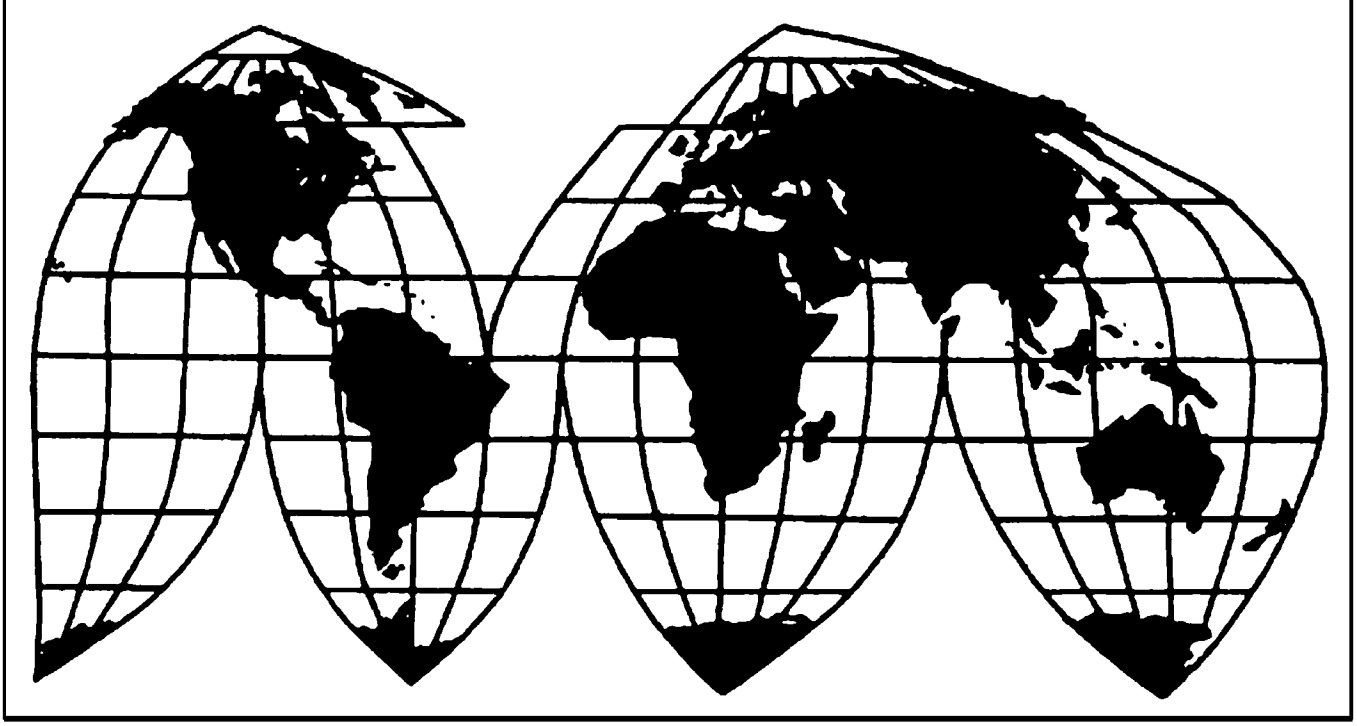
Superabsorbent Polymers from South Korea

Investigation No. 731-TA-1574 (Preliminary)

Publication 5273 **December 2021**

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

Staff assigned

Lawrence Jones, Investigator
Jennifer Catalano, Industry Analyst
Cindy Cohen, Economist
Charles Yost, Accountant
Jennifer Catalano, Accountant
Aaron Woodward, Statistician
David Goldfine, Attorney
Elizabeth Haines, Supervisory Investigator

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

U.S. International Trade Commission

Washington, DC 20436
www.usitc.gov

Superabsorbent Polymers from South Korea

Investigation No. 731-TA-1574 (Preliminary)

Publication 5273

December 2021

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Note.—Information that would reveal confidential operations of individual concerns may not be published.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 No. 731-TA-1574 (Preliminary)

Superabsorbent Polymers from South Korea

DETERMINATION

On the basis of the record[1] developed in the subject investigation, 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 superabsorbent polymers ("SAP") from South Korea, provided for in subheading 3906.90.50 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").[2]

COMMENCEMENT OF FINAL PHASE INVESTIGATION

Pursuant to section 207.18 of the Commission's rules, the Commission also gives notice of the commencement of the final phase of its investigation. The Commission will issue a final phase notice of scheduling, which will be published in the *Federal Register* as provided in section 207.21 of the Commission's rules, upon notice from the U.S. Department of Commerce ("Commerce") of an affirmative preliminary determination in the investigation under § 733(b) of the Act, or, if the preliminary determination is negative, upon notice of an affirmative final determination in that investigation under § 735(a) of the Act. Parties that filed entries of appearance in the preliminary phase of the investigation need not enter a separate appearance for the final phase of the investigation. 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 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 investigation.

---

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

[2] 86 FR 6715 (November 30, 2021).

BACKGROUND

On November 2, 2021, the Ad Hoc Coalition of American SAP Producers, whose members include BASF Corporation ("BASF"), Florham Park, New Jersey; Evonik Superabsorber LLC ("Evonik"), Greensboro, North Carolina; and Nippon Shokubai America Industries, Inc. ("NSAI"), Pasadena, Texas, filed a petition with the Commission and Commerce, alleging that an industry in the United States is materially injured or threatened with material injury by reason of LTFV imports of superabsorbent polymers from South Korea. Accordingly, effective November 2, 2021, the Commission instituted antidumping duty investigation No. 731-TA-1574 (Preliminary).

Notice of the institution of the Commission's investigation 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 November 10, 2021 (86 FR 52565). In light of the restrictions on access to the Commission building due to the COVID–19 pandemic, the Commission conducted its conference through written testimony and video conference. All persons who requested the opportunity were permitted to participate.

Views of the Commission

Based on the record in the preliminary phase of this investigation, we determine that there is a reasonable indication that an industry in the United States is materially injured by reason of imports of superabsorbent polymers ("SAP") from South Korea that are allegedly sold in the United States at less than fair value.

I. The Legal Standard for Preliminary Determinations

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

II. Background

The petitioner, the Ad Hoc Coalition of American SAP Producers ("Petitioner" or "the Coalition"), filed the petition in this investigation on November 2, 2021. The Coalition's members consist of three domestic producers of SAP: BASF Corporation ("BASF"), Evonik Superabsorber LLC ("Evonik"), and Nippon Shokubai America Industries, Inc. ("NSAI"). Representatives for Petitioner submitted testimony and appeared at the staff conference accompanied by counsel. Petitioner also submitted a postconference brief.

Three respondent entities participated in this investigation. LG Chem. America Inc., Ltd. ("LG"), a U.S. importer of subject merchandise from South Korea, submitted testimony and appeared at the staff conference accompanied by counsel and submitted a postconference brief. The Procter & Gamble Company and The Procter & Gamble Paper Products Company (collectively, "P&G"), U.S. importers of subject merchandise from South Korea and purchasers

[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).

of SAP, also submitted testimony and appeared at the staff conference accompanied by counsel and submitted a postconference brief. Kimberly-Clark Corporation ("KCC"), a U.S. purchaser of SAP, submitted a postconference brief.

U.S. industry data in the staff report are based on the questionnaire responses of three firms accounting for all U.S. production of SAP in 2020.[3] U.S. import data are based on the questionnaire responses from seven U.S. importers, accounting for *** of imports from South Korea in 2020 under Harmonized Tariff Schedule statistical reporting number 3906.90.5000.[4] Foreign industry data and related information are based on the questionnaire responses of one producer/exporter of SAP in South Korea accounting for approximately *** percent of SAP production in South Korea in 2020 and *** of U.S. imports of subject merchandise from South Korea in 2020.[5]

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."[6] 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."[7] 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."[8]

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 the U.S. Department of Commerce ("Commerce").[9] Therefore, Commerce's determination as to the

[3] Confidential Report ("CR") at I-3, INV-TT-135 (Dec. 9, 2021).

[4] CR/PR at I-3-4 & IV-1. HTS statistical reporting number 3906.90.5000 is a "basket" category that contains out-of-scope merchandise; thus, we have not relied on official import statistics to measure imports of SAPs. CR/PR at IV-1. Importer questionnaire responses account for approximately *** of total imports reported under HTS statistical reporting number 3906.90.5000 in 2020. CR/PR at I-4 & IV-1 n.3.

[5] CR/PR at I-4 & VII-3.

[6] 19 U.S.C. § 1677(4)(A).

[7] 19 U.S.C. § 1677(4)(A).

[8] 19 U.S.C. § 1677(10).

[9] 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 (Continued…)

scope of the imported merchandise that is subsidized and/or sold at less than fair value is "necessarily the starting point of the Commission's like product analysis."[10] The Commission then defines the domestic like product in light of the imported articles Commerce has identified.[11] 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.[12] No single factor is dispositive, and the Commission may consider other factors it deems relevant based on the facts of a particular investigation.[13] The Commission looks for clear dividing lines among possible like products and disregards minor variations.[14] The Commission may, where appropriate, include domestic articles in the domestic like product in addition to those described in the scope.[15]

(…Continued)
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).

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

[11] *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).

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

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

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

[15] *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).

A. Scope Definition

In its notice of initiation, Commerce defined the imported merchandise within the scope of this investigation as:

> . . . superabsorbent polymers (SAP), which is cross-linked sodium polyacrylate most commonly conforming to Chemical Abstracts Service (CAS) registry number 9003–04–7, where at least 90 percent of the dry matter, by weight on a nominal basis, corrected for moisture content, is comprised of a polymer with a chemical formula of $(C_3H_3O_2Na_xH_{1-x})_n$, where x is within a range of 0.00–1.00 and there is no limit to n. The subject merchandise also includes merchandise with a chemical formula of $\{(C_2H_3)COONa_yH_{(1-y)}\}_n$, where y is within a range of 0.00–1.00 and there is no limit to n. The subject merchandise includes SAP which is fully neutralized as well as SAP that is not fully neutralized. The subject merchandise may also conform to CAS numbers 25549–84–2, 77751–27–0, 9065–11–6, 9033–79–8, 164715–58–6, 445299–36–5, 912842–45–6, 561012–86–0, 561012–85–9, or 9003–01–4. All forms and sizes of SAP, regardless of packaging type, including but not limited to granules, pellets, powder, fibers, flakes, liquid, or gel are within the scope of this investigation. The scope also includes SAP whether or not it incorporates additives for anticaking, anti-odor, anti-yellowing, or similar functions. The scope also includes SAP that is combined, commingled, or mixed with other products after final sieving. For such combined products, only the SAP component is covered by the scope of this investigation. SAP that has been combined with other products is included within the scope, regardless of whether the combining occurs in third countries. A combination is excluded from this investigation if the total SAP component of the combination (regardless of the source or sources) comprises less than 50 percent of the combination, on a nominal dry weight basis. SAP is classified under the Harmonized Tariff Schedule of the United States (HTSUS) subheading 3906.90.5000. SAP may also enter the United States under HTSUS 3906.90.9000[16] or 3906.10.0000. Although the HTSUS subheadings and CAS registry numbers are provided for convenience and customs purposes, the written description of the merchandise is dispositive.[17]

SAP is a class of polymers that have a high capacity to absorb and retain water and aqueous liquids.[18] SAP is made by combining (polymerizing) monomer molecules of sodium

[16] HTSUS 3906.90.9000 is not a current or past valid HTSUS classification number. CR/PR at I-5 n.9.

[17] *Certain Superabsorbent Polymers from the Republic of Korea: Initiation of Less-Than-Fair-Value Investigation*, 86 Fed. Reg. 67915, 67919 (Nov. 30, 2021).

[18] CR/PR at I-6.

acrylate to form long molecular chains.[19] The two primary components of SAP, comprising over *** percent of the cost of the product, are acrylic acid and sodium hydroxide (also called caustic soda) with propylene as a precursor to making acrylic acid.[20] SAP is typically produced in granular, powder form.[21] SAP is insoluble in water, but can absorb and retain from 100 to 1000 times its own weight in water or from 20 to 60 times its own weight in body fluids (such as urine).[22] Upon contact with aqueous liquid, the sodium ions in the material become dissociated, generating an osmotic pressure which drives more liquid into the SAP and binding it tightly within.[23] The liquid is not only absorbed but also retained inside the particles, even under external pressure.[24] The absorption process causes a phase change of the polymer from a dry powder to a soft gel that is still capable of absorbing further liquid.[25]

SAP is mainly used as an absorbent agent in hygiene applications, such as baby diapers, adult diapers, and feminine hygiene products.[26] SAP can also be used in food-related areas, such as refrigerant or freshness-keeping agents, and in household products, such as disposable heating packs or environment fragrance.[27] SAP is also sometimes used for water retention in agriculture or civil engineering projects.[28]

B. Parties' Arguments

Petitioner's Arguments. Petitioner argues that the Commission should define a single domestic like product consisting of all SAP, coextensive with Commerce's scope in the preliminary phase of this investigation.[29] It contends that all domestically produced SAP within the scope have similar physical characteristics and uses, the same channels of distribution, common manufacturing facilities, production processes, and employees, are perceived by market participants to be a single product category, are generally interchangeable, and are sold within a reasonable range of similar prices.[30]

Respondents' Arguments. LG and P&G stated at the conference that they agreed with Petitioner's proposed domestic like product definition for purposes of this preliminary

[19] CR/PR at I-9.
[20] CR/PR at I-9.
[21] CR/PR at I-6.
[22] CR/PR at I-6.
[23] CR/PR at I-6.
[24] CR/PR at I-6.
[25] CR/PR at I-6.
[26] CR/PR at I-6.
[27] CR/PR at I-7.
[28] CR/PR at I-7.
[29] Petitioner's Postconf. Br. at 5.
[30] Petitioner's Postconf. Br. 5-8.

determination and did not specifically address domestic like product in their postconference brief or responses to staff questions.[31]

C. Analysis

Based on the current record, we define a single domestic like product consisting of all domestically produced SAP coextensive with the scope.

Physical Characteristics and Uses. All domestically produced SAP within the scope are polymers with the same basic chemical composition and the same basic inputs.[32] In addition to their main raw material inputs of acrylic acid and sodium hydroxide (*i.e.*, caustic soda), all domestically produced SAP also share other raw material inputs including cross-linkers and initiators.[33] All domestically produced SAP within the scope are typically produced in granular or powder form,[34] and are used predominantly as an absorbent agent in infant diapers, adult incontinence products, and feminine hygiene products.[35]

Manufacturing Facilities, Production Processes, and Employees. All domestically produced SAP within the scope are manufactured using the same general production process, which includes neutralization, polymerization, gel modification and drying, grinding, sieving, and surface crosslinking.[36] At the conference, witnesses appearing on behalf of Petitioner reported that domestic producers BASF, Evonik, and NSAI produce the full range of their respective in-scope SAP products at the same facilities using the same employees.[37]

Channels of Distribution. During the period of investigation ("POI"), all domestically produced SAP within the scope was sold overwhelmingly to end users, ranging from *** percent to *** percent of the domestic industry's U.S. shipments, with the remainder sold to distributors (ranging from *** percent to *** percent).[38]

Interchangeability. At the conference, industry witnesses appearing on behalf of Petitioner testified that all domestically produced SAP within the scope is generally interchangeable.[39] LG, P&G, and KCC argue that all domestically produced SAP within the scope

---

[31] Conf. Tr. at 150-151 (Mowry and Fischer-Fox). KCC did not address the issue of the domestic like product.

