject imports grew as well, rising 108.2 percent from 2018 to 2020, but remained at 2.2 percent of total import value for 2020.

Unit values for total subject imports remained between $0.36 and $0.39 per pound for the period reported. Accounting for no less than 83.2 percent of the quantity of all sodium nitrite imports, imports from India drove these trends. However, imports from Russia

[2] Royce was the largest responding U.S. importer over the period for which data were collected, accounting for *** percent of imports from India and *** percent of imports from Russia in 2019, *** and ***. The firm also accounted for the *** of the increase in imports from subject sources, particularly in 2020 and interim 2021. *** noted that ***.

[3] *** noted that "***." SABIC did not participate in this preliminary investigation, and Chemtrade estimates that SABIC accounts for less than *** percent of domestic production of sodium nitrite. Petitions, p. 3.

[4] The vast majority of imports from nonsubject sources during the period of investigation were from Canada. Petitioners stated that they are unaware of any production of sodium nitrite in Canada. Conference transcript, pp. 38-39.

experienced greater changes in unit value, albeit at lower quantity levels. Russian imports fell from $0.37 per pound in 2018 to $0.32 per pound in 2020, then once again reaching $0.37 per pound in interim 2021. With the exception of 2018, when unit values of Russian and Indian imports were equal, Russian imports' unit values were lower than that of Indian imports in all periods reported.

U.S. imports of sodium nitrite from India, by quantity and value, accounted for the overwhelming (although declining) majority of total imports during the period for which data were collected. The share of the total quantity of U.S. sodium nitrite imports held by India declined from 98.7 percent in 2018 to 84.8 percent in 2020, and was lower at 83.2 percent in interim 2021 compared with interim 2020. On the other hand, the share of total U.S. imports held by imports from Russia increased from 0.8 percent in 2018 to 13.0 percent in 2020, but was lower at 8.2 percent in interim 2021 than in interim 2020. The share of total U.S. imports held by nonsubject sources increased from 0.5 percent in 2018 to 2.2 percent in 2020, and was higher at 8.6 percent in interim 2021 than in interim 2020.

Total imports as a ratio to U.S. production increased from a low of 26.2 percent in 2018 to 47.6 percent in 2020, and was higher at 56.2 percent in interim 2021 than in interim 2020. Subject imports as a ratio to U.S. production increased similarly from a low of 26.1 percent in 2018 to 46.5 percent in 2020, and was higher at 51.3 percent in interim 2021 than in interim 2020.

Table IV-2
Sodium nitrite: U.S. imports, by source and period

Quantity in 1,000 pounds, dry measure basis; value in 1,000 dollars; unit value in dollars per pound, dry measure basis

Source	Measure	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
India	Quantity	11,162	10,356	12,864	8,630	11,931
Russia	Quantity	88	298	1,969	1,466	1,173
Subject sources	Quantity	11,250	10,654	14,833	10,096	13,104
Nonsubject sources	Quantity	59	48	330	248	1,233
All import sources	Quantity	11,309	10,701	15,163	10,345	14,337
India	Value	4,172	3,920	4,708	3,173	4,709
Russia	Value	33	97	623	465	437
Subject sources	Value	4,205	4,017	5,331	3,637	5,147
Nonsubject sources	Value	57	68	118	95	420
All import sources	Value	4,261	4,084	5,449	3,733	5,566
India	Unit value	0.37	0.38	0.37	0.37	0.39
Russia	Unit value	0.37	0.33	0.32	0.32	0.37
Subject sources	Unit value	0.37	0.38	0.36	0.36	0.39
Nonsubject sources	Unit value	0.96	1.42	0.36	0.38	0.34
All import sources	Unit value	0.38	0.38	0.36	0.36	0.39

Table continued.

Table IV-2 Continued
Sodium nitrite: Share of U.S. imports by source and period

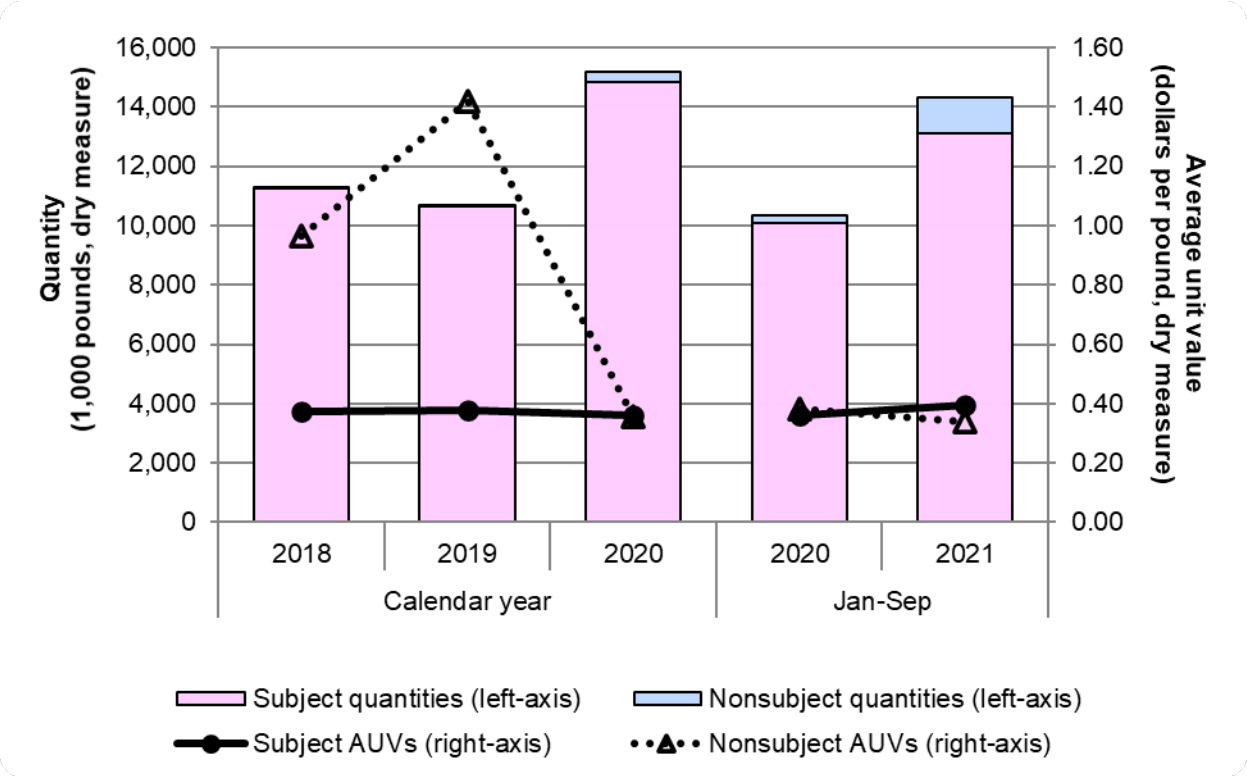
Shares and ratios in percent

Source	Measure	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
India	Share of quantity	98.7	96.8	84.8	83.4	83.2
Russia	Share of quantity	0.8	2.8	13.0	14.2	8.2
Subject sources	Share of quantity	99.5	99.6	97.8	97.6	91.4
Nonsubject sources	Share of quantity	0.5	0.4	2.2	2.4	8.6
All import sources	Share of quantity	100.0	100.0	100.0	100.0	100.0
India	Share of value	97.9	96.0	86.4	85.0	84.6
Russia	Share of value	0.8	2.4	11.4	12.4	7.9
Subject sources	Share of value	98.7	98.3	97.8	97.4	92.5
Nonsubject sources	Share of value	1.3	1.7	2.2	2.6	7.5
All import sources	Share of value	100.0	100.0	100.0	100.0	100.0
India	Ratio	***	***	***	***	***
Russia	Ratio	***	***	***	***	***
Subject sources	Ratio	***	***	***	***	***
Nonsubject sources	Ratio	***	***	***	***	***
All import sources	Ratio	***	***	***	***	***

Source: Compiled from official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting number 2834.10.1000, accessed January 28, 2022. Imports are based on the imports for consumption data series. Value data reflect landed duty-paid values.

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as “---“. Share of quantity is the share of U.S. imports by quantity; share of value is the share of U.S. imports by value; ratio are U.S. imports to production.

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



Source: Compiled from official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting number 2834.10.1000, accessed January 28, 2022. Imports are based on the imports for consumption data series. Value data reflect landed duty-paid values.

Negligibility

The statute requires that an investigation be terminated without an injury determination if imports of the subject merchandise are found to be negligible.[5] Negligible imports are generally defined in the Act, as amended, as imports from a country of merchandise corresponding to a domestic like product where such imports account for less than 3 percent of the volume of all such merchandise imported into the United States in the most recent 12-month period for which data are available that precedes the filing of the petition or the initiation of the investigation. However, if there are imports of such merchandise from a number of countries subject to investigations initiated on the same day that individually account for less than 3 percent of the total volume of the subject merchandise, and if the imports from those countries collectively account for more than 7 percent of the volume of all such merchandise imported into the United States during the applicable 12-month period, then

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

imports from such countries are deemed not to be negligible.[6] Imports from India and Russia accounted for 83.8 and 6.4 percent, respectively, of total U.S. imports of sodium nitrite by quantity during calendar year 2021 (i.e., the 12-month period preceding the filing of the petitions).

Table IV-3
Sodium nitrite: U.S. imports in the twelve-month period preceding the filing of the petitions, January 2021 through December 2021

Quantity in 1,000 pounds, dry measure basis; Share of quantity in percent

Source of imports	Quantity	Share of quantity
India	15,438	83.8
Russia	1,173	6.4
Subject sources	16,611	90.2
Nonsubject sources	1,807	9.8
All import sources	18,418	100.0

Source: Compiled from official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting numbers 2834.10.1000, accessed February 10, 2022. Imports are based on the imports for consumption data series.

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

Cumulation considerations

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

Fungibility

Table IV-4 and figure IV-2 present data for the U.S. producer's and U.S. importers' U.S. shipments by product type for 2020. Sodium nitrite in granular form at all purity levels accounted for the greatest share of combined U.S. shipments by the U.S. producer and U.S. importers from subject sources in 2020, at *** percent of all shipments. This product form is

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

comprised of sodium nitrite in granular form at either 99 percent pure or greater, or less than 99 percent pure, with the less than 99 percent pure form accounting for *** percent of all granular shipments. Whereas shipments of the 99 percent pure or greater form of sodium nitrite were *** across U.S. producers and imports from India, in the case of the more prevalent less than 99 percent pure form of sodium nitrite, the U.S. producer's shipments accounted for *** percent of all shipments in 2020. Shipments of all forms of sodium nitrite, other than various purity levels of granular form, were concentrated in flake and liquid form. The U.S. producer accounted for *** percent of U.S. shipments of sodium nitrite in flake form in 2020 and the *** accounted for the predominant share of U.S. shipments of liquid form sodium nitrite, with *** accounting for *** of all shipments of sodium nitrite in liquid form in 2020. The U.S. producer predominantly shipped sodium nitrite in ***, at *** percent of its total U.S. shipments, with the second-most common form being ***, at *** percent of its total U.S. shipments in 2020. The liquid form accounted for a relatively smaller share (*** percent) of the U.S. producer's total U.S. shipments. For U.S. importers of sodium nitrite from India and Russia however, the *** form was the dominant form, accounting for *** percent of all U.S. shipments of sodium nitrite imports from India and *** percent of all U.S. shipments of sodium nitrite imports from Russia in 2020.

Table IV-4
Sodium nitrite: U.S. producer Chemtrade's and U.S. importers' U.S. shipments in 2020, by source and by product type

Quantity in 1,000 pounds, dry measure basis

Product type	U.S. producers	India	Russia	Subject sources	Nonsubject sources	All import sources	All sources
Granular 99 percent pure or greater	***	***	***	***	***	***	***
Granular less than 99 percent pure	***	***	***	***	***	***	***
Granular all purity levels	***	***	***	***	***	***	***
Flake	***	***	***	***	***	***	***
Liquid	***	***	***	***	***	***	***
Prill	***	***	***	***	***	***	***
Other	***	***	***	***	***	***	***
All product types	***	***	***	***	***	***	***

Table continued.