[32] CR/PR at I-9-10 & Table I-3; Petitioner's Postconf. Br. at 6; Conf. Tr. at 73-74 (Terhart).

[33] CR/PR at I-11-12 & Table I-3; Conf. Tr. at (Terhart).

[34] CR/PR at I-5; Petition at 6; Conf. Tr. at 77 (Greer and Cauble).

[35] CR/PR at I-3 & I-6; Petitioner's Postconf. Br. at 6.

[36] CR/PR at I-12-13; Petitioner's Postconf. Br. at 6.

[37] *See e.g.*, Conf. Tr. at 78-79 (Clark, Cauble, and Nebel) & Petitioner's Postconf. Br., Exh. 1, Answers to Staff Questions at 12. ***. LG Postconf. Br. at 13.

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

[39] Conf. Tr. at 78 (Cauble) & 83-84 (Cauble, Clark, and Nebel); Petitioner's Postconf. Br. at 7.

are custom-made to each purchaser's specifications and are not generally interchangeable.[40] At the conference, a witness appearing on behalf of P&G stated that P&G does not make a distinction between qualified sources of a given grade of SAP.[41]

Producer and Customer Perceptions. According to Petitioner, customers and producers perceive all domestically produced SAP within the scope as comprising a single product category.[42]

Price. According to Petitioner, all domestically produced SAP within the scope are sold within the same general price range.[43] The pricing data collected in the preliminary phase of this investigation indicate that prices for all domestically produced SAP within the scope overlap and fall within a reasonably close range, which corroborate Petitioner's assertion.[44]

Conclusion. All domestically produced SAP within the scope have similar chemistry and are made from the same raw materials. In addition, all in-scope domestically produced SAP share the same basic use, primarily as an absorbent agent in infant diapers and adult incontinence and feminine hygiene products. All domestically produced SAP within the scope are generally manufactured in the same manufacturing facilities using the same employees and is sold overwhelmingly to end users at prices that are within a reasonably close range. Information available also indicates that domestically produced SAP within the scope is perceived as comprising a single product category and is interchangeable when produced to the same specifications. In light of the above, and the agreement among the parties on the domestic like product definition, we define a single domestic like product consisting of all domestically produced SAP, 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."[45] 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.

---

[40] LG Postconf. Br. at 9; KCC Postconf. Br. at 2; P&G Answers to Staff Questions, Exh. 1 (Issue: Interchangeability and Issue: Price).

[41] Conf. Tr. at 146 (Gordon).

[42] Petitioner's Postconf. Br. at 7; Petition at 9.

[43] Petitioner's Postconf. Br. at 8.

[44] CR/PR at Tables V-4 to V-7.

[45] 19 U.S.C. § 1677(4)(A).

Petitioner's Arguments. Petitioner maintains that no domestic producers of SAP qualify as related parties subject to possible exclusion under the statute.[46] Petitioner urges the Commission to define a single domestic industry comprised of all domestic producers of SAP.[47]

Respondents' Arguments. Respondents agree with the Petitioner's proposed definition of the domestic industry for purposes of this preliminary investigation.[48]

Based on the current record, there are no issues arising under the related party provision or any other domestic industry issues in the preliminary phase of this investigation.[49] In light of our domestic like product definition, we define a single domestic industry consisting of all U.S. producers of SAP, namely BASF, Evonik, and NSAI.

V. Reasonable Indication of Material Injury by Reason of Subject Imports[50]

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.[51] In making this determination, the Commission must consider the volume of subject imports, their effect on prices for the domestic like product, and their impact on domestic producers of the domestic like product, but only in the context of U.S. production operations.[52] The statute defines "material injury" as "harm which is not inconsequential,

[46] Petitioner's Postconf. Br. at 9 n.32.

[47] Petitioner's Postconf. Br. at 8-9.

[48] Conf. Tr. at 151 (Fischer-Fox).

[49] None of the three domestic producers are related to producers or exporters of SAP in South Korea or U.S. importers of subject merchandise from South Korea and none of them imported subject merchandise from South Korea during the POI. CR/PR at Tables III-2 & Tables III-7-9.

[50] Pursuant to Section 771(24) of the Tariff Act, imports from a subject country of merchandise corresponding to a domestic like product that account for less than 3 percent of all such merchandise imported into the United States during the most recent 12 months for which data are available preceding the filing of the petition shall be deemed negligible. 19 U.S.C. §§ 1671b(a), 1673b(a), 1677(24)(A)(i), 1677(24)(B).

Negligibility is not an issue in this investigation. Subject imports from South Korea accounted for *** percent of total U.S. imports of SAP in the 12-month period (November 2020 to October 2021) preceding the filing of the petition. CR/PR at Table IV-4.

[51] 19 U.S.C. §§ 1671b(a), 1673b(a).

[52] 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).

immaterial, or unimportant."[53] 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.[54] 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."[55]

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,[56] 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.[57] In identifying a causal link, if any, between subject imports and material injury to the domestic industry, the Commission examines the facts of record that relate to the significance of the volume and price effects of the subject imports and any impact of those imports on the condition of the domestic industry. This evaluation under the "by reason of" standard must ensure that subject imports are more than a minimal or tangential cause of injury and that there is a sufficient causal, not merely a temporal, nexus between subject imports and material injury.[58]

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

---

[53] 19 U.S.C. § 1677(7)(A).

[54] 19 U.S.C. § 1677(7)(C)(iii).

[55] 19 U.S.C. § 1677(7)(C)(iii).

[56] 19 U.S.C. §§ 1671b(a), 1673b(a).

[57] *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).

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

injury threshold.[59] In performing its examination, however, the Commission need not isolate the injury caused by other factors from injury caused by unfairly traded imports.[60] Nor does the "by reason of" standard require that unfairly traded imports be the "principal" cause of injury or contemplate that injury from unfairly traded imports be weighed against other factors, such as nonsubject imports, which may be contributing to overall injury to an industry.[61] It is clear that the existence of injury caused by other factors does not compel a negative determination.[62]

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."[63] The Commission ensures that it has "evidence in the record" to "show that the

---

[59] 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.

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

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

[62] *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.").

[63] *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'

(Continued…)

harm occurred 'by reason of' the LTFV imports," and that it is "not attributing injury from other sources to the subject imports." [64] The Federal Circuit has examined and affirmed various Commission methodologies and has disavowed "rigid adherence to a specific formula."[65]

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.[66] Congress has delegated this factual finding to the Commission because of the agency's institutional expertise in resolving injury issues.[67]

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

Demand for SAP is driven by demand for the downstream products in which it is used.[68] The major end uses for SAP are hygiene products, particularly infant diapers, as well as adult incontinence products and feminine hygiene products.[69] Other end uses for SAP, which are relatively small, include food-related uses, such as refrigerant or freshness-keeping agents, household products, such as disposable heating packs or environment fragrance, and water

---

(…Continued)
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*.

[64] *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.

[65] *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.").

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

[67] *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.").

[68] CR/PR at II-7.

[69] CR/PR at II-7.

retention in agriculture or civil engineering projects.[70] SAP generally accounts for a small-to-moderate share of the cost of the products in which it is used.[71]

All responding U.S. producers and importers reported that U.S. demand for SAP either had increased or had not changed since January 1, 2018.[72] Apparent U.S. consumption of SAP declined from *** metric tons ("MT") in 2018 to *** MT in 2019, but then increased to *** MT in 2020, a level *** percent higher than in 2019[73] and *** percent higher than in 2018.[74] Apparent U.S. consumption of SAP was *** percent higher in interim 2021, at *** MT, than in interim 2020, at *** MT.[75] [76]

2. Supply Conditions

The domestic industry was the largest supplier of SAP to the U.S. market throughout the POI.[77] It consisted of three firms: two large producers, Evonik and BASF, accounting for approximately *** percent of domestic production of SAP in 2020 and one smaller producer, NSAI, accounting for *** percent of domestic production.[78] The domestic industry's market share increased from *** percent of apparent U.S. consumption in 2018 to *** percent in 2019, but then declined to *** percent in 2020; its market share was lower in interim 2021, at *** percent, than in interim 2020, at *** percent.[79]

*** domestic producers reported that the COVID-19 pandemic did not have an impact on their ability to supply the U.S. market for SAP during the POI,[80] but *** domestic producers

---

[70] CR/PR at II-7.

[71] CR/PR at II-7. For example, market participants reported that SAP accounts for 12 to 25 percent of the cost of hygiene products. *Id*.

[72] CR/PR at Table II-4. Two of three responding U.S. producers reported that U.S. demand for SAP had increased since January 1, 2018, and the other responding producer reported that U.S. demand for SAP had not changed. *Id*. Two of three responding U.S. importers reported that U.S. demand for SAP had not changed since January 1, 2018, and the other responding importer reported that U.S. demand for SAP had increased. *Id*.

[73] Both LG and P&G argue that the COVID-19 pandemic caused an increase in U.S. demand for SAP between 2019 and 2020. LG Postconf. Br. at 2, 22; Conf. Tr. at 192 (Wilson).

[74] CR/PR at Tables IV-7 & C-1.

[75] CR/PR at Tables IV-7 & C-1.

[76] All three responding U.S. producers and all four responding U.S. importers reported that the U.S. market for SAP was not subject to business cycles. CR/PR at II-8.

[77] CR/PR at Tables IV-8 and C-1.

[78] In 2020, Evonik accounted for *** percent of domestic production of SAP and BASF accounted for *** percent. CR/PR at Table III-1.

[79] CR/PR at Tables IV-8 and C-1.

[80] CR/PR at II-6-7. With respect to the COVID-19 pandemic, Petitioner reported some additional costs to U.S. producers as they implemented strict hygiene protocols in their production plants, but that (Continued…)

reported that they experienced supply constraints in interim 2021 due to Winter Storm Uri in February 2021 and Hurricane Ida in August 2021.[81] Two of the three domestic producers (***), however, reported that in the aftermath of these weather events they were able to at least partially service their contracts in interim 2021 using inventories.[82] Purchasers of SAP also reported supply constraints from domestic producers due to these severe weather events.[83] In any final phase of this investigation, we intend to examine further the issue of domestic industry supply constraints, including the timing of any such constraints, their impact on the domestic industry's capacity and production of SAP, and the particular grade(s) of SAP involved.

Subject imports were the second-largest source of supply to the U.S. market throughout the POI.[84] Subject imports' market share declined from *** percent of apparent U.S. consumption in 2018 to *** percent in 2019, but then increased to *** percent in 2020; their market share was higher in interim 2021, at *** percent, than in interim 2020, at *** percent.[85] *** is the leading U.S. importer of subject imports.[86]

Nonsubject imports were the smallest source of supply to the U.S. market throughout the POI.[87] Nonsubject imports' market share increased from *** percent in 2018 to *** percent in 2019, but then declined to *** percent in 2020; their market share was higher in interim 2021, at *** percent, than in interim 2020, at *** percent.[88] The largest source of nonsubject imports during the POI was Japan.[89]

3. Substitutability and Other Conditions

Based on the current record, we find that there is at least a moderate degree of substitutability between domestically produced SAP and subject imports from South Korea, potentially with higher substitutability among qualified suppliers making products to the same

---

(…Continued)
U.S. producers continued operations and ***. *Id*. at II-6. In questionnaire responses, ***. *Id.* at II-6-7. One producer, ***. *Id*. at II-7.

[81] CR/PR at II-6-7. ***. *Id*. ***. *Id*. ***. *Id*. In addition, ***. *Id*. ***. *Id*. ***. *Id*. ***. *Id*. ***. *Id*.

[82] CR/PR at II-6. ***. ***. *Id*.

[83] CR/PR at II-7. Two large purchasers reported experiencing supply constraints with respect to domestically produced SAP. Specifically, ***. *Id*. The other purchaser, ***. *Id*.

[84] CR/PR at Tables IV-8 and C-1.

[85] CR/PR at Tables IV-8 and C-1.

[86] CR/PR at I-3, Table IV-1.

[87] CR/PR at Tables IV-8 and C-1.

[88] CR/PR at Tables IV-8 and C-1.

[89] CR/PR at IV-7 and Table IV-6.

specifications.[90] All three responding domestic producers reported that the domestic like product and subject imports were always or frequently interchangeable, while the responses of importers were mixed.[91] Two of four responding importers reported that the domestic like product and subject imports were always interchangeable, while the other two responding importers reported that the domestic like product and subject imports were only sometimes or never interchangeable.[92] Manufacturers produce SAP by grade or specification and a large portion of the market consists of SAP products that are custom-made to a purchaser's specifications and ***.[93] As explained below, purchasers require SAP suppliers to go through an extensive qualification process and only accept SAP from qualified suppliers. The record indicates, however, that once a supplier is qualified to provide a particular SAP product for any given use, that product may be interchangeable among qualified suppliers regardless of source.[94] [95]

[90] CR/PR at II-9 & Table II-5. The degree of substitution between domestic and imported SAP depends upon the extent of product differentiation between the domestic and imported products and reflects how easily purchasers can switch from domestically produced SAP to the SAP imported from South Korea (or vice versa) when prices change. CR/PR at II-9 n.21. Factors contributing to this level of substitutability include the qualification of both subject import suppliers and domestic producers to produce to similar individual customer specifications, little preference for particular countries of origin, and similarities between domestically produced SAP and subject imports when produced to the similar specifications. Factors reducing substitutability include customer-specific grades and the associated lengthy qualification processes for those grades, the prevalence of long-term contracts that specify price and volume targets, reported constraints by customers in switching their end-product production lines between suppliers even when qualified for the same grade, some limited availability in 2021 due to U.S. producer supply constraints, and significant factors other than price that firms consider. *Id*. at II-9.

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

[92] CR/PR at II-12, Table II-5.

[93] CR/PR at II-9-12.

[94] Conf. Tr. at 78 (Cauble); Petitioner's Postconf. Br., Exh. 1, Answers to Staff Questions at 8. Respondent KCC states that it was able to increase supply from its other pre-qualified suppliers (***) when *** experienced production disruptions related to the severe weather events in 2021. KCC Postconf. Br. at 4-5. Respondent LG argues, however, that custom-made SAP products are not fully interchangeable since they are produced to proprietary specifications, and asserts there are limitations on substitutability even among qualified suppliers when specific SAP are used on different production lines for downstream products (*e.g.*, infant diapers). *See* CR/PR at II-12; LG Postconf. Br. at 10-11 (stating that "{e}ven switching between different qualified producers of a particular SAP type may require the customer to incur production delays as it recalibrates production equipment for that SAP supply. Indeed, ***"). In any final phase of this investigation, we intend to further investigate the degree to which subject imports and domestically produced SAP are substitutable, including whether substitutability should be considered at the time contracts are negotiated.