Table IV-4 Continued
Sodium nitrite: U.S. producer Chemtrade's and U.S. importers' U.S. shipments in 2020, by source and by product type

Share across in percent

Product type	U.S. producers	India	Russia	Subject sources	Nonsubject sources	All import sources	All sources
Granular 99 percent pure or greater	***	***	***	***	***	***	***
Granular less than 99 percent pure	***	***	***	***	***	***	***
Granular all purity levels	***	***	***	***	***	***	***
Flake	***	***	***	***	***	***	***
Liquid	***	***	***	***	***	***	***
Prill	***	***	***	***	***	***	***
Other	***	***	***	***	***	***	***
All product types	***	***	***	***	***	***	***

Table continued.

Table IV-4 Continued
Sodium nitrite: U.S. producer Chemtrade's and U.S. importers' U.S. shipments in 2020, by source and by product type

Share down in percent.

Product type	U.S. producers	India	Russia	Subject sources	Nonsubject sources	All import sources	All sources
Granular 99 percent pure or greater	***	***	***	***	***	***	***
Granular less than 99 percent pure	***	***	***	***	***	***	***
Granular all purity levels	***	***	***	***	***	***	***
Flake	***	***	***	***	***	***	***
Liquid	***	***	***	***	***	***	***
Prill	***	***	***	***	***	***	***
Other	***	***	***	***	***	***	***
All product types	***	***	***	***	***	***	***

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 "---".

Note: None of the responding firms reported U.S. imports of sodium nitrite from nonsubject sources.

Note: "Other" forms of sodium nitrite reported by U.S. importers *** include sodium nitrite in briquette form imported by ***, and sodium nitrite in powder form imported by ***. "Other" forms of sodium nitrite shipped by the U.S. producer include "tech liquor byproduct," which is a byproduct of the sodium nitrite production process, and a mix of two-thirds percent sodium nitrite and one-third percent sodium nitrate. Chemtrade witness testimony, p. 3.

Figure IV-2
Sodium nitrite: U.S. producer Chemtrade's and U.S. importers' U.S. shipments in 2020, by source and by product type

* * * * * * *

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

Note: None of the responding firms reported U.S. imports of sodium nitrite from nonsubject sources.

Table IV-5 and figure IV-3 present data for the U.S. producer's and U.S. importers' U.S. shipments by product grade for 2020. As detailed in Part I of this report, the production process for food and technical grade sodium nitrite is identical, with food grade sodium nitrite going through an additional certification process. The two most commonly shipped grades of sodium nitrite to the U.S. market in 2020 were technical grade and "other" grade,[7] at *** percent and *** percent of all shipments, respectively. The U.S. producer accounted for *** percent of U.S. shipments of food and "other" grade sodium nitrite.[8] For the U.S. producer, its U.S. shipments of food and "other" grade sodium nitrite comprised *** percent of its total U.S. shipments in 2020, with the majority of those shipments accounted for by *** grade sodium nitrite, at *** percent of its total U.S. shipments. Technical grade sodium nitrite accounted for *** percent of the U.S. producer's total U.S. shipments in 2020, but accounted for *** percent of the U.S. importers' total U.S. shipments. Subject import sources accounted for *** percent of all U.S. shipments of technical grade sodium nitrite in 2020, with imports from India accounting for *** of all U.S. shipments of subject imports of technical grade sodium nitrite.

[7] "Other" grade sodium nitrite, reported ***, is comprised of "***."

[8] Deepak stated that the firm ***. Deepak postconference brief, Attachment A, p. 20.

Table IV-5
Sodium nitrite: U.S. producer Chemtrade's and U.S. importers' U.S. shipments in 2020, by source and by grade

Quantity in 1,000 pounds, dry measure basis

Grade	U.S. producers	India	Russia	Subject sources	Nonsubject sources	All import sources	All sources
Food grade	***	***	***	***	***	***	***
Technical grade	***	***	***	***	***	***	***
Other grade	***	***	***	***	***	***	***
All grades	***	***	***	***	***	***	***

Table continued.

Table IV-5 Continued
Sodium nitrite: U.S. producer Chemtrade's and U.S. importers' U.S. shipments in 2020, by source and by grade

Share across in percent.

Grade	U.S. producers	India	Russia	Subject sources	Nonsubject sources	All import sources	All sources
Food grade	***	***	***	***	***	***	***
Technical grade	***	***	***	***	***	***	***
Other grade	***	***	***	***	***	***	***
All grades	***	***	***	***	***	***	***

Table continued.

Table IV-5 Continued
Sodium nitrite: U.S. producer Chemtrade's and U.S. importers' U.S. shipments in 2020, by source and by grade

Share down in percent.

Grade	U.S. producers	India	Russia	Subject sources	Nonsubject sources	All import sources	All sources
Food grade	***	***	***	***	***	***	***
Technical grade	***	***	***	***	***	***	***
Other grade	***	***	***	***	***	***	***
All grades	***	***	***	***	***	***	***

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 "---".

Note: Data presented for "Other" grade sodium nitrite is comprised of "***."

Figure IV-3
Sodium nitrite: U.S. producer Chemtrade's and U.S. importers' U.S. shipments in 2020, by source and by grade

* * * * * * *

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

Note: None of the responding firms reported U.S. imports of sodium nitrite from nonsubject sources.

Geographical markets

Table IV-6 presents U.S. imports of sodium nitrite, by source and border of entry in 2020, based on official Commerce import statistics. The vast majority of subject and nonsubject imports entered through the Eastern border of entry, specifically the Charleston, South Carolina U.S. Customs District. Among subject imports, Indian imports entered through all borders of entry in 2020, with a majority through the Eastern border of entry, whereas Russian imports entered only through the Eastern border of entry. Imports through the Northern border of entry were comprised entirely of nonsubject imports, also comprising the entirety of nonsubject imports during 2020.

Table IV-6
Sodium nitrite: U.S. imports by source and border of entry, 2020

Quantity in 1,000 pounds, dry measure basis

Source	East	North	South	West	All borders
India	9,235	274	3,135	220	12,864
Russia	1,969	---	---	---	1,969
Subject sources	11,204	274	3,135	220	14,833
Nonsubject sources	---	330	---	---	330
All import sources	11,204	603	3,135	220	15,163

Table continued.

Table IV-6 Continued
Sodium nitrite: U.S. imports by source and border of entry, 2020

Share across in percent

Source	East	North	South	West	All borders
India	71.8	2.1	24.4	1.7	100.0
Russia	100.0	---	---	---	100.0
Subject sources	75.5	1.8	21.1	1.5	100.0
Nonsubject sources	---	100.0	---	---	100.0
All import sources	73.9	4.0	20.7	1.5	100.0

Table continued.

Table IV-6 Continued
Sodium nitrite: U.S. imports by source and border of entry, 2020

Share down in percent

Source	East	North	South	West	All borders
India	82.4	45.3	100.0	100.0	84.8
Russia	17.6	---	---	---	13.0
Subject sources	100.0	45.3	100.0	100.0	97.8
Nonsubject sources	---	54.7	---	---	2.2
All import sources	100.0	100.0	100.0	100.0	100.0

Source: Compiled from official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting number 2834.10.1000, accessed January 28, 2022. Imports are based on the imports for consumption data series.

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

Presence in the market

Table IV-7 and figures IV-4 and IV-5 present monthly U.S. imports from January 2018 to September 2021. U.S. imports from India entered the U.S. market in each of the 45 months. With respect to Russia, imports of sodium nitrite entered the U.S. market in 24 of the 45 months. Years 2020 and 2021 marked an increase in Russian imports' presence in the U.S. market, with imports entering the United States in 11 months of 2020 and 6 of the 9 covered months in interim 2021. Nonsubject import sources had a presence in the U.S. market for 23 of the 45 months, with a notable increase in interim 2021, where nonsubject imports entered the U.S. market in 8 of the 9 covered months.

Table IV-7
Sodium nitrite: U.S. imports, by source and month

Quantity in 1,000 pounds, dry measure basis

Year	Month	India	Russia	Subject sources	Nonsubject sources	All import sources
2018	January	1,200	---	1,200	---	1,200
2018	February	1,090	---	1,090	---	1,090
2018	March	625	---	625	---	625
2018	April	1,086	---	1,086	4	1,089
2018	May	1,096	---	1,096	2	1,097
2018	June	1,101	---	1,101	5	1,107
2018	July	501	---	501	---	501
2018	August	719	---	719	2	721
2018	September	985	44	1,029	44	1,073
2018	October	979	44	1,023	---	1,023
2018	November	671	---	671	2	673
2018	December	1,110	---	1,110	---	1,110
2019	January	1,184	---	1,184	---	1,184
2019	February	1,072	---	1,072	---	1,072
2019	March	1,505	---	1,505	38	1,544
2019	April	798	42	840	---	840
2019	May	416	---	416	---	416
2019	June	762	---	762	3	764
2019	July	902	---	902	1	903
2019	August	830	44	874	---	874
2019	September	822	42	864	---	864
2019	October	553	42	595	---	595
2019	November	856	128	984	---	984
2019	December	656	---	656	5	661

Table continued.

Table IV-7 Continued
Sodium nitrite: U.S. imports, by source and month

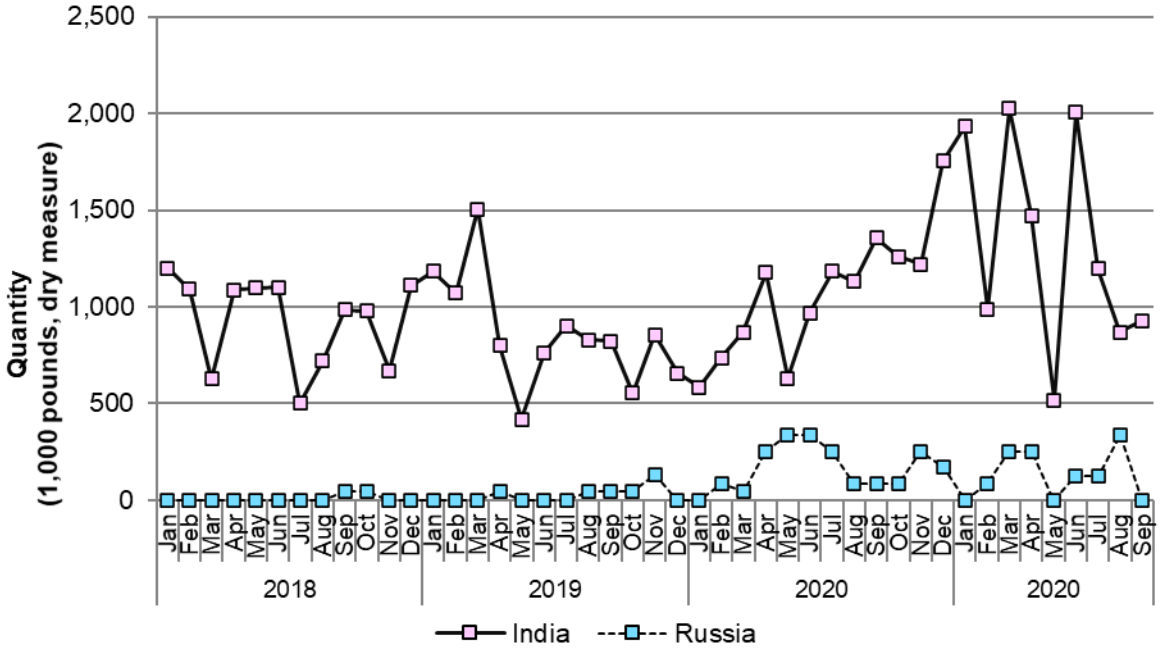
Quantity in 1,000 pounds, dry measure basis

Year	Month	India	Russia	Subject sources	Nonsubject sources	All import sources
2020	January	583	---	583	---	583
2020	February	735	84	819	---	819
2020	March	867	42	909	---	909
2020	April	1,177	251	1,429	---	1,429
2020	May	630	335	966	---	966
2020	June	968	335	1,303	3	1,306
2020	July	1,183	251	1,435	123	1,557
2020	August	1,132	84	1,215	82	1,297
2020	September	1,354	84	1,438	41	1,479
2020	October	1,259	84	1,342	---	1,342
2020	November	1,220	251	1,472	---	1,472
2020	December	1,755	168	1,922	82	2,004
2021	January	1,932	---	1,932	122	2,055
2021	February	989	84	1,073	122	1,196
2021	March	2,024	251	2,275	122	2,398
2021	April	1,470	251	1,722	---	1,722
2021	May	516	---	516	71	588
2021	June	2,007	126	2,132	163	2,296
2021	July	1,195	126	1,321	286	1,607
2021	August	868	335	1,203	204	1,407
2021	September	929	---	929	141	1,070

Source: Compiled from official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting number 2834.10.1000, accessed January 28, 2022. Imports are based on the imports for consumption data series.

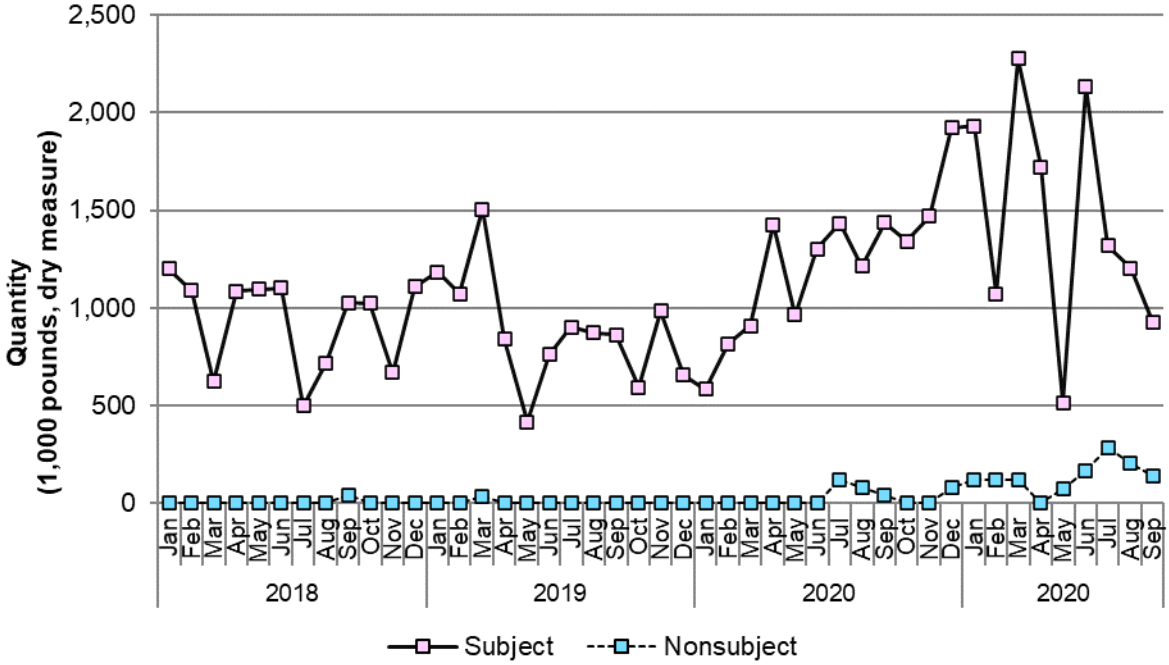
Note: Zeroes, null values, and undefined calculations are suppressed and shown as "---".

Figure IV-4
Sodium nitrite: U.S. imports from individual subject sources, by source and by month



Source: Compiled from official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting number 2834.10.1000, accessed January 28, 2022. Imports are based on the imports for consumption data series.

Figure IV-5
Sodium nitrite: U.S. imports from aggregated subject and nonsubject sources, by month



Source: Compiled from official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting number 2834.10.1000, accessed January 28, 2022. Imports are based on the imports for consumption data series.

Apparent U.S. consumption

Quantity

Table IV-8 and figure IV-6 present data on apparent U.S. consumption and U.S. market shares by quantity for sodium nitrite. As overall apparent consumption of sodium nitrite declined by *** percent from 2018 to 2020, subject sources' market share increased by *** percentage points, reaching *** percent of the U.S. market in 2020. Of these subject sources, imports from India expanded their market share from 2018 to 2020 by *** percentage points, while the share of the U.S. market held by Russian imports grew by *** percentage points. The share of the U.S. market held by imports from India in interim 2021 was *** percentage points higher than it was in interim 2020, whereas the share held by imports from Russia in interim 2021 was *** percentage points lower. The U.S. producer's share of the U.S. market for sodium nitrite fell by *** percentage points from *** percent in 2018 to *** percent in 2020, and was *** percentage points lower at *** percent in interim 2021 than in interim 2020. The share of the U.S. market, in terms of quantity, held by nonsubject imports remained below *** percent of the total market through 2020, but was *** percent in interim 2021.

Table IV-8
Sodium nitrite: Apparent U.S. consumption and market shares based on quantity, by source and period

Quantity in 1,000 pounds, dry measure basis; shares in percent

Source	Measure	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
U.S. producers	Quantity	***	***	***	***	***
India	Quantity	11,162	10,356	12,864	8,630	11,931
Russia	Quantity	88	298	1,969	1,466	1,173
Subject sources	Quantity	11,250	10,654	14,833	10,096	13,104
Nonsubject sources	Quantity	59	48	330	248	1,233
All import sources	Quantity	11,309	10,701	15,163	10,345	14,337
All sources	Quantity	***	***	***	***	***
U.S. producers	Share	***	***	***	***	***
India	Share	***	***	***	***	***
Russia	Share	***	***	***	***	***
Subject sources	Share	***	***	***	***	***
Nonsubject sources	Share	***	***	***	***	***
All import sources	Share	***	***	***	***	***
All sources	Share	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires and from official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting number 2834.10.1000, accessed January 28, 2022. Imports are based on the imports for consumption data series.

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

Figure IV-6
Sodium nitrite: Apparent U.S. consumption based on quantity, by source and period

* * * * * * *

Source: Compiled from data submitted in response to Commission questionnaires and from official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting number 2834.10.1000, accessed January 28, 2022. Imports are based on the imports for consumption data series.

Value

Table IV-9 and figure IV-7 present data on apparent U.S. consumption and U.S. market shares by value for sodium nitrite. From 2018 to 2020, apparent consumption for sodium nitrite by value fell by *** percent, but was *** percent higher in interim 2021 compared to interim 2020. The U.S. producer's market share declined in terms of value, down *** percentage points from *** percent of the market in 2018 to *** percent in 2020, and was *** percentage points lower at *** percent of the market in interim 2021 than in interim 2020. The share of the value of the U.S. market held by subject imports from India and Russia increased from *** and *** percent in 2018, respectively, to *** and *** percent in 2020, respectively. The share of the sodium nitrite market held by subject imports from India was higher at *** percent in interim 2021 than in interim 2020, but the share held by imports from Russia was slightly lower at *** percent. The share of the U.S. market, in terms of value, held by nonsubject imports remained below *** percent of the total market through 2020, but was *** percent in interim 2021.

Table IV-9
Sodium nitrite: Apparent U.S. consumption and market shares based on value, 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	4,172	3,920	4,708	3,173	4,709
Russia	Value	33	97	623	465	437
Subject sources	Value	4,205	4,017	5,331	3,637	5,147
Nonsubject sources	Value	57	68	118	95	420
All import sources	Value	4,261	4,084	5,449	3,733	5,566
All sources	Value	***	***	***	***	***
U.S. producers	Share	***	***	***	***	***
India	Share	***	***	***	***	***
Russia	Share	***	***	***	***	***
Subject sources	Share	***	***	***	***	***
Nonsubject sources	Share	***	***	***	***	***
All import sources	Share	***	***	***	***	***
All sources	Share	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires and from official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting number 2834.10.1000, accessed January 28, 2022. Imports are based on the imports for consumption data series. Import value data are landed, duty-paid values.

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-7
Sodium nitrite: Apparent U.S. consumption based on value, by source and period

* * * * * * *

Source: Compiled from data submitted in response to Commission questionnaires and from official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting number 2834.10.1000, accessed January 28, 2022. Imports are based on the imports for consumption data series. Import value data are landed, duty-paid values.

Part V: Pricing data

Factors affecting prices

Raw material costs

The raw materials used to produce sodium nitrite include ammonia and soda ash or caustic soda. All producers use ammonia, but the use of caustic soda or soda ash depends upon the production process of the sodium nitrite manufacturer.[1] Petitioner stated that it uses soda ash, and that soda ash prices were stable throughout 2018-21. Petitioner added that ammonia accounts for two-thirds of its variable costs and is the largest input cost.[2] Petitioner also noted that it uses natural gas to make steam as part of its production process. As a share of cost of goods sold ("COGS"), raw materials decreased from *** percent in 2018 to *** percent in 2020.

As shown in figure V-1, ammonia prices increased by *** percent from January 2018 to September 2021, with much of the increase beginning in March 2021. From September 2021 to the end of the year, prices increased by *** percent. Reasons for this increase include increased prices for natural gas (see figure V-2) used in ammonia production and increased demand for fertilizers which use ammonia.[3]

[1] China and Germany Original publication, p. V-1.
[2] Conference transcript, pp. 15 and 53-54 (Boonstra).
[3] AgriLife Today, "Fertilizer prices continue record climb," November 9, 2021.

Figure V-1
Raw materials: Average anhydrous ammonia prices, by month and year

* * * * * * *

Source: Compiled from data obtained from Bloomberg's Green Markets, accessed February 4, 2022.

Note: Prices are reported on a U.S. Gulf of Mexico NOLA basis. Monthly prices shown are simple averages of the published weekly prices within the specified year and month.

Table V-1
Raw materials: Average anhydrous ammonia prices, by month and year

Price in dollars per short ton

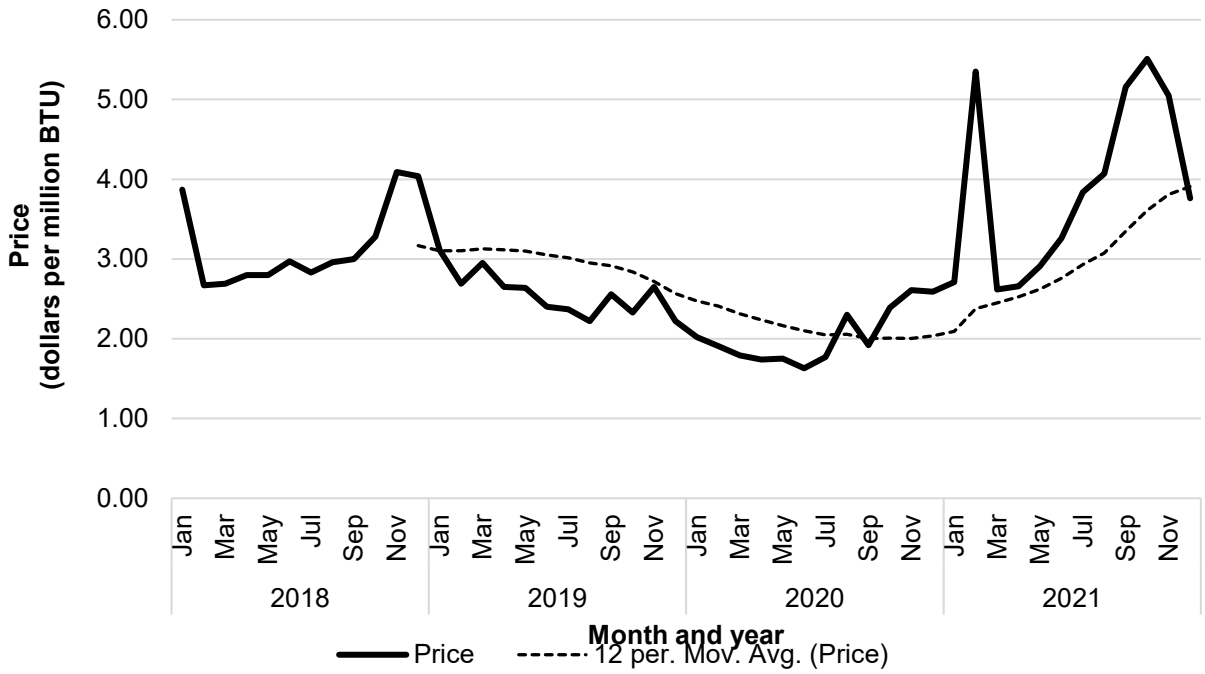
Month	2018	2019	2020	2021
January	***	***	***	***
February	***	***	***	***
March	***	***	***	***
April	***	***	***	***
May	***	***	***	***
June	***	***	***	***
July	***	***	***	***
August	***	***	***	***
September	***	***	***	***
October	***	***	***	***
November	***	***	***	***
December	***	***	***	***

Source: Compiled from data obtained from Bloomberg's Green Markets, accessed February 4, 2022.

Note: Prices are reported on a U.S. Gulf of Mexico NOLA basis. Monthly prices shown in this table are simple averages of the published weekly prices within the specified year and month.