[95] LG and P&G state that SAP-8 is the latest generation of SAP product and a highly specialized form of SAP with superior performance characteristics that ***. CR/PR at II-11-12. They contend that other grades of SAP cannot be substituted for proprietary grades of SAP such as SAP-8. *Id*. P&G purchased other SAP products earlier in the POI before increasing its requirements for SAP-8 beginning (Continued…)

The limited record in the preliminary phase of this investigation indicates that price is one of several important factors in purchasing decisions for SAP. Purchasers responding to the lost sales and lost revenue survey cited price among the major factors in purchasing decisions, although they also cited non-price factors including quality, performance, and reliability of supply.[96] In comparing domestically produced SAP and subject imports, all three responding U.S. producers reported that differences other than price were only sometimes or never significant in purchasing decisions.[97] However, the responses of importers on this issue were mixed. Two of four responding importers reported that differences other than price were sometimes or never significant in purchasing decisions, while the other two responding importers reported that differences other than price were always significant.[98]

During the POI, the domestic like product was sold overwhelmingly to hygiene end users, but were also sold in small quantities to non-hygiene end users and distributors.[99] Subject imports also were sold overwhelmingly to hygiene end users throughout the POI with the remainder sold to non-hygiene end users.[100] The purchasing power in the U.S. market for SAP is heavily concentrated with two large purchasers of SAP products, ***.[101]

Purchasers require suppliers for all specifications of SAP to become qualified to sell to their firms.[102] Although the qualification process varies by customer, the current record indicates that customers require suppliers to undergo a "spec-in" process in order to become

---

(…Continued)
in 2019; P&G reports that all of its domestically produced diapers were made using SAP-8 by the end of the POI. *Id.*; Conf. Tr. at 128 (Gordon). According to the respondents, while P&G purchased SAP-8 from two domestic producers (***) and from LG, the domestic industry could not supply sufficient quantities of SAP-8 to meet customer needs in the U.S. market and this also limits substitutability between the domestic like product and subject imports. *See, e.g.*, CR/PR at II-13; LG Postconf. Br at 21-23; Conf. Tr. at 191-192 (Wilson); P&G Answers to Staff Questions, Exh. 1 (Issue: Interchangeability & Issue: Lack of Domestic Capacity). Petitioner argues that ***. As discussed below, we intend to further examine this issue in any final phase of this investigation, including the degree to which, if any, there are limitations on competition between the domestic like product and subject imports.

[96] CR/PR at II-10.

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

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

[99] CR/PR at Table II-1. During the POI, the domestic industry's U.S. shipments to hygiene end users ranged from *** percent to *** percent of total shipments, with the remainder sold to non-hygiene end users (*** percent to *** percent of total shipments) and distributors (*** percent to *** percent of total shipments). *Id*.

[100] During the POI, U.S. importers' shipments to hygiene end users ranged from *** percent to *** percent of their total U.S. shipments, with the remainder sold to non-hygiene end users (*** percent to *** percent of importers' U.S. shipments). CR/PR at Table II-1.

[101] CR/PR at I-3 and II-1. P&G and KCC account for approximately *** of U.S. demand for SAP. CR/PR at II-1 n.7.

[102] CR/PR at II-10-11.

qualified for a particular SAP product, which includes research and development and multiple rounds of testing in order to determine whether the particular supplier's SAP product meets the customer's specifications for performance characteristics (*e.g.*, absorption speed under pressure), quality standards, and product safety.[103] Information available also indicates that the length of the qualification process varies among SAP purchasers; qualifying existing suppliers for a new SAP product can take up to 24 months and qualifying new suppliers can take more than 24 months.[104]

During the POI, U.S. producers primarily sold SAP using long-term contracts, with lesser but substantial quantities sold under annual contracts, and very small quantities using short-term contracts and spot sales.[105] Importers sold subject merchandise overwhelmingly through long-term contracts and smaller quantities sold through spot sales.[106] *** U.S. producers reported that their contracts fix both price and quantity terms for SAP, and all three U.S. producers reported that prices are indexed to raw material prices.[107] U.S. producers' prices for SAP are typically based on a formula, which includes a negotiated base price component and raw material pass-through mechanism that is adjusted monthly and indexed to published prices for propylene and caustic soda in North America.[108] The raw material prices used in the formula may reflect published raw material prices from a month or two prior to incorporation into U.S. producers' pricing formulas for SAP.[109] Subject import prices for SAP are indexed to the prices of propylene and caustic soda in ***.[110]

The major raw materials used to produce SAP are acrylic acid, which is produced from propylene, and sodium hydroxide (also called caustic soda).[111] Propylene and caustic soda prices fluctuated but increased overall during they POI: they declined in 2018 and 2019 and the beginning of 2020 and then increased through the remainder of the POI.[112] Raw materials accounted for *** percent of the domestic industry's total cost of goods sold ("COGS") for SAP in 2018, *** percent in 2019, *** percent in 2020, *** percent in interim 2020, and *** percent in interim 2021.[113]

---

[103] *See, e.g.*, Conf. Tr. at 145-146 (Gordon); LG Postconf. Br. at 10 & Responses to Staff Questions at 2-4; P&G Responses to Staff Questions (Issue: Supplier Qualification); KCC Postconf. Br. at 2-4.

[104] CR/PR at II-10-11.

[105] CR/PR at Table V-3.

[106] CR/PR at Table V-3.

[107] CR/PR at V-5.

[108] CR/PR at V-1.

[109] CR/PR at V-1.

[110] CR/PR at V-1 n.3 & V-5-6.

[111] CR/PR at V-1.

[112] CR/PR at V-2 and Table V-1.

[113] CR/PR at V-1 and Table VI-1. Information available in the current record indicates varying levels of integration among domestic producers with respect to production of primary raw materials for (Continued…)

During the POI, domestically produced SAP was sold primarily from inventory, with lesser quantities produced to order.[114] Subject imports from South Korea were sold *** from inventory.[115]

Effective August 23, 2018, SAP produced in China became subject to an additional 25 percent *ad valorem* duty under Section 301 of the Trade Act of 1974[116] ("section 301 tariffs") as provided for in HTS subheading 9903.88.02.[117] Subject merchandise from South Korea, however, was not subject to section 301 tariffs during the POI.

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."[118]

The volume of subject imports increased overall by *** percent from 2018 to 2020, initially declining from *** MT in 2018 to *** MT in 2019, but then increasing to *** MT in 2020.[119] The volume of subject imports was *** percent higher in January-September 2021 ("interim 2021"), at *** MT, than in January-September 2020 ("interim 2020"), at *** MT.[120] The market share of subject imports increased by *** percentage points overall from 2018 to 2020, declining from *** percent of apparent U.S. consumption in 2018 to *** percent in 2019, but then increasing to *** percent in 2020.[121] The market share of subject imports was *** percentage points higher in interim 2021, at *** percent, than in interim 2020, at *** percent.[122]

In light of the foregoing, we find that the volume of subject imports and the increase in the volume of subject imports were significant in absolute terms and relative to consumption in the United States during the POI.

(…Continued)
SAP. Specifically, ***. CR/PR at VI-15 n.24. ***. *Id*. Evonik purchases acrylic acid through its parent company from Dow Chemical. *Id*.

[114] CR/PR at II-10.

[115] CR/PR at II-10.

[116] 19 U.S.C. § 2411.

[117] CR/PR at I-5.

[118] 19 U.S.C. § 1677(7)(C)(i).

[119] CR/PR at Table IV-3. The volume of U.S. shipments of subject imports increased overall by *** percent from 2018 to 2020, declining from *** MT in 2018 to *** MT in 2019, but then increasing to *** MT in 2020. CR/PR at Tables IV-7 and C-1.

[120] CR/PR at Table IV-3. The volume of U.S. shipments of subject import was *** percent higher in interim 2021, at *** MT, than in interim 2020, at *** MT. CR/PR at Tables IV-7 and C-1.

[121] CR/PR at Tables IV-7 and C-1.

[122] CR/PR at Tables IV-7 and C-1.

D. Price Effects of the Subject Imports

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

> (I) there has been significant price underselling by the imported merchandise as compared with the price of domestic like products of the United States, and
>
> (II) the effect of imports of such merchandise otherwise depresses prices to a significant degree or prevents price increases, which otherwise would have occurred, to a significant degree.[123]

As addressed in section IV.B.4. above, the record indicates that there is at least a moderate degree of substitutability between domestically produced SAP and subject imports with potentially higher substitutability among qualified suppliers making products to the same specifications and that price is an important factor in purchasing decisions.

The Commission collected quarterly pricing data from U.S. producers and importers for three pricing products.[124] Three domestic producers and one importer provided usable pricing data, although not all firms reported pricing for all products for all quarters.[125] Pricing data reported by these firms accounted for 89.7 percent of U.S. producers' U.S. shipments of SAP and *** percent of importers' U.S shipments of subject merchandise from South Korea in 2020.[126]

The pricing data in the preliminary phase of this investigation show mixed instances of underselling and overselling by quarterly comparisons, and majority underselling by subject

---

[123] 19 U.S.C. § 1677(7)(C)(ii).

[124] The three pricing products are as follows:

Product 1.-- Permeable and fast SAP for thin or ultra-thin hygiene products, including the following parameters:

- vortex speed of 45 seconds or less;
- gel bed permeability ("GBP") of 30 or greater; and
- centrifuge retention capacity ("CRC") within a range of 27 to 33 g/g.

Product 2.-- Balanced absorption under pressure ("AAP") SAP for balanced to thin hygiene products, including the following parameters:

- AAP 0.7 psi within a range of 18 to 24 g/g;
- GBP of less than 10; and
- CRC within a range of 34 to 42 g/g.

Product 3.-- Permeable and Pressure-resistant SAP for thin or ultra-thin hygiene products, including the following parameters:

- AAP under 0.7 psi ("AAP") within a range of 20 to 30 g/g; and
- CRC within a range of 26 to 33 g/g.

CR/PR at V-7.

[125] CR/PR at V-8.

[126] CR/PR at V-8.

imports on a volume basis. Prices for subject imports were below those for the domestically produced SAP in *** of *** (or *** percent of) quarterly comparisons, while prices for subject imports were above those for domestically produced SAP in *** of *** (or *** percent of) quarterly comparisons.[127] There were *** MT of subject imports in quarterly comparisons in which subject imports undersold the domestic like product (*** percent of the total) and *** MT of subject imports in quarterly comparisons in which subject imports oversold the domestic like product (*** percent of the total).[128] The margins of underselling ranged from *** to *** percent, and averaged *** percent during the POI, while the margins of overselling ranged from *** to *** percent, and averaged *** percent.[129]

We have also considered purchaser lost sales/lost revenue responses. All three U.S. producers reported that they had lost sales or revenues to subject imports, and identified four firms with which they lost sales to subject imports.[130] Two of four purchasers that responded to the Commission's lost sales/lost revenue survey reported that, since 2018, they had purchased subject imports instead of the domestic like product.[131] Both of these purchasers, which included one of the largest purchasers in the U.S. market, KCC, reported that prices for subject imports were lower than prices for the domestically produced product.[132]

In light of the foregoing, we find, for purposes of this preliminary determination, that subject imports significantly undersold the domestic like product during the POI. As subject imports increased in volume and significantly undersold the domestic like product over the course of the POI, they gained market share at the direct expense of the domestic industry.[133] [134]

---

[127] CR/PR at Table V-9. The record in the preliminary phase of this investigation indicates that there is a wide discrepancy in domestic prices for SAP products, with ***. CR/PR at V-8. Within each pricing product category, U.S. producers' prices per MT differed among the reporting firms in each quarter by $*** to $*** for product 1, $*** to $*** for product 2, and $*** to $*** for product 3. *Id*. In any final phase of this investigation, the parties are invited in their comments on the draft questionnaires to propose pricing product definitions and/or alternative price data that may provide for apples-to-apples price comparisons with less variation among sources. 19 C.F.R. § 207.20(b).

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

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

[130] CR/PR at V-18.

[131] CR/PR at Tables V-10 & V-11.

[132] CR/PR at Table V-11. One of these two purchasers, (***, reported that price was a primary reason for purchasing subject imports and it confirmed a relatively small amount of lost sales totaling *** MT. *Id*. While ***. CR/PR at Table V-11. ***. CR/PR at V-20.

Purchaser ***. CR/PR at V-20. ***. CR/PR at V-8 n.15. As subject imports increased in volume and market share in 2020, ***. Derived from CR/PR at Table V-6. ***. *Id*.

[133] Subject imports' share of apparent U.S. consumption increased from *** percent to *** percent between 2018 and 2020, while nonsubject imports' share decreased from *** percent to *** percent. During this same period, U.S. producers' share of apparent U.S. consumption decreased from (Continued…)

We have also examined available data on price trends. During the POI, domestic prices for SAP generally tracked prices of propylene and caustic soda in the North American market, declining from 2018 until the second or third quarter of 2020, but then increasing for the remainder of 2020 and interim 2021.[135] Overall, the domestic industry's prices were higher in the third quarter of 2021 than in the first quarter of 2018 for each of the three pricing products.[136] Domestic producers' net sales AUVs also declined from 2018 to 2020, and were higher in interim 2021 than in interim 2020.[137] Prices of subject imports from South Korea followed similar fluctuations, but declined overall during the POI for both pricing products for which data were reported.[138] [139]

(…Continued)
*** percent to *** percent. Over the interim periods, the U.S. market share held by subject imports increased from *** percent to *** percent, while the share held by nonsubject imports increased from *** percent to *** percent. Over the interim periods, U.S. producers' share of apparent U.S. consumption fell from *** percent to *** percent. CR/PR at Table C-1.

[134] As discussed below, respondents allege that *** of the increase in subject imports was attributable to P&G's transition to SAP-8, a product which the domestic industry allegedly was unable to supply in sufficient quantities, and domestic producer supply constraints caused by adverse weather events in interim 2021. LG Postconf. Br. at 13-14, 21-22.

[135] CR/PR at Tables V-4-6.

[136] CR/PR at V-15 & Tables V-4-7. During January 2018-September 2021, domestic prices increased by *** percent for Product 1, *** percent for Product 2, and *** percent for Product 3. CR/PR at Tables V-4-7.