Natural gas prices fluctuated during 2018-20 and increased sharply in February 2021, before falling and then continued to increase throughout the year before peaking in October 2021. Natural gas prices spiked in February 2021 due to Winter Storm Uri that impacted natural gas and electricity markets in Texas and Oklahoma; prices fell in March followed by price increases continuing to October 2021.[4] Overall, monthly natural gas prices were 33.3 percent higher in September 2021 compared to January 2018. From September 2021 to the end of the year, monthly natural gas prices decreased by 27.1 percent, with ending prices in 2021 slightly lower than prices in January 2018.

Figure V-2
Raw materials: Average natural gas prices, by month and year



Source: Compiled from official energy statistics on Henry Hub Natural Gas Spot Prices from the U.S. Department of Energy, U.S. Energy Information Administration, accessed January 27, 2022.

Note: BTU stands for British Thermal Unit and is used as a unit of heat energy. Prices are Henry Hub natural gas spot price.

[4] Natural gas price volatility in 2021 occurred due to weather-related consumption and production outages, high international natural gas prices that encouraged exports, and key pipeline outages, amongst other factors. U.S. Energy Information Administration, "U.S. natural gas prices spiked in February 2021, then generally increased through October," January 6, 2022, https://www.eia.gov/todayinenergy/detail.php?id=50778, accessed February 10, 2022.

Table V-2
Raw materials: Average natural gas prices, by month and year

Price in dollars per million BTU

Month	2018	2019	2020	2021
January	3.87	3.11	2.02	2.71
February	2.67	2.69	1.91	5.35
March	2.69	2.95	1.79	2.62
April	2.80	2.65	1.74	2.66
May	2.80	2.64	1.75	2.91
June	2.97	2.40	1.63	3.26
July	2.83	2.37	1.77	3.84
August	2.96	2.22	2.30	4.07
September	3.00	2.56	1.92	5.16
October	3.28	2.33	2.39	5.51
November	4.09	2.65	2.61	5.05
December	4.04	2.22	2.59	3.76

Source: Compiled from official energy statistics on Henry Hub Natural Gas Spot Prices from the U.S. Department of Energy, U.S. Energy Information Administration, accessed January 27, 2022.

Note: BTU stands for British Thermal Unit and is used as a unit of heat energy. Prices are Henry Hub natural gas spot price.

Transportation costs to the U.S. market

Transportation costs for sodium nitrite shipped from subject countries to the United States averaged 12.9 percent for India during 2020 and 24.5 percent for Russia. These estimates were derived from official import data and represent the transportation and other charges on imports.[5]

U.S. inland transportation costs

U.S. producer Chemtrade reported that *** typically arranges transportation to its customers, and its average inland transportation cost is *** percent. Most importers (4 of 6) reported that they arrange transportation to their customers, and most importers reported inland transportation costs of 10 to 15 percent.[6]

[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 2834.10.1000.

[6] Importer *** reported an inland transportation cost of 3 percent and *** reported 20 percent, while the remaining 5 importers reported costs between 10 percent and 15 percent.

Pricing practices

Pricing methods

*** the majority of importers reported setting prices using transaction-by-transaction negotiations, with importer *** using set price lists in addition to transaction-by-transaction negotiations, and *** using other price setting methods (table V-3).

Table V-3
Sodium nitrite: Count of U.S. producers' and importers' reported price setting methods

Method	U.S. producers	U.S. importers
Transaction-by-transaction	***	6
Contract	***	0
Set price list	***	1
Other	***	1
Responding firms	***	7

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

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

*** importers reported selling virtually all of their sodium nitrite in the spot market (table V-4).

Table V-4
Sodium nitrite: U.S. producers' and importers' shares of commercial U.S. shipments by type of sale, 2020

Share in percent

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

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

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

Sales terms and discounts

*** most importers (4 of 6) typically quote prices on an f.o.b. basis.[7] *** all responding importers had no policy on discounts.

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 sodium nitrite products shipped to unrelated U.S. customers during January 2018-September 2021.

Product 1.-- Minimum sodium nitrite component of 98.0 percent. Sodium nitrite may or may not contain an anti-caking agent. Sodium nitrite may or may not be sold in prill form. Do not include flake, liquor or products that meet the Product 2 definition.

Product 2.-- Minimum sodium nitrite component of 99.0 percent. Certified as complying with the Food Chemical Codex ("FCC") and current Good Manufacturing Practice ("cGMP"). Sodium nitrite may or may not contain an anti-caking agent. Sodium nitrite may or may not be sold in prill form. Do not include flake or liquor.

Product 3.-- Sodium nitrite in aqueous solution, with a nominal concentration between 38 and 42 percent.

U.S. producer Chemtrade and five importers provided usable pricing data for sales of the requested products, although not all firms reported pricing for all products for all quarters.[8] [9] Pricing data reported by these firms accounted for approximately *** percent of the U.S. producer's U.S. shipments of sodium nitrite and *** percent of U.S. shipments of subject imports from India in 2020, and *** percent of U.S. shipments of imports from Russia.[10] No

[7] Importer *** reports on both f.o.b. and delivered bases.

[8] 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.

[9] Importer *** provided limited pricing data for product 1 from ***. Its data are not included in the tables and figures below.

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

importers reported price data for product 2, and no importers reported price data for product 1 from Russia.

Price data for products 1-3 are presented in tables V-5 to V-7 and figures V-3 to V-5.

Table V-5
Sodium nitrite: Weighted-average f.o.b. prices and quantities of domestic and imported product 1 and margins of underselling/(overselling), by source and quarter

Price in dollars per pound (dry measure basis), quantity in pounds (dry measure basis), 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 1: Minimum sodium nitrite component of 98.0 percent. Sodium nitrite may or may not contain an anti-caking agent. Sodium nitrite may or may not be sold in prill form. Do not include flake, liquor or products that meet the Product 2 definition.

Table V-6
Sodium nitrite: Weighted-average f.o.b. prices and quantities of domestic and imported product 2 and margins of underselling/(overselling), by source and quarter

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

Period	US price	US quantity
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: Minimum sodium nitrite component of 99.0 percent. Certified as complying with the FCC and cGMP. Sodium nitrite may or may not contain an anti-caking agent. Sodium nitrite may or may not be sold in prill form. Do not include flake or liquor.

Table V-7
Sodium nitrite: Weighted-average f.o.b. prices and quantities of domestic and imported product 3 and margins of underselling/(overselling), by source and quarter

Price in dollars per pound (dry measure basis), quantity in pounds (dry measure basis), 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	***	***	***	***	***

Period	Russia price	Russia quantity	Russia margin	Subject price	Subject quantity	Subject 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 3: Sodium nitrite in aqueous solution, with a nominal concentration between 38 and 42 percent.

Figure V-3
Sodium nitrite: Weighted-average f.o.b. prices and quantities of domestic and imported product 1, by source and quarter

Price of product 1

* * * * * * *

Volume of product 1

* * * * * * *

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

Note: Product 1: Minimum sodium nitrite component of 98.0 percent. Sodium nitrite may or may not contain an anti-caking agent. Sodium nitrite may or may not be sold in prill form. Do not include flake, liquor or products that meet the Product 2 definition.

Figure V-4
Sodium nitrite: Weighted-average f.o.b. prices and quantities of domestic and imported product 2, by source and quarter

Price of product 2

* * * * * * *

Volume of product 2

* * * * * * *

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

Note: Product 2: Minimum sodium nitrite component of 99.0 percent. Certified as complying with the FCC and cGMP. Sodium nitrite may or may not contain an anti-caking agent. Sodium nitrite may or may not be sold in prill form. Do not include flake or liquor.

Figure V-5
Sodium nitrite: Weighted-average f.o.b. prices and quantities of domestic and imported product 3, by source and quarter

Price of product 3

* * * * * * *

Volume of product 3

* * * * * * *

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

Note: Product 3: Sodium nitrite in aqueous solution, with a nominal concentration between 38 and 42 percent.

Price trends

In general, prices increased during January 2018-September 2021. Table V-8 summarizes the price trends, by country and by product. As shown in the table, domestic price increases ranged from *** to *** percent during January 2018-September 2021 while price increases for product from India were *** and *** percent for products 1 and 3, respectively.[11]

Table V-8
Sodium nitrite: Summary of price data, by product and source, January 2018-September 2021

Quantity in 1,000 pounds (dry measure basis), price in dollars per pound (dry measure basis)

Product	Source	Number of quarters	Quantity	Low price	High price	First quarter price	Last quarter price	Change over period
Product 1	United States	***	***	***	***	***	***	***
Product 1	India	***	***	***	***	***	***	***
Product 1	Russia	***	***	***	***	***	***	***
Product 2	United States	***	***	***	***	***	***	***
Product 2	India	***	***	***	***	***	***	***
Product 2	Russia	***	***	***	***	***	***	***
Product 3	United States	***	***	***	***	***	***	***
Product 3	India	***	***	***	***	***	***	***
Product 3	Russia	***	***	***	***	***	***	***

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

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

Price comparisons

As shown in tables V-9 and V-10, prices for product imported from India were below those for U.S.-produced product in 20 of 30 instances (*** pounds, dry measure basis); margins of underselling ranged from *** to *** percent. In the remaining 10 instances (*** pounds, dry measure basis), prices for product from India were between *** and *** percent above prices for the domestic product. Prices for product imported from Russia were below those for U.S.-produced product in 5 of 6 instances (*** pounds, dry measure basis); margins of underselling ranged from *** to ***

[11] Product from Russia for product 3 was only sold in *** quarters, and a price change was not calculated for this time period. No importers reported price data for product from Russia for product 1, nor did they report price data for product 2 from either Russia or India.

percent. In the remaining 1 instance (*** pounds, dry measure basis), the price for Russian product was *** percent higher than domestic product.

Table V-9
Sodium nitrite: Instances of underselling and overselling and the range and average of margins, by product

Quantity in 1,000 pounds (dry measure basis); margin in percent

Products	Type	Number of quarters	Quantity	Average margin	Min margin	Max margin
Product 1	Underselling	15	***	***	***	***
Product 3	Underselling	10	***	***	***	***
All products	Underselling	25	***	***	***	***
Product 1	Overselling	0	***	***	***	***
Product 3	Overselling	11	***	***	***	***
All products	Overselling	11	***	***	***	***

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

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

Table V-10
Sodium nitrite: Instances of underselling and overselling and the range and average of margins, by source

Quantity in 1,000 pounds (dry measure basis); margin in percent

Source	Type	Number of quarters	Quantity	Average margin	Min margin	Max margin
India	Underselling	20	***	***	***	***
Russia	Underselling	5	***	***	***	***
All subject sources	Underselling	25	***	***	***	***
India	Overselling	10	***	***	***	***
Russia	Overselling	1	***	***	***	***
All subject sources	Overselling	11	***	***	***	***

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 sodium nitrite report purchasers with which they experienced instances of lost sales or revenue due to competition from imports of sodium nitrite from India and/or Russia during January 2018-September 2021. U.S. producer Chemtrade reported that it had to *** and

also reported ***. U.S. producer Chemtrade submitted lost sales and lost revenue allegations identifying 30 firms with which it lost sales or revenue (10 consisting of lost sales allegations and 20 consisting of both types of allegations). All allegations were against ***.

Staff contacted 29 purchasers and received responses from 7 purchasers.[12] Responding purchasers reported purchasing and importing *** pounds, dry measure basis, of sodium nitrite during 2018-September 2021 (table V-11). No purchasers reported purchasing or importing sodium nitrite from Russia, nonsubject sources, or sources unknown.

Table V-11
Sodium nitrite: Purchasers' reported purchases and imports, by firm and source

Quantity in 1,000 pounds, dry measure basis, share in percent

Firm	Domestic quantity	Subject quantity	All other quantity	Change in domestic share	Shange in subject share
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
All firms	***	***	***	***	***

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

Note: The 'all other' category includes 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 70.2 percent of their sodium nitrite from U.S. producers and 29.8 percent from India. Purchasers were asked about changes in their purchasing patterns from different sources since 2018. Of the responding purchasers, three reported no changes in their purchases from domestic producers, three reported fluctuating purchases, and one did not purchase any domestic product. Explanations for fluctuating

[12] Chemtrade submitted an updated lost sales and lost revenue allegations list that included ***. *** was not issued a lost sales lost revenue survey as the updated allegation list was received when the surveys were due to be returned.

purchases of domestic product included demand fluctuations, global shipping issues, increases in demand, and ***.[13]

Table V-12
Sodium nitrite: Purchasers' reported purchases and imports, by firm and source

Quantity in 1,000 pounds, dry measure basis, share in percent

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

Source: Compiled from data submitted in response to Commission questionnaires.
Note: All other includes all other sources and unknown sources.

Of the seven responding purchasers, four reported that, since 2018, they had purchased imported sodium nitrite from India instead of U.S.-produced product, and no purchasers reported purchasing from Russia instead of domestic product. Purchaser *** reported that prices for Indian product were lower than U.S.-produced product, and it added that price was a primary reason for the decision to purchase imported product from India rather than U.S.-produced product. Purchaser *** estimated that it purchased *** pounds, dry measure basis, of sodium nitrite from India instead of domestic product (table V-13).[14] Non-price reasons for purchasing imported rather than U.S.-produced product included ***.[15]

[13] Purchaser *** reported that it *** purchased domestic product "for many years," but ***. ***. *** did not report where it sourced the alternative products. It purchased sodium nitrite ***.

[14] This represented all of its purchases of Indian sodium nitrite from 2018-September 2021.

[15] Chemtrade noted that it ***. Email from *** February 4, 2022.

No responding purchasers reported that U.S. producers had reduced prices in order to compete with lower-priced imports from India or Russia.[16]

Table V-13
Sodium nitrite: Purchasers' responses to purchasing subject imports instead of domestic product, by firm

Quantity in 1,000 pounds, dry measure basis

Firm	Purchased subject imports instead of domestic	Imports priced lower	Choice based on price	Quantity	Narrative on reasons for purchasing imports
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
All firms	Yes--4; No--3	Yes--1; No--3	Yes--1; No--3	***	

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

[16] Three purchasers reported that U.S. producers had not reduced prices in response to subject imports, and four reported they did not know.

Table V-14
Sodium nitrite: Purchasers' responses to purchasing subject imports instead of domestic product, by source

Quantity in 1,000 pounds, dry measure basis

Source	Purchased subject imports instead of domestic	Imports priced lower	Choice based on price	Quantity
India	4	1	1	***
Russia	---	---	---	***
Subject sources	4	1	1	***

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

In responding to the lost sales/lost revenue survey, some purchasers provided additional information on purchases and market dynamics. Purchaser *** reported that Chemtrade, ***, had increased its prices for sodium nitrite every year since 2018. Purchaser *** reported that U.S. producers have "recently" increased pricing and changed product specifications. Purchaser *** reported that during January 2018-December 2020, domestic and Indian sodium nitrite were the same price, and in the past year the pricing diverged. It added that as of September 2021, domestic product was priced 10 percent higher than Indian product, and so *** decreased volumes of ***. ***. Petitioner noted that ***.[17]

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

Part VI: Financial experience of U.S. producers

Background[1]

The petitioner, Chemtrade, is the only U.S. producer of sodium nitrite that provided usable financial results on its operations.[2] Chemtrade's fiscal year ends on December 31 and financial data were provided on the basis of GAAP.[3] Revenue reflects ***.[4]

[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] The only other known U.S. producer, SABIC Innovative Chemicals US, LLC ("SABIC"), did not respond to Commission requests for data. SABIC is primarily a plastic/polymer producer, with sodium nitrite recovered as a waste stream byproduct. The petition noted that SABIC's sodium nitrite is limited by the volume of primary product output and that SABIC produces sodium nitrite ***. The petitioner estimates that SABIC's production of sodium nitrite is approximately less than *** percent of U.S. production. Petitions, p. 3 and conference transcript, p. 20 (McFarland).

Petitioner's estimates of SABIC's sodium nitrite production is consistent with data in related proceedings before the Commission. Sodium Nitrite from China and Germany, Inv. Nos. 701-TA-453 and 731-TA-1136-1137 (Review), USITC Publication 4451, January 2014, p. I-22 and 15 and Inv. Nos. 701-TA-453 and 731-TA-1136-1137 (Review): Sodium Nitrite from China and Germany—Staff Report, INV-LL-102, December 2, 2013, pp. I-18 to I-19.

SABIC's webpage states that it is "among the world's largest petrochemicals manufacturers" with operations in over 50 countries with a global workforce of over 32,000 employees. SABIC is based in Riyadh, Saudi Arabia (70 percent owned Saudi Aramco and 30 percent publicly traded on the Saudi stock exchange). SABIC operates three Strategic Business Units: Petrochemicals, Agri-Nutrients and Specialties, and Metals. SABIC's webpages, https://www.sabic.com/en/about and https://www.sabic.com/en/products/polymers, retrieved February 9, 2022.

[3] Chemtrade is wholly owned by Chemtrade Solutions, LLC (Delaware) with Chemtrade Logistics Income Fund (Toronto Stock Exchange (CHE.UN)) as its ultimate parent. Sodium nitrite was part of the Specialty Chemicals unit until 2020, when it moved to the Electrochemical business unit. Chemtrade's webpage, https://www.chemtradelogistics.com/product/sodium-nitrite-food-grade, retrieved February 2, 2022 and conference transcript, p. 12 (Boonstra).

[4] Chemtrade included the revenue from sales of an in-scope waste byproduct, tech liquor, ***. The revenue from tech liquor sales *** percent of total net sales quantity and value, respectively, in full year periods. Tech liquor is sold at roughly less than *** AUVs ($0.14 to $0.16) than the AUVs of sodium nitrite ($0.55 to $0.61) over the annual periods. Email from James Cannon, Counsel for petitioner, February 4, 2022.

For over 20 years, Chemtrade sold in-scope tech liquor waste to one customer in the charcoal briquette industry, but those sales stopped in the second half of 2020 when the customer reformulated its process to remove the need for tech liquor. Conference transcript, pp. 20 and 36 (McFarland).

Operations on sodium nitrite

Table VI-1 presents aggregated data on Chemtrade's operations in relation to sodium nitrite, while table VI-2 presents corresponding changes in AUVs.[5]

Table VI-1
Sodium nitrite: Results of operations of U.S. producer Chemtrade, by item and period

Quantity in 1,000 pounds, dry measure basis; 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: Energy costs	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	***	***	***	***	***
All other expenses/income, net	Value	***	***	***	***	***
Net income or (loss)	Value	***	***	***	***	***
Depreciation/amortization	Value	***	***	***	***	***
Cash flow	Value	***	***	***	***	***
COGS: Raw materials	Ratio to NS	***	***	***	***	***
COGS: Energy costs	Ratio to NS	***	***	***	***	***
COGS: Direct labor	Ratio to NS	***	***	***	***	***
COGS: Other factory	Ratio to NS	***	***	***	***	***
COGS: Total	Ratio to NS	***	***	***	***	***
Gross profit	Ratio to NS	***	***	***	***	***
SG&A expense	Ratio to NS	***	***	***	***	***
Operating income or (loss)	Ratio to NS	***	***	***	***	***
Net income or (loss)	Ratio to NS	***	***	***	***	***

Table continued.

[5] Chemtrade reported that the COVID-19 pandemic ***. Chemtrade's U.S. producer questionnaire, III-18.

Table VI-1 Continued
Sodium nitrite: Results of operations of U.S. producer Chemtrade, by item and period

Shares in percent; unit values in dollars per pound, dry measure basis; count in number of firms reporting

Item	Measure	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
COGS: Raw materials	Share of COGS	***	***	***	***	***
COGS: Energy costs	Share of COGS	***	***	***	***	***
COGS: Direct labor	Share of COGS	***	***	***	***	***
COGS: Other factory	Share of COGS	***	***	***	***	***
COGS: Total	Share of COGS	***	***	***	***	***
Total net sales	Unit value	***	***	***	***	***
COGS: Raw materials	Unit value	***	***	***	***	***
COGS: Energy costs	Unit value	***	***	***	***	***
COGS: Direct labor	Unit value	***	***	***	***	***
COGS: Other factory	Unit value	***	***	***	***	***
COGS: Total	Unit value	***	***	***	***	***
Gross profit or (loss)	Unit value	***	***	***	***	***
SG&A expenses	Unit value	***	***	***	***	***
Operating income or (loss)	Unit value	***	***	***	***	***
Net income or (loss)	Unit value	***	***	***	***	***
Operating losses	Count	***	***	***	***	***
Net losses	Count	***	***	***	***	***
Data	Count	1	1	1	1	1

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

Table VI-2
Sodium nitrite: Changes in 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: Energy costs	▼***	▲***	▼***	▲***
COGS: Direct labor	▲***	▲***	▲***	▲***
COGS: Other factory	▲***	▲***	▲***	▲***
COGS: Total	▲***	▲***	▲***	▲***

Table continued.

Table VI-2 Continued
Sodium nitrite: Changes in AUVs between comparison periods

Changes in dollars per pound, dry measure basis

Item	2018-20	2018-19	2019-20	Jan-Sep 2020-21
Total net sales	▲***	▼***	▲***	▲***
COGS: Raw materials	▲***	▲***	▼***	▲***
COGS: Energy costs	▼***	▲***	▼***	▲***
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.

Net sales

As presented in table VI-1, total net sales quantity and value of U.S. producer Chemtrade declined each year from 2018 to 2020, *** percent by quantity and *** percent by value; net sales quantity continued to decline while net sales value were higher in January to September 2021 ("interim 2021") compared with January to September 2020 ("interim 2020"). Net sales AUVs fluctuated, from $*** in 2018 to $*** in 2019 before increasing to $*** in 2020; AUVs were higher in interim 2021 than in interim 2020.

Cost of goods sold and gross profit or loss

As shown in table VI-1, raw material costs account for the largest share of total COGS, ranging from *** to *** percent of total COGS from 2018 to September 2021. As a ratio to net sales, raw material costs declined irregularly from *** to *** percent from 2018 to 2020, but were higher in interim 2021 than in interim 2020. Chemtrade does not ***.[6]

Table VI-3 presents details on specific raw material inputs as a share of total raw material costs in 2020. Production of sodium nitrite primarily consists of two material inputs,

[6] Email from James Cannon, Counsel for petitioner, February 4, 2022.

ammonia and soda ash (sodium carbonate), with soda ash accounting for the largest share of total raw material costs.[7] The high percentage of other raw material costs is the result of Chemtrade reporting ***.[8] Table VI-1 shows that total raw material AUVs increased from $*** per-pound in 2018 to $*** per-pound in 2019 and 2020; raw material AUVs are much higher in interim 2021 than in interim 2020.[9]

Table VI-3
Sodium nitrite: Raw material costs of the last full year of the period

Values in 1,000 dollars; unit values in dollars per pound, dry measure basis; share of value in percent

Item	Value	Unit value	Share of value
Ammonia	***	***	***
Soda ash	***	***	***
Other material inputs	***	***	***
All raw materials	***	***	***

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 shown in table VI-1, other factory costs account for the second largest share of total COGS, ranging from *** to *** percent of total COGS from 2018 to September 2021. As a ratio to net sales, other factory costs increased irregularly from *** to *** percent from 2018 to 2020 and was lower in interim 2021 than in interim 2020. Other factory cost AUVs increased from $*** per-pound in 2018 to $*** per-pound in 2019 and 2020, and were higher in interim 2021 than in interim 2020.[10]

As shown in table VI-1, direct labor accounted for the third largest share of total COGS, ranging from *** to *** percent as a share of total COGS from 2018 to September 2021. As a ratio to net sales, direct labor increased consistently from *** to *** percent from 2018

[7] Chemtrade uses soda ash exclusively as the raw material containing sodium ***. Production of sodium nitrite can use either soda ash or caustic soda (sodium hydroxide). Email from James Cannon, Counsel for petitioner, February 4, 2022.

[8] Other raw materials include ***. Ibid.

[9] Chemtrade testified that ammonia prices are at historically high levels, with the index of ammonia prices going from $280 at the beginning of 2021 to $1,000 at the end of 2021. Chemtrade stated that ammonia accounted for two-thirds of its variable cost for materials {in 2021}. Conference transcript, p. 15 (Boonstra).