[137] CR/PR at Table C-1. From 2018 to 2020, the industry's net sales AUV declined by $400 per MTDW, or by 23.7 percent. CR/PR at Table C-1. From interim 2020 to interim 2021 net sales AUVs increased by $284 per MTDW, or by 21.4 percent. *Id.*

[138] CR/PR at V-15 & Tables V-4-7. For the period for which data were reported for Product 1 (*i.e.*, January 2019-September 2021) and Product 3 (*i.e.*, April 2019-September 2021), prices for subject imports from South Korea declined by *** percent and *** percent, respectively. CR/PR at Tables V-4-7. There were no reported subject import prices for Product 2.

[139] Domestic producers allege that they have reduced U.S. prices in order to compete with low-priced subject imports during the POI. *See* CR/PR at V-18-19. Of the four purchasers responding to the lost sales/lost revenue survey, one (***) reported that U.S. producers had not reduced prices in order to compete with lower-priced imports from Korea, and three reported that they did not know. CR/PR at V-21. Purchaser *** CR/PR at V-22. We recognize that there is evidence in the current record, including conference testimony and affidavits submitted on behalf of Petitioner by company executives for all three domestic producers, indicating that domestic producers and purchasers of SAP are sometimes willing to renegotiate SAP pricing even within an existing contract with fixed price terms and that domestic producers were forced to reduce prices for certain purchasers due to low-priced subject imports. *See, e.g.*, Petitioner's Postconf. Br. at 24-25 & Exh. 1, Answers to Staff Questions at 11; Petition at Exhibits I-10 & I-14; Conf. Tr. at 23-26 (Cauble). In any final phase of this investigation, we intend to further examine whether and to what extent subject imports have impacted U.S. prices during the POI, particularly the base component of SAP prices in sales contracts negotiated between producers and purchasers, and encourage the parties to provide the Commission with supporting documentation (Continued…)

We have also considered whether subject imports have prevented price increases for domestically produced SAP which otherwise would have occurred to a significant degree. The record shows that the domestic industry's ratio of COGS to net sales increased overall by 1.2 percentage points from 2018 to 2020, declining from 88.4 percent in 2018 to 86.0 percent in 2019, but then increasing to 89.6 percent in 2020.[140] The industry's ratio of COGS to net sales was 12.4 percentage points higher in interim 2021, at 103.0 percent, than in interim 2020, at 90.6 percent, driven by increased raw material costs.[141] As previously noted, the domestic industry sells SAP predominantly through long-term and annual contracts and all three U.S. producers reported that their contract prices are indexed to raw material prices for ***, which increased in interim 2021.[142]

Based on the foregoing, we find that the record in the preliminary phase of this investigation contains conflicting evidence regarding the price effects of subject imports. The record shows there was a significant volume of subject imports that significantly undersold the domestic like product during the POI, there was also a sharp increase in the domestic industry's ratio of COGS to net sales to over 100 percent in interim 2021, and subject imports gained market share at the domestic industry's expense. However, domestic SAP prices for all three pricing products tracked raw material prices, fluctuating but increasing overall during the POI. Moreover, it is unclear based on the current record that the domestic industry could have shipped more product desired by purchasers in the latter part of the POI or that it would have been able to further raise its prices, given the domestic industry's use of long-term contracts and price formulas, which included raw material price components that adjust based on changes in published prices of propylene and caustic soda. Given this evidence, as well as the fact that the domestic like product and subject imports are at least moderately substitutable, the importance of price in purchasing decisions, and the significant volume of subject imports in

---

(…Continued)
concerning this issue, including communications with purchasers or other contemporaneous documentation. *See, e.g.*, Petitioner's Postconf. Br. at 31; P&G Answers to Staff Questions, Exh. 1 (Issue: Price). The parties also are encouraged to provide data or any additional pertinent information for assessing whether there was price depression or price suppression more broadly, including information explaining declines in domestic producer prices and net sales AUVs, the domestic industry's ability to raise prices for SAP in light of contract terms, and the domestic industry's ability to cover increasing raw material costs given the prevalence of pricing set by contracts indexed to raw material costs, and the effects of subject imports thereupon.

[140] CR/PR at Tables VI-1 and C-1.

[141] CR/PR at Tables VI-1 and C-1. Raw material costs as a ratio to net sales value decreased from 71.1 percent in 2018 to 65.8 percent in 2020; it was 66.4 percent in interim 2020 and 80.4 percent in 2021. CR/PR at Table VI-1.

[142] CR/PR at V-1-2, V-5-6. According to P&G, ***. P&G Answers to Staff Questions, Exh. 1 (Issue: Price).

the market, we cannot conclude, for the preliminary phase of this investigation, that the subject imports did not have significant effects on prices for the domestic product.[143]

E. Impact of the Subject Imports[144]

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 ("R&D"), and factors affecting domestic prices. No single factor is dispositive and all relevant factors are considered "within the context of the business cycle and conditions of competition that are distinctive to the affected industry."[145]

Although apparent U.S. consumption increased overall by *** percent from 2018 to 2020,[146] the domestic industry's production and U.S. shipments declined overall by 2.6 percent and 5.7 percent, respectively, between 2018 and 2020.[147] While apparent U.S. consumption was relatively stable across the interim periods,[148] the domestic industry's production and U.S. shipments were lower in interim 2021 than in interim 2020, by 4.5 percent

[143] Commissioner Karpel joins with the Commission and finds, for purposes of the preliminary phase of this investigation, that there was significant underselling by subject imports during the POI. She notes that this occurred as subject imports gained *** percentage points of market share from domestic producers from 2018 to 2020 and another *** percentage points from interim 2020 to 2021. Based on this significant underselling in concert with the gain in U.S. market share by subject imports, the at least moderate degree of substitutability of domestic product and subject imports, the importance of price in purchasing factors, and the significant volume of subject imports in the market, Commissioner Karpel joins with the Commission, and cannot conclude that that the subject imports were not having price effects on the domestic product.

[144] Commerce initiated an antidumping duty investigation for subject imports from South Korea based on estimated dumping margins ranging from 27.20 percent to 48.20 percent. *Certain Superabsorbent Polymers from the Republic of Korea: Initiation of Less-Than-Fair-Value Investigation*, 86 Fed. Reg. 67915, 67917 (Nov. 30, 2021).

[145] 19 U.S.C. § 1677(7)(C)(iii). This provision was amended by the Trade Preferences Extension Act ("TPEA") of 2015, Pub. L. 114-27.

[146] Apparent U.S. consumption declined from *** MT in 2018 to *** MT in 2019, but then increased to *** MT in 2020. CR/PR at Tables IV-7 and C-1.

[147] Domestic producers' production declined from 424,199 MT in 2018 to 409,807 MT in 2019, but then increased to 413,217 MT in 2020. Domestic producers' U.S. shipments declined from 362,908 MT in 2018 to 357,912 MT in 2019 and 342,363 MT in 2020. CR/PR at Tables III-4 and C-1.

[148] Apparent U.S. consumption of SAP was *** percent higher in interim 2021, at *** metric tons, than in interim 2020, at *** metric tons. CR/PR at Table C-1.

and 2.3 percent, respectively.[149] Capacity utilization declined by 2.3 percentage points from 2018 to 2020 and was 4.0 percentage points lower in interim 2021 than in interim 2020.[150] The domestic industry's production capacity was almost unchanged overall from 2018 to 2020, and was virtually the same in interim 2020 and interim 2021.[151] End-of-period inventories declined by 7.1 percent from 2018 to 2020,[152] and were 32.5 percent lower in interim 2021 than in interim 2020.[153] The domestic industry's market share increased from *** percent of apparent U.S. consumption in 2018 to *** percent in 2019, but then declined to *** percent in 2020, for an overall decline of *** percentage points from 2018 to 2020; its market share was *** percentage points lower in interim 2021, at *** percent, than in interim 2020, at *** percent.[154] By contrast, subject imports' market share increased overall by *** percentage points from 2018 to 2020, declining from *** percent in 2018 to *** percent in 2019, but then increasing to *** percent in 2020; subject imports' market share was *** percentage points higher in interim 2021, at *** percent, than in interim 2020, at *** percent.[155]

The domestic industry's employment indicia were mixed. Although most of the domestic industry's employment indicia declined overall from 2018 to 2020, they were almost all higher in in interim 2021 than in interim 2020. Production and related workers ("PRWs"), hours worked, and wages paid declined overall from 2018 to 2020.[156] However, hourly wages and productivity increased overall from 2018 to 2020.[157] PRWs, hours worked, wages paid, and

[149] Domestic producers' production was 320,015 MT in interim 2020 and 305,659 MT in interim 2021. Domestic producers' U.S. shipments were 259,370 MT in interim 2020 and 253,277 MT in interim 2021. CR/PR at Table III-4 and C-1.

[150] Domestic producers' capacity utilization declined from 89.1 percent in 2018 to 87.3 percent in 2019 and 86.8 percent in 2020. Domestic producers' capacity utilization was 89.4 percent in interim 2020 and 85.5 percent in interim 2021. CR/PR at Tables III-4 and C-1.

[151] Capacity declined from 476,000 MT in 2018 to 469,000 MT in 2019, but then increased to 476,200 MT in 2020. Capacity was 357,800 MT in interim 2020 and 357,600 MT in interim 2021. CR/PR at Tables III-4 and C-1.

[152] End-of-period inventories declined from 37,257 MT in 2018 to 34,192 MT in 2019, but then increased to 34,610 MT in 2020. CR/PR at Tables III-6 and C-1.

[153] End-of-period inventories were 47,036 MT in interim 2020 and 31,740 MT in interim 2021. CR/PR at Tables III-6 and C-1.

[154] CR/PR at Tables IV-7 and C-1.

[155] CR/PR at Tables IV-7 and C-1.

[156] PRWs declined by 2.6 percent from 2018 to 2020, declining from 378 in 2018 to 376 in 2019 and 368 in 2020. Total hours worked declined by 7.2 percent from 2018 to 2020, declining from 856,000 hours in 2018 to 850,000 hours in 2019 and 794,000 hours in 2020. Wages paid declined by 2.3 percent from 2018 to 2020, increasing from $41.5 million in 2018 to $42.5 million in 2019, but then declining to $40.6 million in 2020. CR/PR at Table C-1.

[157] Hourly wages increased from $48.53 per hour in 2018 to $49.97 per hour in 2019 and $51.11 per hour in 2020. Productivity declined from 495.6 metric ton dry weight ("MTDW") per 1,000 hours in (Continued…)

hourly wages were all higher in interim 2021 than in interim 2020 while productivity was lower in interim 2021 than in interim 2020.[158]

Virtually all of the domestic industry's financial performance indicia declined over the course of the POI. The industry's gross profit declined by 33.1 percent from 2018 to 2020, and was 139.3 percent lower in interim 2021 than in interim 2020.[159] From 2018 to 2020, operating income and net income declined by 163.1 percent and *** percent, respectively, as the domestic industry had operating and net income losses in 2020; operating and net income deteriorated further in the interim periods as the domestic industry had larger operating and net income losses in interim 2021 than in interim 2020.[160] Operating income as a share of net sales fell by 2.6 percentage points from 2018 to 2020, from 1.4 percent in 2018 and 3.4 percent in 2019 to negative 1.2 percent in 2020, and was 10.3 percentage points lower in interim 2021 than in interim 2020.[161] Further, net income as a share of net sales declined by *** percentage points from 2018 to 2020, and was *** percentage points lower in interim 2021 than in interim 2020.[162] The domestic industry's net sales (by value) declined by *** percent from 2018 to 2020, but were *** percent higher in interim 2021 than in interim 2020.[163]

The domestic industry's research and development expenses declined overall by *** percent from 2018 to 2020, and were *** percent lower in interim 2021 than in interim

---

(…Continued)
2018 to 482.1 MTDW per 1,000 hours in 2019, but then increased to 520.4 MTDW per 1,000 hours in 2020. CR/PR at Table C-1.

[158] PRWs were 1.1 percent higher in interim 2021, at 373, than in interim 2020, at 369. Hours worked were 4.7 percent higher in interim 2021, at 625,000 hours, than in interim 2020, at 597,000 hours. Wages paid were 7.4 percent higher in interim 2021, at $32.4 million, than in interim 2020, at $30.1 million. Hourly wages were 2.6 higher in interim 2021, at $51.79 per hour, than in interim 2020, at $50.48 per hour. Productivity was 8.8 percent lower in interim 2021, at 489.1 MTDW per 1,000 hours, than in interim 2020, at 536.0 per 1,000 hours. CR/PR at Table C-1.

[159] The domestic industry's gross profit increased from $84.8 million in 2018 to $92.4 million in 2019, but then declined to $56.7 million in 2020. Its gross profit was $38.1 million in interim 2020 and its gross loss was $15.0 million in interim 2021. CR/PR at Table C-1.

[160] The domestic industry's operating income was $10.4 million in 2018, $22.5 million in 2019, and its operating losses were $6.6 million in 2020. Its operating losses were $7.0 million in interim 2020 and $60.1 million in interim 2021. CR/PR at Table C-1.

The domestic industry's net income was $*** in 2018, $*** in 2019, and its net losses were $*** in 2020. Its net losses were $*** in interim 2020 and $*** in interim 2021. CR/PR at Table C-1.

[161] As a ratio to net sales, the domestic industry's operating income was negative 1.7 percent in interim 2020, and negative 12.0 percent in interim 2021. CR/PR at Table C-1.

[162] As a ratio to net sales, the domestic industry's net income was *** percent in 2018, *** percent in 2019, *** percent in 2020, negative *** percent in interim 2020, and *** percent in interim 2021. CR/PR at Table C-1.

[163] By value, the domestic industry's net sales declined from $733.3 million in 2018 to $660.5 million in 2019 and $544.1 million in 2020. Its net sales (by value) were higher in interim 2021, at $500.1 million, than in interim 2020, at $406.2 million. CR/PR at Table C-1.

2020.[164] The domestic industry's capital expenditures fluctuated, but increased overall by *** percent from 2018 to 2020; they were *** percent lower in interim 2021 than in interim 2020.[165] All three domestic producers reported negative effects on investment and on growth and development due to subject imports.[166]

The record in the preliminary phase of this investigation shows that subject imports significantly increased in volume and significantly undersold the domestic like product over the course of the POI, gaining *** percentage points of market share directly at the expense of the domestic industry from 2018 to 2020.[167] Respondents argue, however, that the increase in subject import volume and market share is due to non-price factors, particularly the lack of sufficient domestic capacity to produce P&G's required volume of SAP-8, an increase in demand for SAP in 2020 stemming from the COVID-19 pandemic, and supply constraints in the domestic industry due to adverse weather events in interim 2021.[168] However, domestic producer ***.[169]

The record also shows that the domestic industry's prices declined during much of the POI, though increased overall, and the industry's ratio of COGS to net sales increased, particularly later in the POI. Domestic producers allege that purchasers used low-priced subject imports during the POI as leverage to drive down U.S. producers' prices, while respondents argue that changes in U.S. prices are attributable to SAP pricing formulas indexed to published raw material prices.[170] While the domestic industry's COGS to net sales ratio increased over the POI due to rising raw material costs and increased sharply in interim 2021 when it exceeded 100 percent,[171] we cannot discern based on the current record whether the domestic industry could have recouped these higher raw material costs by further raising prices, particularly given U.S. producers' predominant use of long-term and annual contracts with pricing formulas that

[164] The domestic industry's research and development expenses declined from $*** in 2018 to $*** in 2019 and 2020; they were $*** in interim 2020 and $*** in interim 2021. CR/PR at Table C-1.

[165] The domestic industry's capital expenditures increased from $*** in 2018 to $*** in 2019, but then declined to $*** in 2020; they were $*** in interim 2020 and $*** in interim 2021. CR/PR at Table C-1.

[166] CR/PR at Tables VI-12-13.

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

[168] LG Postconf. Br. at 5-6, 13-23; P&G Answers to Staff Questions, Exh. 1 (Issue: Lack of Domestic Capacity); Conf. Tr. at 13 (Fischer-Fox) & 192 (Wilson). Respondents argue that competition between subject imports and the domestic like product is attenuated as only two of three U.S. producers (***) were qualified to sell SAP-8 to P&G, and those producers were unable to satisfy P&G's supply needs in both 2020 and interim 2021. LG Postconf. Br. at 17-23; P&G Answers to Staff Questions, Exh. 1 (Issue: Lack of Domestic Capacity). Respondents also note that ***. LG Postconf. Br. at 26 (citing ***).

[169] ***. CR/PR at V-19 n.18.

[170] Conf. Tr. at 27 (Clark); LG Postconf. Br. at 33-34.

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

were indexed to raw material prices for propylene and caustic soda. We intend to further examine these issues in any final phase of this investigation.

In light of this evidence, we cannot conclude based on the record of the preliminary phase of this investigation that subject imports did not have a significant impact on the domestic industry and that there is no material injury by reason of the subject imports.[172]

We have also considered the role of other factors in our assessment of injury to the domestic industry by reason of subject imports. As noted above, apparent U.S. consumption increased during the POI, so any impact on the domestic industry's condition cannot be explained by declines in demand.[173] In addition, nonsubject imports were the smallest source of supply to the U.S. market throughout the period of investigation. As discussed above, nonsubject imports' share of apparent U.S. consumption ranged from *** percent to *** percent during the period of investigation.[174] Thus, the substantially smaller volume of nonsubject imports cannot fully explain the domestic industry's loss of market share, its inability to raise its prices by a sufficient amount to recoup its higher raw material costs from its customers, or the magnitude of the declines in the domestic industry's financial performance.

Respondents also argue that the declines in the domestic industry's performance during the POI were due to factors other than subject import competition, including adverse weather events that disrupted the domestic industry's production and caused shortages and price hikes for its raw materials, the lack of sufficient domestic production capacity to meet demand for SAP-8, the domestic industry's use of hedging in purchasing raw materials for SAP and the use of a pricing formula that is indexed to propylene ***, and the domestic industry's inability to respond to raw material price movements and recoup higher production costs due to their pricing and other contract terms.[175] In any final phase of the investigation, we intend to further explore these issues raised by respondents.

---

[172] Commissioner Karpel joins with the Commission and finds, for purposes of the preliminary phase of this investigation, that she cannot conclude that subject imports did not contribute to the domestic industry's declining financial performance during the POI. In particular, subject imports, which are at least moderately substitutable with the domestic like product, increased in volume and significantly undersold the domestic like product over the course of the POI, while gaining *** percentage points of market share directly at the expense of the domestic industry from 2018 to 2020. This occurred as many of the domestic industry's output, employment and financial indicators declined over that period. Commissioner Karpel further notes that all three responding domestic producers reported that subject imports had negative effects on their investment and growth and development during POI. On these bases, Commissioner Karpel joins with the Commission, and cannot conclude based upon the record of the preliminary phase of this investigation that the subject imports did not have a significant impact on the domestic industry.

[173] CR/PR at Tables IV-7 & C-1.

[174] CR/PR at Tables IV-7 & C-1.

[175] *See, e.g.*, LG Postconf. Br. at 15-17, 32-36; P&G Answers to Staff Questions, Exh. 1 (Issues: Price; Lack of Domestic Capacity); Conf. Tr. at 180-181 (Fischer-Fox).

For the foregoing reasons, we find a reasonable indication of material injury to the domestic industry by reason of subject imports.

VI. 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 SAP from South Korea that are allegedly sold in the United States at less than fair value.

Part I: Introduction

Background

This investigation results from a petition filed with the U.S. Department of Commerce ("Commerce") and the U.S. International Trade Commission ("USITC" or "Commission") by the Ad Hoc Coalition of American SAP Producers, whose members include BASF Corporation ("BASF"), Florham Park, New Jersey; Evonik Superabsorber LLC ("Evonik"), Greensboro, North Carolina; and Nippon Shokubai America Industries, Inc. ("NSAI"), Pasadena, Texas, on November 2, 2021, alleging that an industry in the United States is materially injured and threatened with material injury by reason of less-than-fair-value ("LTFV") imports of superabsorbent polymers ("SAP")[1] from South Korea. Table I-1 presents information relating to the background of this investigation.[2] [3]

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

Effective date	Action
November 2, 2021	Petition filed with Commerce and the Commission; institution of Commission investigations (86 FR 62565, November 10, 2021)
November 23, 2021	Commission's conference
November 30, 2021	Commerce's notice of initiation (86 FR 67915, November 30, 2021)
December 15, 2021	Commission's vote
December 17, 2021	Commission's determination
December 27, 2021	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*

[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 that appeared at the conference is presented in appendix B of this report.

merchandise on domestic producers of domestic like products, but only in the context of production operations within the United States; and. . . may consider such other economic factors as are relevant to the determination regarding whether there is material injury by reason of imports.

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

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

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 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

SAP is mainly used for hygiene applications, such as diapers, adult diapers, and feminine hygiene products. The leading U.S. producers of SAP are BASF,[6] Evonik, and NSAI,[7] while leading producers of SAP outside the United States include LG Chem of South Korea and Sumitomo. The leading U.S. importer of SAP from South Korea is ***. Leading importers of SAP from nonsubject countries (primarily Japan and Germany) include ***. U.S. purchasers of SAP are firms that produce hygiene products; leading purchasers include Kimberly Clark Corporation ("KCC") and Procter and Gamble ("P&G").

Apparent U.S. consumption of SAP totaled approximately *** metric tons ("MT") (***) in 2020. Currently, three firms are known to produce SAP in the United States. U.S. producers' U.S. shipments of SAP totaled *** (***) in 2020 and accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value. U.S. importers' U.S. shipments from subject sources totaled *** (***) in 2020 and accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value. U.S. importers' U.S. shipments from nonsubject sources totaled *** ***) in 2020 and accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value.

[6] ***. *** U.S. producer questionnaire response, section I-7.
[7] ***. *** U.S. producer questionnaire response, section I-7.

Summary data and data sources

A summary of data collected in this investigation is presented in appendix C, table C-1. Except as noted, U.S. industry data are based on questionnaire responses of three firms that accounted for all of U.S. production of SAP during 2020. U.S. imports are based on the questionnaire responses of seven firms that accounted for *** of subject SAP imports during 2020, and approximately *** of total imports falling under HTS statistical reporting number 3906.90.5000. Foreign producer/export data are based on the questionnaire response of one firm, LG Chem. LG Chem indicated that it believes that it constituted *** percent of all SAP production in South Korea during 2020 and *** percent of exports from South Korea to the United States.

Previous and related investigations

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

Nature and extent of alleged sales at LTFV

On November 30, 2021 Commerce published a notice in the Federal Register of the initiation of its antidumping duty investigation on SAP from South Korea.8 Commerce has initiated antidumping duty investigations based on estimated dumping margins for SAP from South Korea of 27.20 percent to 48.20 percent.

The subject merchandise

Commerce's scope

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

> *The merchandise covered by this investigation is superabsorbent polymers (SAP), which is cross-linked sodium polyacrylate most commonly conforming to Chemical Abstracts Service (CAS) registry number 9003–04–7, where at least 90 percent of the dry matter, by weight on a nominal basis, corrected for moisture content, is comprised of a polymer with a chemical formula of* $(C_3H_3O_2Na_xH_{1-x})_n$*, where x is within a range of 0.00–1.00 and there is no limit to n. The subject merchandise also includes merchandise with a chemical formula of* $\{(C_2H_3)COONa_yH_{(1-y)}\}_n$*, where y is*

[8] 86 FR 67915, November 30, 2021.

within a range of 0.00–1.00 and there is no limit to n. The subject merchandise includes SAP which is fully neutralized as well as SAP that is not fully neutralized. The subject merchandise may also conform to CAS numbers 25549–84–2, 77751–27–0, 9065–11–6, 9033–79–8, 164715–58–6, 445299–36–5, 912842–45–6, 561012–86–0, 561012–85–9, or 9003–01–4. All forms and sizes of SAP, regardless of packaging type, including but not limited to granules, pellets, powder, fibers, flakes, liquid, or gel are within the scope of this investigation. The scope also includes SAP whether or not it incorporates additives for anticaking, anti-odor, anti-yellowing, or similar functions. The scope also includes SAP that is combined, commingled, or mixed with other products after final sieving. For such combined products, only the SAP component is covered by the scope of this investigation. SAP that has been combined with other products is included within the scope, regardless of whether the combining occurs in third countries. A combination is excluded from this investigation if the total SAP component of the combination (regardless of the source or sources) comprises less than 50 percent of the combination, on a nominal dry weight basis. SAP is classified under the Harmonized Tariff Schedule of the United States (HTSUS) subheading 3906.90.5000. SAP may also enter the United States under HTSUS 3906.90.9000[9] or 3906.10.0000. Although the HTSUS subheadings and CAS registry numbers are provided for convenience and customs purposes, the written description of the merchandise is dispositive.[10]

Tariff treatment

SAP is provided for in HTS subheading 3906.90.50, a residual or "basket" category for a range of non-elastomeric acrylic polymers in primary forms. SAP may also be imported into the United States under subheading 3906.10.00, which provides by name for poly (methyl methacrylate). SAP imported from South Korea under these two subheadings has a column 1-general duty rate of 4.2 percent and 6.3 percent ad valorem, respectively.[11]

Eligible goods of South Korea, under the U.S.-Korea Free Trade Agreement, can be imported free of duty upon proper importer claim. Decisions on the tariff classification and treatment of imported goods are within the authority of U.S. Customs and Border Protection.

[9] HTSUS 3906.90.9000 is not a current or past valid HTSUS classification number.

[10] 86 FR 67915, November 30, 2021.

[11] *Harmonized Tariff Schedule of the United States (2021)*, Revision 9, USITC publication 5249, November 2021, Chapter 39, p. 39-9.

Effective August 23, 2018, SAP produced in China is subject to an additional 25 percent ad valorem duty under Section 301 of the Trade Act of 1974, as provided for in heading 9903.88.02.[12]

The product

Description and applications

SAP is a class of polymers that have a high capacity to absorb and retain water and aqueous liquids. These polymers are a fine white substance that is typically produced in granular, powder form. It is the product of a polymerization of acrylic monomer molecules with crosslinkers to form crosslinked polymer networks. SAP is insoluble in water but can absorb and retain from 100 to 1000 times its own weight in water or from 20 to 60 times its own weight in body fluids (such as urine). Upon contact with aqueous liquid, the sodium ions in the material become dissociated, generating an osmotic pressure which drives more liquid into the SAP and binding it tightly within. The liquid is not only absorbed but also retained inside the particles, even under external pressure. The absorption process causes a phase change of the polymer from a dry powder to a soft gel that is still capable of absorbing further liquid.

SAP is mainly used in hygiene applications, such as baby diapers, adult diapers, and feminine hygiene products. The purpose of the SAP in these end-use products is to absorb aqueous fluids of urine or blood. The market has moved toward thinner diapers, and innovations in design and materials have helped achieve that goal.[13] Manufacturers of baby diapers can combine SAP with conventional fluff, which adds to bulkiness, or place it within a

[12] The U.S. Trade Representative has not granted any exclusions for subheading 3906.10.00 from Section 301 duties under 9903.88.02. *Harmonized Tariff Schedule of the United States (2021)*, Revision 9, USITC publication 5249, November 2021, Chapter 99, footnote 20(c), p. 99-III-20; 83 FR 40823, pp. 40823-40838, August 23, 2018. The U.S. Trade Representative granted exclusions for four products under subheading 3906.90.50; however, the exclusions expired in 2020. *Harmonized Tariff Schedule of the United States (2021)*, Revision 9, USITC publication 5249, November 2021, Chapter 99, footnote 20(v), p. 99-III-101; footnote 20(y)(1), p. 99-III-113; footnote 20(lll)(1), p. 99-III-208; 85 FR 59595, September 22, 2020.