[10] Other factory costs include wastewater treatment and other environmental regulation costs. ***. Email from James Cannon, Counsel for petitioner, February 4, 2022.

to 2020 but was lower in interim 2021 than in interim 2020. Direct labor AUVs increased each year, from $*** to $*** per-pound from 2018 to 2020 and were higher in interim 2021 than in interim 2020.[11]

Table VI-1 shows that energy and utility were the smallest share of total COGS, ranging from *** to *** percent as a share of total COGS from 2018 to September 2021. As a ratio to net sales, energy and utility costs fluctuated irregularly from *** percent in 2018 to *** percent in 2019 then down to *** percent in 2020; these costs as a share of net sales were higher in interim 2021 than in interim 2020. Energy and utility AUVs were mostly steady, ranging from $*** to $*** per-pound throughout the period for which data were collected.[12]

Total COGS declined (as a result of declines in sales) from 2018 to 2020, but were higher in interim 2021 than in interim 2020. Chemtrade's COGS to sales ratio fluctuated from *** percent in 2018 to *** percent in 2019 and then to *** percent in 2020; the COGS to sales ratio was higher in interim 2021 than in interim 2020. COGS AUVs increased each year, from $*** in 2018 to $*** in 2020 and were higher in interim 2021 than in interim 2020. The increase in COGS AUVs primarily reflect the increases in direct labor and other factory costs from 2018 to 2020. Product mix differences such as grades or forms of sodium nitrite did not materially contribute to the increased in COGS AUVs.[13]

Gross profit *** from $*** in 2018 down to $*** in 2019 before increasing to $*** in 2020; gross profit was higher in interim 2021 than in interim 2020. Gross margins (total gross profit divided by total net sales) showed the same irregularly decreasing trends from *** percent in 2018 to a low of *** percent in 2019 before increasing to *** percent; gross margins were lower in interim 2021 than in interim 2020. Chemtrade reported the lowest profitability in 2019 for the time periods examined, resulting from not passing COGS increases to its customers

[11] Both other factory and direct labor costs are *** during the period examined. Email from James Cannon, Counsel for petitioner, February 4, 2022.

[12] Energy and utility AUVs stayed steady despite declines in production and sales over the period examined, resulting from increases in natural gas prices (by 75 percent each year since 2018). Conference transcript, p. 15 (Boonstra).

[13] Chemtrade characterized the COGS differences among various grades and/or forms of sodium nitrite as ***. All sodium nitrite ***. Packaging differences account for ***. Email from James Cannon, Counsel for petitioner, February 4, 2022.

in an attempt to maintain market share.[14]

SG&A expenses and operating income or loss

As presented in table VI-1, Chemtrade's SG&A expenses decreased from 2018 to 2020 but were higher in interim 2021 than in interim 2020.[15] SG&A expense ratios (i.e., total SG&A expenses divided by net sales) irregularly increased from 2018 to 2020 and was higher in interim 2021 than in interim 2020.

As presented in table VI-1, Chemtrade's operating income mirrored the fluctuations in gross profit trends, declining from ***; gross profits were lower in interim 2021 than in interim 2020. Operating margins (i.e. operating income divided by net sales) followed the same directional pattern as ***, from *** percent in 2018 to *** percent in 2019 then to *** percent in 2020; operating margins were lower in interim 2021 than in interim 2020.

All other expenses and net income or loss

Classified below the operating income level are interest expenses, other expenses, and other income. Table VI-1 aggregates these items, with the net amount shown (***). Chemtrade's net "all other expenses" decreased irregularly from 2018 to 2020 but was higher in interim 2021 than in interim 2020.

Similar to the trends in gross profit and operating income/losses, Chemtrade reported a positive net income of $*** in 2018, a net loss of $*** in 2019, before reducing net losses to $*** in 2020; net income was lower between the comparable interim periods, with interim 2020 showing positive net income while interim 2021 reported a net loss. The trend of net income/losses is primarily driven by the timing of Chemtrade passing costs to its customers as noted earlier and the declines in net sales.

[14] Mr. Boonstra testified that he changed the strategy in 2019 in an attempt to improve profits by increasing prices of sodium nitrite "across the board" starting in 2020. Conference transcript, pp. 12-13 (Boonstra).

[15] SG&A expenses are allocated based on ***.

Variance analysis

A variance analysis for the operations of the U.S. producer of sodium nitrite is presented in table VI-4.[16] The information for this variance analysis is derived from table VI-1.

Table VI-4
Sodium nitrite: Variance analysis for U.S. producer Chemtrade between comparison periods

Value in 1,000 dollars

Item	2018-20	2018-19	2019-20	Jan-Sep 2020-21
Net sales price variance	***	***	***	***
Net sales volume variance	***	***	***	***
Net sales total variance	***	***	***	***
COGS cost variance	***	***	***	***
COGS volume variance	***	***	***	***
COGS total variance	***	***	***	***
Gross profit variance	***	***	***	***
SG&A cost variance	***	***	***	***
SG&A volume variance	***	***	***	***
SG&A total variance	***	***	***	***
Operating income price variance	***	***	***	***
Operating income cost variance	***	***	***	***
Operating income volume variance	***	***	***	***
Operating income total variance	***	***	***	***

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

Note: Unfavorable variances are shown in parentheses; all others are favorable.

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

Capital expenditures and research and development expenses

Tables VI-5 and VI-6 present Chemtrade's capital expenditures and its narrative explanations of the nature, focus, and significance of the capital expenditures, respectively.[17] [18]

Table VI-5
Sodium nitrite: U.S. producer Chemtrade's capital expenditures, by period

Value in 1,000 dollars

Firm	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
Capital expenditures	***	***	***	***	***

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

Table VI-6
Sodium nitrite: Narratives explaining the nature, focus, and significance of firms' capital expenditures

Firm	Narrative on capital expenditures
Chemtrade	***

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

With regard to R&D expenses, Chemtrade reported ***, but testified at the staff conference that it has started developing new applications for its in-scope tech liquor waste byproduct.[19]

[17] Chemtrade testified that capital investment for sodium nitrite has been stalled ($21.5 million of "necessary capital expenditures to sustain capacity and modernize the plant for improved efficiency and safety" has not been able to start). Conference transcript, p. 17 (Boonstra).

[18] Construction for a greenfield sodium nitrite plant requires equipment, skilled and high-paid workers, an investment of about ***, and "three to four years to do preliminary engineering, to make an investment decision, to do detailed design, to procure equipment and to construct." Conference transcript, p. 63 (Boonstra) and postconference brief, p. 11.

[19] As previously noted in footnote 4 in this section of the report, Chemtrade lost the one long-term customer that purchased the in-scope tech liquor waste product. As a result, Chemtrade ***. U.S. producer questionnaire, III-13c and conference transcript, p. 20 (McFarland).

Assets and return on assets

Table VI-7 presents data on the Chemtrade's total assets and operating ROA.[20] Table VI-8 presents Chemtrade's narrative responses explaining the major asset categories and any significant changes in asset levels over time.

Table VI-7
Sodium nitrite: U.S. producer Chemtrade's total net assets and operating income to net assets ratio, by period

Value in 1,000 dollars; ratios in percent

Firm	2018	2019	2020
Total net assets (1,000 dollars)	***	***	***
Operating return to net assets (percent)	***	***	***

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

Table VI-8
Sodium nitrite: Narrative descriptions of U.S. producer Chemtrade's total net assets

Firm	Narrative on assets
Chemtrade	***

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

Capital and investment

The Commission requested the U.S. producers of sodium nitrite to describe any actual or potential negative effects of imports of sodium nitrite from India and Russia on their firms' growth, investment, ability to raise capital, development and production efforts, or the scale of capital investments. Table VI-9 presents the response of U.S. producer Chemtrade on the impact of subject imports in each category and table VI-10 provides Chemtrade's narrative responses.

[20] The operating ROA is calculated as operating income divided by total assets. With respect to a firm's overall operations, the total asset value reflects an aggregation of a number of assets which are generally not product specific. Thus, high-level allocations are generally required in order to report a total asset value for sodium nitrite.

Table VI-9
Sodium nitrite: U.S. producer Chemtrade's actual and anticipated negative effects of imports from subject sources on its 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-10
Sodium nitrite: Narratives relating to actual and anticipated negative effects of imports on U.S. producer Chemtrade's investment, growth, and development, since January 1, 2018

Item	Firm name and narrative on impact of imports
Reduction in the size of capital investments	***
Other effects on growth and development	***
Anticipated effects of imports	***

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

Part VII: Threat considerations and information on nonsubject countries

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

> *In determining whether an industry in the United States is threatened with material injury by reason of imports (or sales for importation) of the subject merchandise, the Commission shall consider, among other relevant economic 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 alleged subsidies was presented earlier in this report; information on the volume and pricing of imports of the subject merchandise is presented in *Parts IV* and *V*; and information on the effects of imports of the subject merchandise on the U.S. producer's 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 fourteen firms believed to produce and/or export sodium nitrite from India.[3] One usable response to the Commission's questionnaire was received from one firm, Deepak Nitrite Limited ("Deepak"). Deepak's exports to the United States accounted for the vast majority of U.S. imports of sodium nitrite from India in 2020.[4] According to Deepak, its production of sodium nitrite in India as reported in its questionnaire response accounts for approximately *** percent of overall production of sodium nitrite in India.[5] Table VII-1 presents information on the sodium nitrite operations of the responding producer/exporter in India.

Table VII-1
Sodium nitrite: Summary data for producer in India, 2020

Quantity in 1,000 pounds, dry measure basis; share in percent

Firm	Production (1,000 pounds, dry measure basis)	Share of reported production (percent)	Exports to the United States (1,000 pounds, dry measure basis)	Share of reported exports to the United States (percent)	Total shipments (1,000 pounds, dry measure basis)	Share of firm's total shipments exported to the United States (percent)
Deepak	***	***	***	***	***	***

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, the responding producer in India reported several operational and organizational changes since January 1, 2018.

[3] These firms were identified through a review of information submitted in the petitions and presented in third-party sources.

[4] Deepak stated that it is the largest exporter of sodium nitrite from India, accounting for more than 95 percent of such exports from India. Conference transcript, p. 80 (Gupta).

[5] Deepak reported knowledge of four other producers of sodium nitrite in India: Punjab Chemicals & Crop Protection Ltd., National Fertilizer Ltd., Rashtriya Chemicals & Fertilizers Ltd., and Kutch Chemical Industries Ltds. Only Kutch is reported to produce sodium nitrite, with a capacity of 15,000 metric tons annually, while the other three firms produce sodium nitrite only as a byproduct. Deepak postconference brief, att. A, p. 17.

Table VII-2
Sodium nitrite: Reported changes in Deepak's operations in India since January 1, 2018

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

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

Operations on sodium nitrite

Table VII-3 presents information on the sodium nitrite operations of the responding producer and exporter in India, Deepak. Deepak experienced an *** percent capacity increase from 2018 to 2020, with a further increase of *** percent projected in 2022 compared to 2020.[6] This would put 2022 capacity *** percent higher than capacity reported in 2018. While production levels did increase by *** percent from 2018 to 2020, the magnitude of the increase was less than the increase in capacity, leading to a decline in capacity utilization from 2018 to 2020. However, projected production levels for 2021 and 2022 show an increase compared to 2020 levels, with projected 2022 production *** percent higher than 2018. The projected rise in production also represents an increase in capacity utilization projected for 2022 compared to 2020.

From 2018 to 2020, exports to the United States from India increased by *** percent, and their share of the company's total shipments also increased by *** percentage points.[7] At the same time, exports to all other markets declined by *** percent, and declined by *** percentage points as a share of total shipments. In contrast, the projected shipments for 2021 and 2022 show a growth of *** percent in exports to all other markets, commensurate with a *** percentage point increase in exports to all other markets as a share of total shipments. Meanwhile, exports to the United States are projected to decline by *** percent from 2021 to 2022, though with projected 2022 levels of U.S. exports still *** percent higher than those reported in 2018. Home market shipments are also projected to rise by *** percent from 2021 to 2022. Thus, of the *** percent increase in total shipments projected from 2021 to 2022, *** percent are accounted for by growth in home market shipments and exports to other countries, causing U.S. exports as a share of total shipments to decline by *** percentage points in 2022 compared to 2021, leaving projected U.S. exports in 2022 as a share of total shipments *** percentage points lower than 2018 levels.

[6] As noted in table VII-2, Deepak reported that it ***.

[7] Deepak reported that approximately 70 percent of its exports were to Royce. Conference transcript, pp. 83-84 (Gupta).

End-of-period inventories held by Deepak in India declined by *** percent from 2018 to 2020, mirrored by a decline in inventory as a ratio to production and total shipments. However, inventory levels for interim 2021 are *** percent higher than for interim 2020, and projected 2021 inventory is *** percent higher than 2020 inventory levels. This growth in inventory is projected to reverse in 2022, with 2022 inventory *** percent lower than 2021 levels, although still *** percent higher than 2020 levels.