[13] Conference transcript, p. 96 (Cauble); LG Chem's postconference brief, Exhibit 19, p. 11.

thinner nonwoven sheet (figure 1).[14] Manufacturer P&G does not use wood pulp fluff and instead uses a new generation of SAP termed SAP-8.[15]

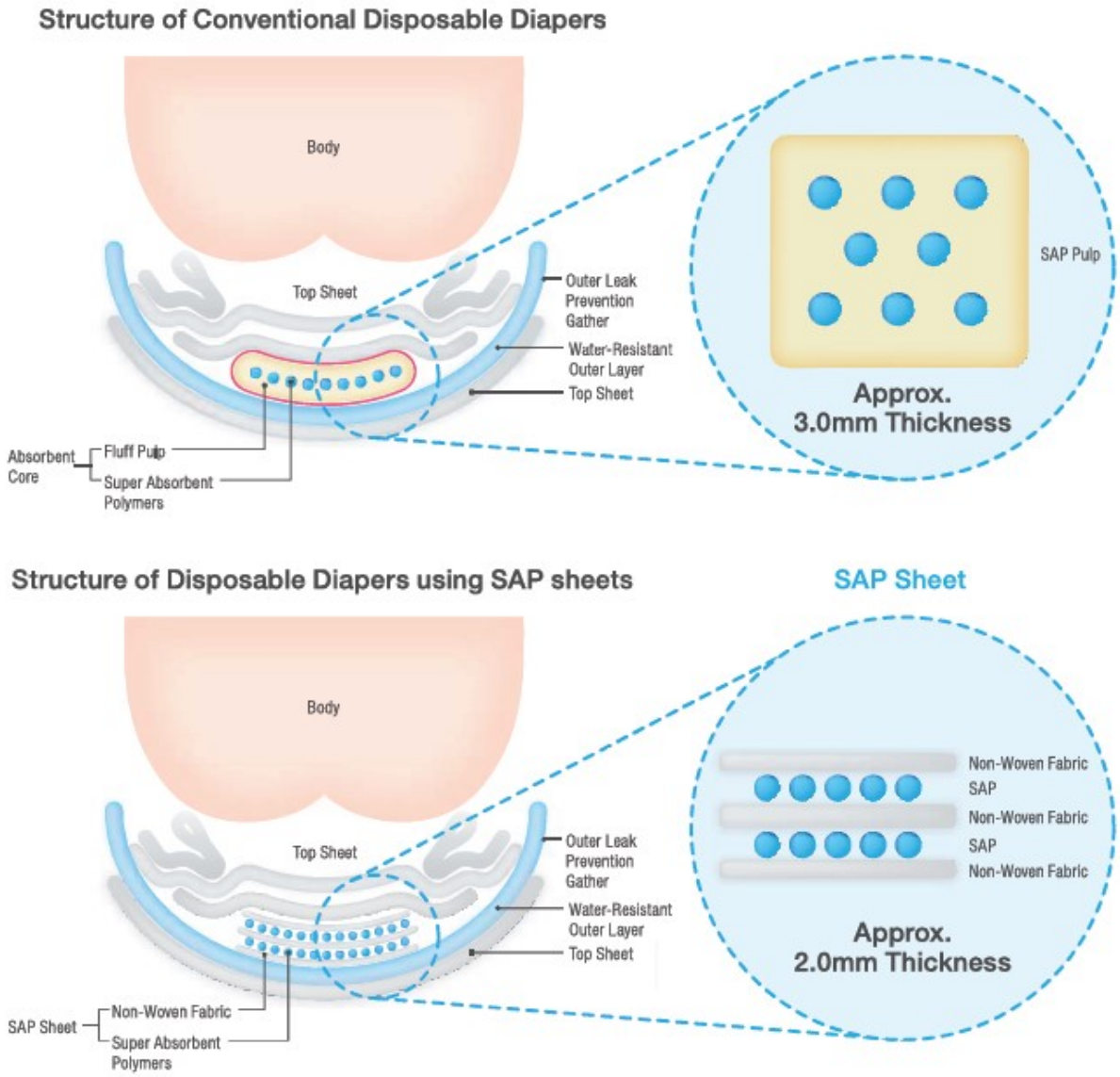
SAP can also be used in food-related areas, such as refrigerant or freshness-keeping agents, and in household products, such as disposable heating packs or environment fragrance. Finally, SAP can be used for water retention in agriculture or civil engineering projects.[16]

[14] Fluff can be made of materials such as wood pulp or cotton. Conference transcript, p. 93 (Clark); p. 96 (Cauble), p. 128 (Gordon); LG Chem's postconference brief, Exhibit 19, p. 11. Before SAP was widely available, the first fully disposable diapers were made of 100 percent fluff core. Later, SAP was mixed into the fluff fibers, compressed into a pad to trap the SAP in place, and this allowed liquid to wick via the fibers to the SAP for absorption and storage as a soft gel. Diapers can contain varying ranges of SAP and fluff. As diapers have transitioned to using more SAP and less fluff in order to become thinner, an Acquisition Distribution Layer ("ADL") was added. This can be a compressed fluff pad or a high-loft nonwoven layer placed above the diaper core to allow faster initial fluid-intake and improved spreading to drier parts of the core. Petitioner's postconference brief, Exhibit 1, Answers to Staff Questions, question #16, p. 6.

[15] P&G adds other material that is not cotton or wood pulp to their SAP-8 used in diapers. Conference transcript, p. 128, 158 (Gordon). SAP-8 was not introduced into the United States until *** 2019, and in 2019 ***. LG Chem's postconference brief, Answers to Staff Questions, question #19, p. 18.

[16] Petition, pp. 3-4.

Figure I-1
SAP: SAP within the larger context of the main end-use product, a diaper



Source: LG Chem's postconference brief, Exhibit 19, 2021 Fact Book, Sumitomo Seika Chemicals, Ltd., p. 11.

The scope lists multiple Chemical Abstracts Service (CAS) Registry numbers indicative of unique chemicals, as shown in table I-2. In general, Evonik, NSAI and BASF have around 10 SAP products each at a given time that are available to customers.[17] When water is added to sodium polyacrylate, as in a wet diaper, the dry powder form of the polymer binds water and changes into a solidified gel, as shown in figure I-2.

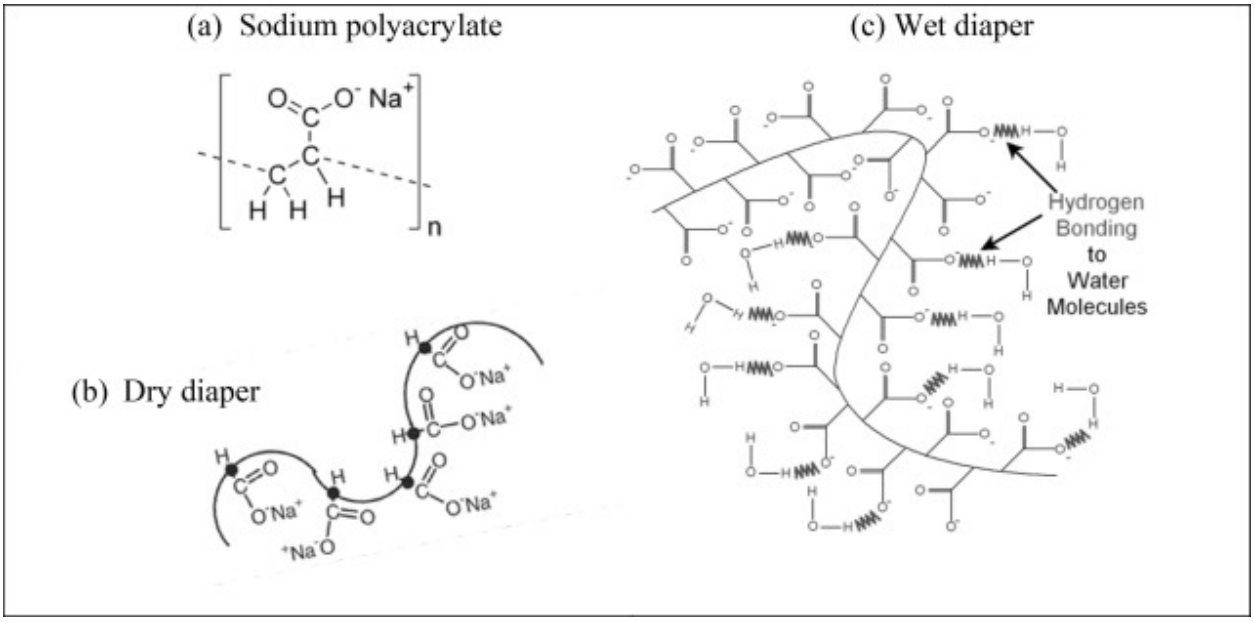
Table I-2
SAP: Identification of chemicals listed in the scope of the investigation

Chemical Abstracts Service (CAS) Registry Number	International Union of Pure and Applied Chemistry (IUPAC) Name	Chemical Name or Synonyms
9003-04-7	Poly(sodium prop-2-enoate)	Sodium polyacrylate
25549-84-2	Poly(sodium prop-2-enoate)	2-Propenoic acid,sodium salt (1:1), homopolymer
9065-11-6	Unknown or not designated	Acrylic polymers
9033-79-8	Poly(sodium prop-2-enoate) 2-Propenoic acid, polymer with sodium 2-propenoate	Poly(Acrylic Acid) Sodium salt Acrylic acid-sodium acrylate copolymer
9003-01-4	2-propenoic acid homopolymer	Polyacrylic acid (homopolymer)
Additional CAS numbers identified in the scope but not enumerated above are for legacy products known with a chemical name of "sodium polyacrylate." This includes 77751-27-0, 164715-58-6, 445299-36-5, 912842-45-6, 561012-86-0, and 561012-85-9.		

Source: Petitioner's postconference brief, Exhibit 15, with acronyms defined

[17] Conference transcript, p. 76 (Cauble, Gu, and Nebel). In 2021, LG Chem produced ***. A list of grades sold to multinational customers and the name of the customer buying each grade are provided in Exhibit 26. Approximately ***. LG Chem's postconference brief, Answers to Staff Questions, question #4, p. 5.

Figure I-2
SAP: SAP changes in a wet diaper



Source: Manan et al. (2021), "Physicochemical properties of absorbent hydrogel polymers in disposable baby diapers," *Chemical Physics Letters*, Vol. 774, 138605, https://doi.org/10.1016/j.cplett.2021.138605.

Note: (a) is the chemical structure of sodium polyacrylate; (b) shows the dry polymer in a cross-linked structure. The negatively charged oxygen atoms are bound to the positively charged sodium atoms; (c) when water is added, the dry polymer becomes hydrogen bonded to water molecules. The entire structure expands and changes into a gel. The result is that the gel keeps the water away from the infant's skin and from leaking outside the diaper.

Manufacturing processes

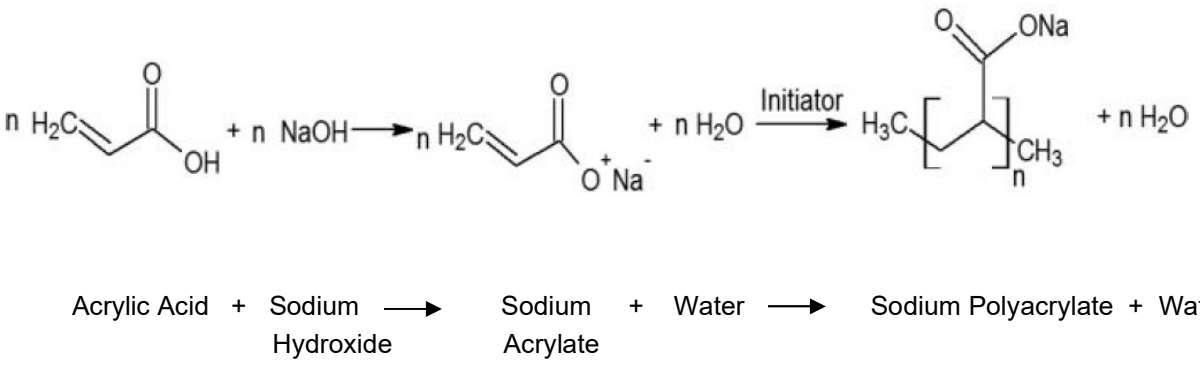
SAP is made by combining (polymerizing) monomer molecules of sodium acrylate to form long molecular chains, as shown in figure I-3. The two primary components of SAP, comprising over *** percent of the product, are acrylic acid and sodium hydroxide (same as caustic soda) with propylene as a precursor to making acrylic acid.[18] Crude acrylic acid is made by the oxidation of propylene and may then be purified to *** by distillation

[18] ***. Email from ***, November 18, 2021. Petitioner stated that ***. Email from ***, November 2, 2021.

or crystallization to produce glacial acrylic acid ("GAA").[19] That product, in turn, is eventually converted to polyacrylic acid in a continuous polymerization process. Chemicals used in the manufacturing process can vary by manufacturer; however, the same functional steps are utilized to achieve polymerization. The input raw materials are shown in (table I-3).

The polymerization is activated by an initiator, and a crosslinker forms the crosslinked polymer networks. The crosslinker ensures that the granules remain insoluble when exposed to liquid, maintaining their absorbent properties and structure. There are no impurities from the reaction, and very little off-spec material results.[20] The production is a highly efficient process targeting almost 100 percent yield.[21]

Figure I-3
SAP: Chemical reaction for the manufacturing process of sodium polyacrylate



Source: Based on Khanlari, Samaneh & Dubé, Marc. (2015). Effect of pH on Poly(acrylic acid) Solution Polymerization. *Journal of Macromolecular Science Part A Pure and Applied Chemistry,* 52.

Note: n is an integer of repeating units.

[19] IHS Markit, *Chemical Economics Handbook: Acrylic Acid and Esters*, December 2020 (Revised), p. 9. According to this publication, GAA production accounts for *** of total acrylic acid production, and approximately *** percent of GAA produced was used in the production of SAP in 2020. See also IHS Markit, *Chemical Economics Handbook: Superabsorbent Polymers*, December 2020, p. 11.

[20] Petitioner's postconference brief, Exhibit 1, Answers to Staff Questions, question #9, p. 4 and question #10, pp. 4-5.

[21] Petitioner's postconference brief, Exhibit 1, Answers to Staff Questions, question #9, p. 4.

Table I-3
SAP: Chemicals utilized during the manufacturing process

Identification	Chemicals
Main raw materials	acrylic acid (derived from propylene) and sodium hydroxide
Initiators	***
Crosslinkers	***
Additives	***
Solvents	***
Catalysts	none

Source: Petitioner's postconference brief, Exhibit 1, p. 2; Catalyst information from conference transcript, p. 106 (Clark); Petitioner's postconference brief, Exhibit 1, Answers to Staff Questions, question #13, p. 5.

The main steps of the SAP production process are generally as follows:

1) **Neutralization**: in most cases, the acrylic acid is partially neutralized with sodium hydroxide (also called caustic soda). Such a partial neutralization during the reaction will maintain the polymer in a dissolved state, which enhances the rate of reaction. Generally, acrylic acid is 60-80 percent neutralized prior to polymerization and further neutralization will be carried out either during or after the completion of the reaction.

2) **Polymerization**: Certain large-scale plants employ the aqueous polymerization process to produce SAP ("belt polymerization"). In this process, GAA, crosslinker, water, a neutralizing agent, and an initiator (such as a UV initiator, a redox initiator, thermally-activated initiators, or a combination) are blended and placed either on a moving belt or in large tubs. Reaction initiators such as *** are added in very dilute concentrations, and crosslinking agents are added in low concentrations.[22] The liquid then goes through a long chamber with a series of strong UV lights (a "reactor"). The UV radiation drives the polymerization and starts the crosslinking reactions. Alternatively, polymerization may occur though inverse suspension polymerization ("ISP"), in which the sodium acrylate solution is polymerized in batch in the presence of an organic liquid.

[22] Described as either a water solution process or a solvent suspension process. IHS Markit, *Chemical Economics Handbook: Superabsorbant Polymers*, December 2020, p. 11. Also see Petitioner's postconference brief, Answers to Staff Questions, #4 (common inputs).

3) **Gel modification and drying**: Since the product resulting from the polymerization step is a viscous gel that is difficult to process and transport, SAP is usually further transformed just after the polymerization step through a chopping or extrusion process to obtain particles. Particles are then transported via conveyors for drying in continuous hot air ovens or rotary vacuum dryers to obtain a powder.

4) **Grinding and sieving and surface crosslinking**: Dried SAP powder is ground and sieved to obtain the desired particle size before surface crosslinking, and low concentrations of cross-linking agents are added.[23] To improve performance characteristics, for example permeability, SAP particles are generally surface crosslinked. Additional cross-linking agent is sprayed on the particles' surface to increase the product's ability to swell under pressure – a property measured as absorbency under load. Another round of heating causes a reaction that yields the final cross-linked product. SAP produced through the ISP process does not always undergo grinding, sieving, and surface crosslinking. Finally, further treatments could be applied to develop the performance profile, such as anti-yellowing treatment and odor control.[24]

At the end of the production process, SAP is supplied in white irregular, round-shaped, or agglomerated powder/granules. SAP is typically packed in large plastic bags for shipment.[25]

Once the product has been manufactured, the finished product will need to meet various standards from the industry. The SAP industry has standards set by the International Organization for Standardization ("ISO") as well as regional standards issued by the European

[23] Low concentrations of cross-linking agents are added to avoid excess cross-linking, which reduces absorption capacity of fluids. One type of cross-linking agent cross-links the SAP by internal branches and another type cross-links the polyacrylate externally to make a more tridimensional network. ***. The polymerization is of single molecules of sodium acrylate; the crosslinker ensures that the granules remain insoluble when exposed to liquid, and a crosslinker connects the single molecules together to form a polymer network; the crosslinker ensures that the granules remain insoluble when exposed to liquid. Upon contact with an aqueous liquid the sodium ions become dissociated generating an osmotic pressure which drives more liquid into the SAP. BASF, "Superabsorbents," retrieved November 10, 2021, https://personal-care-hygiene.basf.com/global/en/hygiene/superabsorbents.html.

[24] Petition, pp. 4-6. Conference transcript, pp. 36-37 (Greer).

[25] Petition, p. 6.

Disposables and Nonwovens Association ("EDANA").[26] Typical characteristics required in the industry include, but are not limited to, the following:[27]

a. Capacity – the total amount of liquid an SAP can absorb either in free-swelling (no load) conditions ("Free Swell Capacity" or "FSC") or after a centrifugation process to remove unabsorbed liquid ("Centrifuge Retention Capacity" or "CRC"), which is important for hygiene manufacturers that want to meet a certain liquid absorption capacity in their products.

b. Absorption Against Pressure – the amount of liquid absorbed by an SAP under an external pressure, which is important to avoid "gel blocking" and subsequent leakage in hygiene products.

c. Permeability – the ability of liquid to pass between already swollen SAP particles, which is important for better SAP utilization in absorbent cores.

d. Absorption Speed – the time it takes for liquid to be absorbed by an SAP, which is important as rapid absorption of free liquid in the hygiene product minimizes the risk of leakage.

Petitioner states that across the SAP industry, the manufacturing processes are similar.[28] Evonik states there are a limited number of production processes, with differences in methodology primarily having to do with the functional step of polymerization.[29] Respondents state that SAP-8 is a new generation product that has better performance characteristics than other SAP, and it is therefore not interchangeable with other SAP.[30] P&G argues that the differences in production methods result in differences in the physical characteristics and performance properties of SAP-8, which is measurably superior to other SAP and previous formulations according to laboratory testing.[31] P&G stated that the standard most important and consumer-relevant for diapers is the speed of absorption under pressure. No SAP on the

[26] Petitioner's postconference brief, Exhibit 1, Answers to Staff Questions, question #5, p. 2; Conference transcript, p. 100 (Terhart).

[27] Petitioner's postconference brief, Exhibit 1, Answers to Staff Questions, question #7, p. 3; Conference transcript, p. 101 (Cauble).

[28] Petition, p. 5; Conference transcript, p. 37 (Greer).

[29] Conference transcript, pp. 99-100 (Terhart).

[30] LG Chem's postconference brief, p. 1. SAP-8 has the chemical name sodium polyacrylate, and it has the same CAS number as sodium polyacrylate (CAS 9003-04-7). Conference transcript, pp. 157-158 (Won): LG Chem's postconference brief, Answers to Staff Questions, question #7, p. 6.

[31] Conference transcript, p. 130 (Gordon).

market takes less than 200 seconds to absorb 20 grams of saline solution (a proxy for urine) under pressure, except for SAP-8, which takes only 130 seconds. When the test for absorbency speed is graphed against the aforementioned standard of centrifuge retention capacity, SAP-8 is set apart from all other SAP in the market. These characteristics allow diapers produced using SAP-8 to better maintain their shape and fit and to be thinner and more comfortable for the baby. This leads to superior dryness, which can be directly linked to infant skin health.[32]

Respondents state that SAP-8 has design and production processes that are different from other SAP products, and P&G and LG Chem have multiple patents to support this claim.[33] In the experience of P&G, SAP-8 must be produced using a belt polymerization process, and not all companies are qualified to meet specifications.[34] In the SAP industry, there are hundreds of patents related to SAP production, and some representative ones are shown in table I-4.[35] Licensing and royalties are not common in the SAP industry, although they have been used in the past and are used when necessary.[36]

[32] Conference transcript, p. 131 (Gordon).

[33] P&G holds patents to the performance characteristics and defining test method of SAP-8 as well as to the diaper design that is enabled by the use of SAP-8. Conference transcript, p. 130 (Gordon). LG Chem has *** patents around SAP-8, which are the following: ***. LG Chem's postconference brief, Answers to Staff Questions, questions #6 and #7, p. 6; Exhibit 25.

[34] Conference transcript, p.129 (Gordon). ***. P&G states the alternate kneader polymerization process cannot produce an SAP product that meets the specifications for P&G's SAP-8 product. LG Chem's postconference brief, Answers to Staff Questions, question #3, p. 4.

[35] Petitioner's postconference brief, Exhibit 1, Answers to Staff Questions, question #18, p. 8.

[36] For example, ***. U.S. producers' questionnaire response, section III-11; Petitioner's postconference brief, Exhibit 1, Answers to Staff Questions, question #18, p. 8.

Table I-4
SAP: Representative patents in the SAP industry

Publication Number	Owner
US10711095	Novomer
US10632451	LG Chem
US10653812	LG Chem
US10730026	Sumitomo
US10850260	Nippon Shokubai
US10711074	LG Chem
US10843170	LG Chem
US10894245	LG Chem
US10843169	LG Chem
US10731024	Formosa Plastic
US10550243	Formosa Plastic
US10814308	LG Chem
US9550213	BASF
US9822203	BASF
US0186042	Evonik
US0306155	Evonik
US0060418	Evonik
US0306156	Evonik

Source: Petitioner's postconference brief, Exhibit 17.

Domestic like product issues

The petitioner proposes one domestic like product, consisting of all SAP, as that product is defined in the scope.[37] LGCAI and P&G expressly do not object to Petitioner's proposed domestic like product definition for purposes of this preliminary determination.[38]

[37] Petitioner's postconference brief, p. 8.

[38] Conference transcript at pp. 150-151 (Mowry and Fischer-Fox). KCC did not specifically address the issue of domestic like product.

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

U.S. market characteristics

SAP is a granular powder that can absorb large amounts of liquid. Most SAP is used in hygiene products, particularly infant diapers, adult incontinence products, and feminine hygiene products.[1] According to ***, baby diapers/training pants was the largest end use of SAP in the United States (*** percent of U.S. consumption), followed by adult incontinence products (*** percent), and feminine hygiene products (*** percent), with technical/industrial uses accounting for *** percent.[2] SAP performance characteristics include the capacity to absorb liquids, absorption against pressure, permeability, and absorption speed.[3] Capacity is a more important factor for some hygiene products such as incontinence products that have a high fluff content whereas factors such as absorption under pressure, permeability, and absorption speed are more important for thin and ultra-thin hygiene products.[4]

SAP is produced by a relatively small number of global producers. Three firms produce SAP in the United States: BASF, Evonik, and NSAI, ***. All three producers also produce SAP in other countries (in Europe and Asia) and all three firms imported SAP ***.[5]

Global purchases of SAP are concentrated among a small number of firms. Purchasers will typically purchase SAP from multiple suppliers who have qualified their products.[6] Large purchasers include P&G, manufacturer of Pampers brand diapers, and Kimberly-Clark Corp. ("KCC"), manufacturer of Huggies brand diapers.[7] ***

---

[1] It is also used in non-hygiene applications, such as food packaging, storage, agriculture, and civil engineering. Petition, p. 1 and petitioner's postconference brief, pp. 12-13.

[2] ***.

[3] Petitioner's postconference brief, exhibit 1, p. 3.

[4] Petitioner's postconference brief, exhibit 1, pp. 3-4.

[5] The three U.S. producers submitted responses to both the U.S. producer's and importer's questionnaires. Their responses to certain questions regarding demand, interchangeability, and significance of differences other than price are shown in the tables with U.S. producers but not included in the importer counts in those tables.

[6] Petitioner's postconference brief, exhibit 1, p. 8.

[7] P&G and KCC account for about *** of U.S. SAP demand and consume about *** percent of the global output of SAP. ***.

LG Chem reported that it considers *** U.S. customers to be brand name customers including ***. It reported that these customers accounted for about *** percent of its U.S. sales during the period of investigation, that *** percent of its sales during this period went to private label diaper producers, and *** percent went to industrial users. LG Chem's postconference brief, Responses to Staff Questions, p. 1.

***.

One U.S. producer and two importers reported changes in the product mix and marketing for SAP. U.S. producer *** reported increased consolidation and standardization of products and more interchangeability among suppliers. It also reported that price pressure from subject imports has led to an increased focus on efficiency and cost savings and reduced technical service. Importer ***. ***.

Apparent U.S. consumption of SAP increased slightly during 2018 to 2020, decreasing in 2019 and increasing in 2020. Overall, apparent U.S. consumption in 2020 was *** percent higher than in 2018. It was slightly higher (by *** percent) in interim (January-September) 2021 than in interim 2020.

Channels of distribution

Most SAP is shipped to end users, particularly hygiene end users, which accounted for *** of U.S. shipments of U.S.-produced and imported SAP in 2020 (table II-1).

Table II-1
SAP: 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	Hygiene end users	***	***	***	***	***
United States	Non-hygiene end users	***	***	***	***	***
South Korea	Distributors	***	***	***	***	***
South Korea	Hygiene end users	***	***	***	***	***
South Korea	Non-hygiene end users	***	***	***	***	***
Nonsubject	Distributors	***	***	***	***	***
Nonsubject	Hygiene end users	***	***	***	***	***
Nonsubject	Non-hygiene end users	***	***	***	***	***

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

Geographic distribution

U.S. producers reported selling SAP to all regions in the contiguous United States and subject importers reported selling to *** except *** (table II-2). For U.S. producers, less than one percent of sales were within 100 miles of their production facility, 62 percent were between 101 and 1,000 miles, and 38 percent were over 1,000 miles. Subject importers sold *** percent within 100 miles of their U.S. point of shipment, *** percent between 101 and 1,000 miles, and *** percent over 1,000 miles.

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

Region	U.S. producers	South Korea
Northeast	3	***
Midwest	3	***
Southeast	3	***
Central Southwest	3	***
Mountains	3	***
Pacific Coast	2	***
Other	0	***
All regions (except Other)	2	***
Reporting firms	3	2

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

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

Supply and demand considerations

U.S. supply

Table II-3 provides a summary of the supply factors regarding SAP from U.S. producers and from South Korea. The responding foreign producer, LG Chem, estimated that in 2020, it accounted for *** percent of production of SAP in South Korea and *** percent of total exports from South Korea to the United States. The other South Korean producer, Sumitomo, did not submit a questionnaire response. ***. ***.

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

Quantity in metric tons dry weight; ratio and share in percent; count is number of "yes" responses

Factor	Measure	United States	South Korea
Capacity 2018	Quantity	***	***
Capacity 2020	Quantity	***	***
Capacity utilization 2018	Ratio	***	***
Capacity utilization 2020	Ratio	***	***
Inventories to total shipments 2018	Ratio	***	***
Inventories to total shipments 2020	Ratio	***	***
Home market shipments 2020	Share	***	***
Non-US export market shipments 2020	Share	***	***
Ability to shift production	Count	***	***

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

Note: Responding U.S. producers accounted for all of U.S. production of SAP in 2020. The responding foreign producer/exporter firm LG Chem estimated that it accounted for *** percent of U.S. imports of SAP from South Korea 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."

Domestic production

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

The U.S. industry's capacity was nearly the same in 2020 as in 2018 and in the interim periods.[8] Capacity utilization declined from 2018 to 2020 and was lower in interim 2021 than in interim 2020. The quantity and share of exports increased from 2018 to 2020, with exports comprising about 17 percent of U.S. producers' total shipments in 2020.[9] All three U.S. producers reported that their major export markets were in the Americas including ***. *** U.S. producers reported being unable to switch production from SAP to other products using the same equipment as SAP.

Subject imports from South Korea

Based on available information, producers of SAP from South Korea have the ability to respond to changes in demand with moderate changes in the quantity of shipments of SAP to the U.S. market. The main contributing factors to this degree of responsiveness of supply are increased capacity and slightly lower capacity utilization from 2018 to 2020 and the ability to shift shipments from alternate markets. Factors mitigating responsiveness of supply include a high rate of capacity utilization, limited availability of inventories, and an inability to shift production to or from alternate products.

***. ***.[10]

Most of LG Chem's SAP shipments go to third-country markets, including *** (see part VII). SAP from South Korea is currently the subject of antidumping proceedings by the EU and the Gulf Cooperation Council (see part VII). *** reported that it was *** to switch production from SAP to other products using the same equipment.

Imports from nonsubject sources

Nonsubject imports, as reported in questionnaire responses, accounted for *** percent of total U.S. imports in 2020, down from *** percent in 2018, but the share was higher in interim 2021 (*** percent) than in interim 2020 (*** percent). Source of nonsubject imports

[8] ***.

[9] The increase in export shipments is ***.

[10] LG Chem's postconference, brief, p. 40

include Japan and Belgium (see part IV). Petitioner reported an ***.[11]

Supply constraints[12]

All three U.S. producers reported that they had experienced supply constraints since January 1, 2018, particularly constraints related to weather events Winter Storm Uri and Hurricane Ida in 2021. Importers reported no supply constraints for imported product.

***. ***.

***.[13] ***.

***.

With respect to the COVID-19 pandemic, Petitioner reported some additional costs to U.S. producers as they implemented strict hygiene protocols in their production plants, but that U.S. producers continued operations and ***.[14] In questionnaire responses, two U.S. producers reported no impact

[11] Petitioner's postconference brief, exh1, p. 31.

[12] Information on U.S. producer constraints in this section is from U.S. producer questionnaire responses and Petitioner's postconference brief, Exhibit 1, pp. 29-30.

[13] ***.

[14] Petitioner's postconference brief, exhibit 1, p. 29.

of the pandemic. One producer, ***. Importer LGCAI reported ***.

***.[15] ***.[16]

U.S. demand

Based on available information, the overall demand for SAP 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-to-moderate cost share of SAP in end-use products.