Table VII-3
Sodium nitrite: Data on industry in India, by period

Quantity in 1,000 pounds, dry measure basis

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
Sodium nitrite: Data on industry in India, by period

Ratios and shares 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

***.

Exports

According to GTA, the leading export markets for nitrites from India are the United States, Japan, and Germany (table VII-4). During 2020, the United States was the top export market for nitrites from India, accounting for 44.2 percent, followed by Japan, accounting for 15.9 percent, and Germany, accounting for 9.8 percent.

Table VII-4
Nitrites: Exports from India, by destination market and period

Quantity in 1,000 pounds, dry measure basis; value in 1,000 dollars

Destination market	Measure	2018	2019	2020
United States	Quantity	11,923	9,203	15,507
Japan	Quantity	8,076	6,883	5,579
Germany	Quantity	3,587	2,999	3,425
Saudi Arabia	Quantity	227	1,669	1,993
United Arab Emirates	Quantity	1,197	1,748	1,941
Brazil	Quantity	2,094	1,539	1,698
Korea, South	Quantity	2,734	2,116	1,080
Taiwan	Quantity	994	893	767
Canada	Quantity	84	636	750
All other destination markets	Quantity	3,046	3,828	2,326
All destination markets	Quantity	33,962	31,515	35,065
United States	Value	4,412	3,401	4,888
Japan	Value	2,561	2,016	1,563
Germany	Value	1,076	831	886
Saudi Arabia	Value	79	456	531
United Arab Emirates	Value	381	556	550
Brazil	Value	758	520	457
Korea, South	Value	967	722	339
Taiwan	Value	334	256	204
Canada	Value	32	253	156
All other destination markets	Value	1,185	1,942	949
All destination markets	Value	11,785	10,954	10,522

Table continued.

Table VII-4 Continued
Nitrites: Exports from India, by destination market and period

Unit value in dollars per pound, dry measure basis; shares in percent

Destination market	Measure	2018	2019	2020
United States	Unit value	0.37	0.37	0.32
Japan	Unit value	0.32	0.29	0.28
Germany	Unit value	0.30	0.28	0.26
Saudi Arabia	Unit value	0.35	0.27	0.27
United Arab Emirates	Unit value	0.32	0.32	0.28
Brazil	Unit value	0.36	0.34	0.27
Korea, South	Unit value	0.35	0.34	0.31
Taiwan	Unit value	0.34	0.29	0.27
Canada	Unit value	0.38	0.40	0.21
All other destination markets	Unit value	0.39	0.51	0.41
All destination markets	Unit value	0.35	0.35	0.30
United States	Share of quantity	35.1	29.2	44.2
Japan	Share of quantity	23.8	21.8	15.9
Germany	Share of quantity	10.6	9.5	9.8
Saudi Arabia	Share of quantity	0.7	5.3	5.7
United Arab Emirates	Share of quantity	3.5	5.5	5.5
Brazil	Share of quantity	6.2	4.9	4.8
Korea, South	Share of quantity	8.0	6.7	3.1
Taiwan	Share of quantity	2.9	2.8	2.2
Canada	Share of quantity	0.2	2.0	2.1
All other destination markets	Share of quantity	9.0	12.1	6.6
All destination markets	Share of quantity	100.0	100.0	100.0

Source: Official exports statistics under HS subheading 2834.10 as reported by Ministry of Commerce in the Global Trade Atlas database, accessed February 2, 2022.

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.

The industry in Russia

The Commission issued the foreign producers' or exporters' questionnaire to one firm believed to produce and/or export sodium nitrite from Russia.[8] No usable responses to the Commission's questionnaire were received from any sodium nitrite producers/exporters in Russia.[9]

Exports

According to GTA, the leading export markets for nitrites from Russia during 2020 were Australia and Kazakhstan (table VII-5). During 2020, the United States was the fourth-largest export market for nitrites from Russia, accounting for 8.4 percent of exports from Russia to all markets. The top export market for nitrites from Russia during 2020 was India, accounting for 35.9 percent, followed by Germany, accounting for 14.9 percent, and the Saudi Arabia, accounting for 9.2 percent.

[8] The firm was identified through a review of information submitted in the petitions and presented in third-party sources.

[9] Uralchem's Azot Branch is Russia's only manufacturer of crystallized sodium nitrite. Uralchem website, https://www.uralchem.com/about/assets/4651/, retrieved February 18, 2022.

Table VII-5
Nitrites: Exports from Russia, by destination market and period

Quantity in 1,000 pounds, dry measure basis; value in 1,000 dollars

Destination market	Measure	2018	2019	2020
United States	Quantity	---	---	1,634
India	Quantity	---	844	7,004
Germany	Quantity	---	---	2,901
Saudi Arabia	Quantity	---	---	1,799
Poland	Quantity	15,053	9,731	1,111
Australia	Quantity	---	---	816
United Kingdom	Quantity	---	---	794
Kazakhstan	Quantity	743	779	598
Taiwan	Quantity	---	---	556
All other destination markets	Quantity	769	2,132	2,316
All destination markets	Quantity	16,565	13,487	19,527
United States	Value	---	---	508
India	Value	---	185	1,483
Germany	Value	---	---	866
Saudi Arabia	Value	---	---	383
Poland	Value	3,923	2,148	372
Australia	Value	---	---	253
United Kingdom	Value	---	---	233
Kazakhstan	Value	302	280	183
Taiwan	Value	---	---	127
All other destination markets	Value	330	551	681
All destination markets	Value	4,555	3,164	5,091

Table continued.

Table VII-5 Continued
Nitrites: Exports from Russia, by destination market and period

Unit value in dollars per pound, dry measure basis; shares in percent

Destination market	Measure	2018	2019	2020
United States	Unit value	---	---	0.31
India	Unit value	---	0.22	0.21
Germany	Unit value	---	---	0.30
Saudi Arabia	Unit value	---	---	0.21
Poland	Unit value	0.26	0.22	0.33
Australia	Unit value	---	---	0.31
United Kingdom	Unit value	---	---	0.29
Kazakhstan	Unit value	0.41	0.36	0.31
Taiwan	Unit value	---	---	0.23
All other destination markets	Unit value	0.43	0.26	0.29
All destination markets	Unit value	0.27	0.23	0.26
United States	Share of quantity	---	---	8.4
India	Share of quantity	---	6.3	35.9
Germany	Share of quantity	---	---	14.9
Saudi Arabia	Share of quantity	---	---	9.2
Poland	Share of quantity	90.9	72.2	5.7
Australia	Share of quantity	---	---	4.2
United Kingdom	Share of quantity	---	---	4.1
Kazakhstan	Share of quantity	4.5	5.8	3.1
Taiwan	Share of quantity	---	---	2.8
All other destination markets	Share of quantity	4.6	15.8	11.9
All destination markets	Share of quantity	100.0	100.0	100.0

Source: Official exports statistics under HS subheading 2834.10 as reported by Customs Committee of Russia in the Global Trade Atlas database, accessed February 2, 2022.

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 sodium nitrite. U.S. importers' inventories of sodium nitrite from subject countries increased *** percent from 2018 to 2020, while the ratio of inventories to imports and shipments decreased. The increase in inventories from subject countries from 2018 to 2020 was driven by increases in inventories from both India and Russia, with inventories from India rising *** percent and inventories from Russia going from *** in 2018 to *** pounds in 2020. U.S. inventories of imports from India were lower in interim 2021 than in interim 2020, whereas the inventories held by U.S. importers of sodium nitrite from Russia were higher.

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

Quantity in 1,000 pounds, dry measure basis; 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	Russia	***	***	***	***	***
Ratio to imports	Russia	***	***	***	***	***
Ratio to U.S. shipments of imports	Russia	***	***	***	***	***
Ratio to total shipments of imports	Russia	***	***	***	***	***
Inventories quantity	Subject	***	***	***	***	***
Ratio to imports	Subject	***	***	***	***	***
Ratio to U.S. shipments of imports	Subject	***	***	***	***	***
Ratio to total shipments of imports	Subject	***	***	***	***	***
Inventories quantity	Nonsubject	***	***	***	***	***
Ratio to imports	Nonsubject	***	***	***	***	***
Ratio to U.S. shipments of imports	Nonsubject	***	***	***	***	***
Ratio to total shipments of imports	Nonsubject	***	***	***	***	***
Inventories quantity	All	***	***	***	***	***
Ratio to imports	All	***	***	***	***	***
Ratio to U.S. shipments of imports	All	***	***	***	***	***
Ratio to total shipments of imports	All	***	***	***	***	***

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

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 sodium nitrite from India and Russia after September 31, 2021. Their reported data is presented in table VII-7. Four importers reported outstanding orders through the first quarter of 2022, with subject imports from India accounting for *** percent of outstanding orders.

Table VII-7
Sodium nitrite: U.S. importers' arranged imports, by source and period

Quantity in 1,000 pounds, dry measure basis

Source	Oct-Dec 2021	Jan-Mar 2022	Apr-Jun 2022	Jul-Sep 2022	Total
India	***	***	***	***	***
Russia	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***

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

Third-country trade actions

Effective July 19, 2017, the Indian Ministry of Commerce and Industry extended antidumping duties on imports of sodium nitrite originating in or exported from China with a duty rate of $72.95 per metric ton.[10] Effective July 30, 2018, the Indian Ministry of Commerce and Industry extended antidumping duties on imports of sodium nitrite originating in or exported from the European Union with a duty rate of $51.83 per metric ton.[11][12]

[10] Sunset review of Anti-dumping duty imposed on the imports of Sodium Nitrite originating in or exported from China PR, F. No. 15/06/2016-DGAD.

[11] Mid-Term Review investigation concerning imports of "Sodium Nitrite" originating in or exported from the European Union, F. No. 7/12/2017-DGAD and Central Board of Indirect Taxes and Customs, Anti-dumping Duty Notifications, Chapter 28, February 2, 2018, pp. 2234-2235.

[12] In December 2017, the Indian Directorate General of Antidumping & Allied Duties, Ministry of Commerce and Industry initiated an antidumping investigation on imports of sodium nitrite from Russia. In July 2018, the investigation was terminated without the imposition of duties. https://www.globaltradealert.org/state-act/29603/india-initiation-and-subsequent-termination-of-antidumping-investigation-on-imports-of-sodium-nitrite-from-russia.

Information on nonsubject countries

The two largest nonsubject producing countries of sodium nitrite, China and Germany, are subject to U.S. countervailing and/or antidumping duty orders. In the Commission's most recent five-year review of those orders in 2019, Chemtrade stated that the industry in China had more than 40 producers with total production capacity of as much as *** metric tons. Chemtrade also provided a list of 10 firms in Germany believed to have either produced or exported sodium nitrite between 2008 and 2017 and stated that German producer BASF was the largest-capacity producer outside China, with an estimated production capacity, *** metric tons, that exceeded demand in the EU market.[13]

Table VII-8 presents global export data for nitrites, a category that includes sodium nitrite, as well as out-of-scope products.

[13] Investigation Nos. 701-TA-453 and 731-TA-1136-1137 (Second Review): Sodium Nitrite from China and Germany, Confidential Report, INV-RR-017, March 26, 2019.

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

Quantity in 1,000 pounds, dry measure basis; value in 1,000 dollars

Exporting country	Measure	2018	2019	2020
United States	Quantity	24,241	25,683	23,422
India	Quantity	33,962	31,515	35,065
Russia	Quantity	16,565	13,487	19,527
Subject exporters	Quantity	50,527	45,002	54,592
China	Quantity	114,948	101,004	62,034
Netherlands	Quantity	884	1,749	2,769
Saudi Arabia	Quantity	4,516	3,082	2,763
Poland	Quantity	2,347	2,081	2,038
Malaysia	Quantity	2,329	1,657	1,570
South Africa	Quantity	719	1,516	1,383
Sweden	Quantity	1,130	1,110	1,170
Australia	Quantity	873	1,247	964
All other exporters	Quantity	11,703	7,520	7,257
All reporting exporters	Quantity	214,684	194,590	159,301
United States	Value	7,111	7,846	6,906
India	Value	11,785	10,954	10,522
Russia	Value	4,555	3,164	5,091
Subject exporters	Value	16,339	14,117	15,613
China	Value	29,510	22,690	14,284
Netherlands	Value	703	974	1,207
Saudi Arabia	Value	2,751	1,470	1,702
Poland	Value	1,064	1,054	1,047
Malaysia	Value	192	152	154
South Africa	Value	420	711	659
Sweden	Value	952	736	692
Australia	Value	657	892	762
All other exporters	Value	11,320	4,375	3,955
All reporting exporters	Value	70,782	55,606	46,600

Table continued.

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

Unit values in dollars per pound, dry measure basis; shares in percent

Exporting country	Measure	2018	2019	2020
United States	Unit value	0.29	0.31	0.29
India	Unit value	0.35	0.35	0.30
Russia	Unit value	0.27	0.23	0.26
Subject exporters	Unit value	0.32	0.31	0.29
China	Unit value	0.26	0.22	0.23
Netherlands	Unit value	0.80	0.56	0.44
Saudi Arabia	Unit value	0.61	0.48	0.62
Poland	Unit value	0.45	0.51	0.51
Malaysia	Unit value	0.08	0.09	0.10
South Africa	Unit value	0.58	0.47	0.48
Sweden	Unit value	0.84	0.66	0.59
Australia	Unit value	0.75	0.72	0.79
All other exporters	Unit value	0.97	0.58	0.54
All reporting exporters	Unit value	0.33	0.29	0.29
United States	Share of quantity	11.3	13.2	14.7
India	Share of quantity	15.8	16.2	22.0
Russia	Share of quantity	7.7	6.9	12.3
Subject exporters	Share of quantity	23.5	23.1	34.3
China	Share of quantity	53.5	51.9	38.9
Netherlands	Share of quantity	0.4	0.9	1.7
Saudi Arabia	Share of quantity	2.1	1.6	1.7
Poland	Share of quantity	1.1	1.1	1.3
Malaysia	Share of quantity	1.1	0.9	1.0
South Africa	Share of quantity	0.3	0.8	0.9
Sweden	Share of quantity	0.5	0.6	0.7
Australia	Share of quantity	0.4	0.6	0.6
All other exporters	Share of quantity	5.5	3.9	4.6
All reporting exporters	Share of quantity	100.0	100.0	100.0

Source: Official export statistics under HS subheading 2834.10, as reported by various national statistical authorities in the Global Trade Atlas database, accessed February 2, 2022.

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 3333, January 21, 2022	*Sodium Nitrite From India and Russia; Institution of Antidumping and Countervailing Duty Investigations and Scheduling of Preliminary Phase Investigations*	https://www.govinfo.gov/content/pkg/FR-2022-01-21/pdf/2022-01089.pdf
87 FR 7108, February 8, 2022	*Sodium Nitrite From India and the Russian Federation: Initiation of Countervailing Duty Investigations*	https://www.govinfo.gov/content/pkg/FR-2022-02-08/pdf/2022-02634.pdf
87 FR 7122, February 8, 2022	*Sodium Nitrite From India and the Russian Federation: Initiation of Less-Than-Fair-Value Investigations*	https://www.govinfo.gov/content/pkg/FR-2022-02-08/pdf/2022-02635.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: Sodium Nitrite from India and Russia

Inv. Nos.: 701-TA-679-680 and 731-TA-1585-1586 (Preliminary)

Date and Time: February 3, 2022 - 9:30 a.m.

OPENING REMARKS:

In Support of Imposition (**Mary Jane Alves**, Cassidy Levy Kent (USA) LLC)

In Opposition to Imposition (**A K Gupta,** TPM Solicitors & Consultants)

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

Cassidy Levy Kent (USA) LLC
Washington, DC
on behalf of

Chemtrade Chemicals US LLC

Don Boonstra, Business Director, Electrochemicals Business Unit, Chemtrade

Douglas McFarland, Director, Sales and Marketing, Chemtrade Logistics Inc.

Willard "Ray" Emfinger, Commercial Manager for Sodium Nitrite, Chemtrade Logistics Inc.

James R. Cannon, Jr.)
) – OF COUNSEL
Mary Jane Alves)

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

TPM Solicitors & Consultants
Saket, New Delhi
on behalf of

Deepak Nitrite Limited

A K Gupta	)
Namrita Raghuwanshi	)
Vikas Arora	)
Anand Nandakumar	) – OF COUNSEL
Dhanya.P.K	)
Nehwath Fathima	)
Nishtha Gupta	)

REBUTTAL/CLOSING REMARKS:

In Support of Imposition (**James R. Cannon, Jr.**, Cassidy Levy Kent (USA) LLC)
In Opposition to Imposition (**A K Gupta**, TPM Solicitors & Consultants)

-END-

APPENDIX C

SUMMARY DATA

Table C-1
Sodium nitrite: Summary data concerning the U.S. market, 2018-20, January to September 2020, and January to September 2021
Quantity=1,000 pounds, dry measure basis; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per pound, dry measure basis; 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. consumption quantity:									
Amount	***	***	***	***	***	▼***	▼***	▲***	▲***
Producers' share (fn1)	***	***	***	***	***	▼***	▼***	▼***	▼***
Importers' share (fn1):									
India	***	***	***	***	***	▲***	▲***	▲***	▲***
Russia	***	***	***	***	***	▲***	▲***	▲***	▼***
Subject sources	***	***	***	***	***	▲***	▲***	▲***	▲***
Nonsubject sources	***	***	***	***	***	▲***	▼***	▲***	▲***
All import sources	***	***	***	***	***	▲***	▲***	▲***	▲***
U.S. consumption value:									
Amount	***	***	***	***	***	▼***	▼***	▲***	▲***
Producers' share (fn1)	***	***	***	***	***	▼***	▼***	▼***	▼***
Importers' share (fn1):									
India	***	***	***	***	***	▲***	▲***	▲***	▲***
Russia	***	***	***	***	***	▲***	▲***	▲***	▼***
Subject sources	***	***	***	***	***	▲***	▲***	▲***	▲***
Nonsubject sources	***	***	***	***	***	▲***	▲***	▲***	▲***
All import sources	***	***	***	***	***	▲***	▲***	▲***	▲***
U.S. imports from:									
India:									
Quantity	11,162	10,356	12,864	8,630	11,931	▲15.2	▼(7.2)	▲24.2	▲38.2
Value	4,172	3,920	4,708	3,173	4,709	▲12.8	▼(6.1)	▲20.1	▲48.4
Unit value	$0.37	$0.38	$0.37	$0.37	$0.39	▼(2.1)	▲1.3	▼(3.3)	▲7.4
Ending inventory quantity	***	***	***	***	***	▲***	▼***	▲***	▼***
Russia:									
Quantity	88	298	1,969	1,466	1,173	▲2,132.5	▲237.5	▲561.5	▼(20.0)
Value	33	97	623	465	437	▲1,816.0	▲197.9	▲543.1	▼(5.8)
Unit value	$0.37	$0.33	$0.32	$0.32	$0.37	▼(14.2)	▼(11.7)	▼(2.8)	▲17.7
Ending inventory quantity	***	***	***	***	***	▲***	▲***	▲***	▲***
Subject sources:									
Quantity	11,250	10,654	14,833	10,096	13,104	▲31.8	▼(5.3)	▲39.2	▲29.8
Value	4,205	4,017	5,331	3,637	5,147	▲26.8	▼(4.5)	▲32.7	▲41.5
Unit value	$0.37	$0.38	$0.36	$0.36	$0.39	▼(3.8)	▲0.9	▼(4.7)	▲9.0
Ending inventory quantity	***	***	***	***	***	▲***	▲***	▲***	▼***
Nonsubject sources:									
Quantity	59	48	330	248	1,233	▲462.3	▼(18.7)	▲591.6	▲396.9
Value	57	68	118	95	420	▲108.2	▲19.8	▲73.8	▲340.5
Unit value	$0.96	$1.42	$0.36	$0.38	$0.34	▼(63.0)	▲47.3	▼(74.9)	▼(11.4)
Ending inventory quantity	***	***	***	***	***	***	***	***	***
All import sources:									
Quantity	11,309	10,701	15,163	10,345	14,337	▲34.1	▼(5.4)	▲41.7	▲38.6
Value	4,261	4,084	5,449	3,733	5,566	▲27.9	▼(4.2)	▲33.4	▲49.1
Unit value	$0.38	$0.38	$0.36	$0.36	$0.39	▼(4.6)	▲1.3	▼(5.8)	▲7.6
Ending inventory quantity	***	***	***	***	***	▲***	▲***	▲***	▼***

Table continued on next page.

Table C-1 Continued
Sodium nitrite: Summary data concerning the U.S. market, 2018-20, January to September 2020, and January to September 2021
Quantity=1,000 pounds, dry measure basis; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per pound, dry measure basis; 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':									
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	***	***	***	***	***	▲***	▲***	▲***	▼***
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	***	***	***	***	***	▼***	▼***	▼***	***

Source: Compiled from data submitted in response to Commission questionnaires and from official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting numbers 2834.10.1000, accessed January 28, 2022. Imports are based on the imports for consumption data series. Import 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.

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.

APPENDIX D

COMPARISONS OF LIQUID TO DRY SODIUM NITRITE AND FOOD GRADE TO TECHNICAL GRADE SODIUM NITRITE

Table D-1
Sodium nitrite: Count of firms' responses regarding the domestic like factors comparing liquid to dry sodium nitrite

Count in number of firms reporting

Factor	Firm type	Fully	Mostly	Somewhat	Never
Physical characteristics	U.S. producers	0	1	0	0
Physical characteristics	U.S. importers	0	0	1	0
Interchangeability	U.S. producers	1	0	0	0
Interchangeability	U.S. importers	0	0	1	0
Channels	U.S. producers	1	0	0	0
Channels	U.S. importers	0	1	0	0
Manufacturing	U.S. producers	0	1	0	0
Manufacturing	U.S. importers	0	0	0	0
Perceptions	U.S. producers	1	0	0	0
Perceptions	U.S. importers	0	1	1	0
Price	U.S. producers	1	0	0	0
Price	U.S. importers	0	0	2	0

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

Table D-2
Sodium nitrite: U.S. producer ChemTrade's narratives regarding the domestic like product factors comparing dry and liquid sodium nitrite

Factor	Producer name and narrative on DLP dry vs liquid
Physical characteristics	***
Interchangeability	***
Channels	***
Manufacturing	***
Perceptions	***
Price	***

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

Table D-3
Sodium nitrite: U.S. importers' narratives regarding the domestic like product factors comparing dry and liquid sodium nitrite

Factor	Importer name and narrative on DLP dry vs liquid
Physical characteristics	***
Physical characteristics	***
Physical characteristics	***
Interchangeability	***
Interchangeability	***
Interchangeability	***
Channels	***
Channels	***
Channels	***
Manufacturing	***
Manufacturing	***
Manufacturing	***
Perceptions	***
Perceptions	***
Perceptions	***
Price	***
Price	***
Price	***

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

Table D-4
Sodium nitrite: Count of firms' responses regarding the domestic like factors comparing food to technical grade sodium nitrite

Count in number of firms reporting

Factor	Firm type	Fully	Mostly	Somewhat	Never
Physical characteristics	U.S. producers	0	1	0	0
Physical characteristics	U.S. importers	0	0	0	0
Interchangeability	U.S. producers	0	1	0	0
Interchangeability	U.S. importers	0	0	0	0
Channels	U.S. producers	0	1	0	0
Channels	U.S. importers	0	0	0	0
Manufacturing	U.S. producers	0	1	0	0
Manufacturing	U.S. importers	0	0	0	0
Perceptions	U.S. producers	0	1	0	0
Perceptions	U.S. importers	0	0	0	0
Price	U.S. producers	0	1	0	0
Price	U.S. importers	0	0	1	0

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

Table D-5
Sodium nitrite: U.S. producer ChemTrade's narratives regarding the domestic like product factors comparing food to technical grade sodium nitrite

Factor	Producer name and narrative on DLP dry vs liquid
Physical characteristics	***
Interchangeability	***
Channels	***
Manufacturing	***
Perceptions	***
Price	***

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

Table D-6
Sodium nitrite: U.S. importers' narratives regarding the domestic like product factors comparing food to technical grade sodium nitrite

Factor	Importer name and narrative on DLP dry vs liquid
Physical characteristics	***
Physical characteristics	***
Physical characteristics	***
Interchangeability	***
Interchangeability	***
Interchangeability	***
Channels	***
Channels	***
Channels	***
Manufacturing	***
Manufacturing	***
Manufacturing	***
Perceptions	***
Perceptions	***
Perceptions	***
Price	***
Price	***
Price	***

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