End uses and cost share

U.S. demand for SAP depends on the demand for U.S.-produced downstream products. The major end use is hygiene products, particularly infant diapers, as well as adult incontinence products and feminine products. Other end uses, which account for a small portion of consumption of the product, include food-related uses, such as refrigerant or freshness-keeping agents, household products, such as disposable heating packs or environment fragrance, and water retention in agriculture or civil engineering projects.[17] SAP accounts for a small-to-moderate share of the cost of the end-use products in which it is used. Firms reported that SAP accounts for 12 to 25 percent of the cost of hygiene products.

[15] ***. KCC's brief, p. 4 and attachments.

[16] P&G's Answers to Staff Questions, Interchangeability section.

[17] Petition, p. 4.

Business cycles

All responding U.S. producers and importers indicated that the SAP market was not subject to business cycles.

U.S. producer *** and importer *** reported distinctive conditions of competition. ***. ***.

Demand trends

Demand is driven by the demand for disposable infant diapers and adult incontinence products, and to a lesser extent, feminine hygiene and industrial products. Demand for hygiene products is based on population and demographic trends. Disposable baby diapers account for *** percent of the baby diaper market in the United States, and consumption of disposable diapers has declined as more absorbent diapers have entered the market.[18] Petitioner estimates that U.S. demand growth for SAP is about 1 to 3 percent per year.[19]

All responding firms reported either an increase or no change in U.S. demand for SAP since January 1, 2018 (table II-4). U.S. producers *** and importer *** reported that U.S. demand for SAP has increased and U.S. producer *** and importers *** reported no change in U.S. demand. *** reported a decrease in demand for infant diapers offset by an increase in demand for adult incontinence products. All responding U.S. producers and importers reported that demand for SAP outside of the United States has increased.

[18] ***.

[19] Petitioner's postconference brief, p. 13. In questionnaire responses, *** estimated annual demand growth at 2 to 2.5 percent while *** estimated it at 1 to 2 percent.

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

Market	Firm type	Increase	No change	Decrease	Fluctuate
Domestic demand	U.S. producers	2	1	0	0
Domestic demand	Importers	1	2	0	0
Foreign demand	U.S. producers	3	0	0	0
Foreign demand	Importers	5	0	0	0

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

Note: Importer responses shown in the table do not include responses of the three U.S. producers.

Substitute products

Substitutes for SAP are extremely limited. All three U.S. producers and all but one responding importer reported that there were no substitutes for SAP. Importer *** reported that acrylamide copolymer could be used in a special application.[20]

Substitutability issues

This section assesses the degree to which U.S.-produced SAP and imports of SAP from subject countries can be substituted for one another by examining the importance of certain purchasing factors and the comparability of SAP from domestic and imported sources based on those factors. Based on available data, staff believes that there is a moderate degree of substitutability between domestically produced SAP and SAP imported from subject sources.[21] Factors contributing to this level of substitutability include the qualification of both subject import suppliers and domestic producers to produce to similar individual customer specifications, little preference for particular countries of origin, and similarities between domestically produced SAP and subject imports when produced to the similar specifications. Factors reducing substitutability include customer-specific grades and the associated lengthy qualification processes for those grades, the prevalence of long-term contracts that specify price and volume targets, some limited availability in 2021 due to U.S. producer supply constraints, reported constraints by customers in switching their end-product production lines between suppliers even when qualified for the same grade, and significant factors other than

[20] ***.

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

price that firms consider such as quality, reliability of supply, and the importance of maintaining multiple suppliers.

Factors affecting purchasing decisions

Purchasers responding to lost sales lost revenue allegations[22] were asked to identify the main purchasing factors their firm considered in their purchasing decisions for SAP. The major purchasing factors identified by firms include quality/performance including product developed to the purchaser's performance standards, reliability of supply including supply chain security and redundancy, and price/total value.

Lead times

SAP is primarily sold from inventory. ***. Average reported lead times from inventory were *** days and the average reported lead time for produced-to-order product was *** days. Importer *** reported that *** percent of its U.S. commercial shipments came from U.S. inventories, with lead times averaging *** days, and *** percent was from foreign inventories, with lead times averaging *** days.[23]

Qualification

Petitioner reported that qualification times can range from 3 to 12 months, and that "once a supplier is qualified to provide a particular product, that product is interchangeable among qualified suppliers."[24] It added that new qualification may be required when significant changes that affect the performance or handling of the products are made to existing grades. It also stated that the lifecycle for an SAP product may last from three to five years before the next generation product is produced.[25]

KCC stated that majority of its U.S. purchases of SAP are customized product, which require significant development and testing, as part of the overall development and design of the end-use product, to ensure that the hygiene product meets the performance and quality

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

[23] ***.

[24] Petitioner's postconference brief, exhibit 1, p. 12.

[25] Petitioner's postconference brief, exhibit 1, p. 13.

expected by consumers. It stated that the qualification for its current SAP suppliers ranges from *** for a small change to a currently qualified grade to *** for a new SAP product, and that qualifying a new supplier can take more than ***.[26]

***.[27] ***.

Grades

Manufacturers produce a range of SAP grades. Among U.S. producers, firms reported producing *** to *** different grades during the period of investigation, although some of the grades were discontinued during the period. LG Chem reported that in 2021 it produced *** different grades.[28]

P&G stated that during the period it has transitioned to using to SAP-8. This product, which has a higher permeability, is produced in the United States by two of the U.S. producers ***.[29] LG Chem also supplies SAP-8 to P&G and reported that the product has a lower bulk density and a very high speed of absorption under pressure and has "specifications that permit P&G to make diapers that do not contain raw wood pulp."[30] P&G reported that ***.[31] P&G reported that it began using SAP-8 in some overseas diaper production in 2018; in 2019, started using it in some of its

[26] ***. KCC's postconference brief, pp. 2-3.

[27] P&G's Answers to Staff Questions, Supplier qualification section. LG Chem reported the qualification process to produce SAP-8 for P&G took ***. LG Chem's postconference brief, Responses to Staff Questions, p. 17.

[28] LG Chem's postconference brief, Responses to Staff Questions, p. 5.

[29] Petitioner's postconference brief, exhibit 1, p. 17.

[30] LG Chem's postconference brief, p. 11.

[31] P&G's Answers to Staff Questions, Supplier qualification section.

U.S. production; and by the end of the period of investigation, used it in all of its diaper production.[32]

A large portion of the market consists of SAP products that are custom made to a purchaser's specifications and ***.[33] LG Chem stated that ***. LG Chem added that ***. Both P&G and KCC reported that the precise recipes for their custom SAP specifications vary by producer.[34] ***.[35]

Comparison of U.S.-produced and imported SAP

In order to determine whether U.S.-produced SAP can generally be used in the same applications as imports from South Korea, U.S. producers and importers were asked whether the products can always, frequently, sometimes, or never be used interchangeably. As shown in table II-5, two U.S. producers reported that subject imports from South Korea were frequently interchangeable with U.S.-produced product and one producer reported that they were always interchangeable. Among importers other than petitioners, two firms *** reported that the U.S. and South Korean products were always interchangeable, one *** reported that they were sometimes interchangeable, and one *** reported they were never interchangeable.

***.

[32] Conference transcript, p. 128 (Gordon).
[33] LG Chem's postconference brief, p. 9.
[34] P&G's Answers to Staff Questions, Interchangeability section. ***.
[35] LG Chem's postconference brief, Responses to Staff Questions, pp. 9-10.

Table II-5
SAP: Count of firms reporting the interchangeability between SAP produced in the United States and in other countries, by firm type and country pair

Firm type	Country pair	Always	Frequently	Sometimes	Never
U.S. producers	U.S. vs. South Korea	1	2	0	0
U.S. producers	U.S. vs. Other	1	2	0	0
U.S. producers	South Korea vs. Other	0	2	0	0
Importers	U.S. vs. South Korea	2	0	1	1
Importers	U.S. vs. Other	1	0	1	1
Importers	South Korea vs. Other	0	0	1	1

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

Note: Importer responses shown in the table do not include responses of the three petitioners.

***.[36] ***.

***

[36] ***.

Petitioner disputes that U.S. producers do not have enough SAP-8 capacity. It added that in 2021, ***. In addition, it stated that ***. Petitioner's brief, exhibit 1, p. 12.

***. ***.[37]

***. Petitioner stated that nonsubject imports ***.[38]

In addition, U.S. producers and importers were asked to assess how often differences other than price were significant in sales of SAP from the United States, South Korea, or nonsubject countries. As seen in table II-6, two U.S. producers reported that factors other than price were sometimes significant and one reported that such factors were never significant. Among importers other than petitioners, two *** reported that such factors were always significant, one *** reported "sometimes," and one *** reported "never."

Table II-6
SAP: Count of firms reporting the significance of differences other than price between SAP produced in the United States and in other countries, by firm type and country pair

Firm type	Country pair	Always	Frequently	Sometimes	Never
U.S. producers	U.S. vs. South Korea	0	0	2	1
U.S. producers	U.S. vs. Other	0	0	2	1
U.S. producers	South Korea vs. Other	0	0	1	1
Importers	U.S. vs. South Korea	2	0	1	1
Importers	U.S. vs. Other	1	0	1	0
Importers	South Korea vs. Other	1	0	1	0

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

Note: Importer responses shown in the table do not include responses of the three petitioners.

*** stated that factors other than price include available capacity, ability to meet specifications, on-time delivery, and the difficulty and time required to qualify a new SAP product. It added that the qualification process takes place before any price or quantity negotiations. *** reported that product quality is essential and is always a significant factor.

[37] LG Chem's postconference brief, p. 11.
[38] Petitioner's postconference brief, exhibit 1, p. 31.

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 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 responses of three firms that accounted for all U.S. production of SAP during 2020.

U.S. producers

The Commission issued a U.S. producer questionnaire to three firms based on information contained in the petition, and all three firms provided usable data on their operations.[1] Staff believes that these responses represent all U.S. production of SAP.

Table III-1 lists U.S. producers of SAP, positions on the petition, their production locations, and shares of total production.

Table III-1
SAP: U.S. producers of SAP, their positions on the petition, production locations, and shares of reported production, 2020

Shares in percent.

Firm	Position on petition	Production location(s)	Share of production
BASF	Petitioner	Freeport, Texas	***
Evonik	Petitioner	Greensboro, NC Garyville, LA	***
NSAI	Petitioner	Pasadena, TX	***
All firms	Various	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 "---".

Table III-2 presents information on U.S. producers' ownership, related and/or affiliated firms.

[1] In its petition, the petitioners did not identify any other known U.S. producers of SAP.

Table III-2
SAP: U.S. producers' ownership, related and/or affiliated firms

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

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

As indicated in table III-2, the three U.S. producers are related to nonsubject producers of SAP. In addition, as discussed in greater detail below, three U.S. producers directly import SAP from nonsubject sources.

Table III-3 presents U.S. producers' reported changes in operations since January 1, 2018. *** reported changes in operations since January 1, 2018.

Additionally, U.S. producers were asked to respond to the impact of the COVID-19 pandemic on their business operations, since January 1, 2020. *** responded that "***

***."[2]

Table III-3
SAP: U.S. producers' reported changes in operations, since January 1, 2018

Item	Firm name and narrative response on changes in operations
Plant closings	***
Consolidations	***
Prolonged shutdowns or curtailments	***
Prolonged shutdowns or curtailments	***
Revised labor agreements	***

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

[2] *** U.S. producer's questionnaire response, section II-2b.

U.S. production, capacity, and capacity utilization

Table III-4 and figure III-1 present U.S. producers' production, capacity, and capacity utilization. *** had the largest production by share during 2018-20. *** accounted for *** of all SAP production during any year or interim period. During 2018-2020 and the interim periods of 2020 and 2021, U.S. producer's capacity remained the same, despite a small decline from 2018 to 2019. *** capacity decreased by *** percent from 2018 to 2019 but increased ***. During 2018-20, U.S. producers' production decreased by 2.6 percent, and was lower during interim 2021 than interim 2020 by 4.5 percent. *** SAP production decreased by *** percent, respectively during 2018-20. *** SAP production increased by *** percent during 2018-20, but was lower in interim 2021 than in interim 2020 by *** percent. Overall capacity utilization decreased by 2.3 percentage points during 2018-20 and was lower during interim 2021 than in interim 2020 by 3.9 percentage points. *** capacity utilization decreased by *** percentage points and *** percentage points, respectively during 2018-20, contributing to the overall decrease in U.S. producers' capacity utilization. *** capacity utilization increased by *** percentage points during 2018-20, but was lower by *** percentage points during Interim 2021 than in Interim 2020.

Table III-4
SAP: U.S. producers' capacity, by firm and period

Quantity in metric tons, dry weight

Firm	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
BASF	***	***	***	***	***
Evonik	***	***	***	***	***
NSAI	***	***	***	***	***
All firms	476,000	469,400	476,200	357,800	357,600

Table continued.

Table III-4 Continued
SAP: U.S. producers' production, by firm and period

Quantity in metric tons, dry weight

Firm	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
BASF	***	***	***	***	***
Evonik	***	***	***	***	***
NSAI	***	***	***	***	***
All firms	424,199	409,807	413,217	320,015	305,659

Table continued.

Table III-4 Continued
SAP: U.S. producers' capacity utilization, by firm and period

Capacity utilization ratio is production to production capacity in percent

Firm	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
BASF	***	***	***	***	***
Evonik	***	***	***	***	***
NSAI	***	***	***	***	***
All firms	89.1	87.3	86.8	89.4	85.5

Table continued.

Table III-4 Continued
SAP: U.S. producers' share of production, by firm and period

Share in percent

Firm	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
BASF	***	***	***	***	***
Evonik	***	***	***	***	***
NSAI	***	***	***	***	***
All firms	100.0	100.0	100.0	100.0	100.0

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

Note: Capacity utilization ratio represents the ratio of the U.S. producers' production to its production capacity.

Figure III-1
SAP: U.S. producers' production, capacity, and capacity utilization, by period

* * * * * * *

Alternative products

There were *** firms that reported producing ***.

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

Table III-5 presents U.S. producers' U.S. shipments, export shipments, and total shipments. During 2018-20, U.S. shipments decreased by 5.7 percent, based on quantity, and decreased by 27.1 percent, based on value. U.S. shipments were also lower during interim 2021 than in interim 2020 by 2.3 percent, based on quantity, but were higher by 20.2 percent during the same period by value. Unit values of U.S. shipments of SAP decreased by 22.7 percent during 2018-20, but were higher by 23.1 percent during Interim 2021 than in interim 2020. During 2018-20, export shipments increased in quantity, by *** percent, but decreased based on value, by *** percent.[3] [4]

[3] During 2018-20, *** export shipments accounted for *** percent of all export shipments by the U.S. producers. *** export shipments increased by *** percent from 2019 to 2020, and it identified its principal export markets as ***. ***. *** producer questionnaire, part II-7.

[4] *** indicated that its export shipments were ***. Email correspondence with ***, November 19, 2021.

Table III-5
SAP: U.S. producers' shipments, by destination and period

Quantity in metric tons, dry weight; value in 1,000 dollars; unit value in dollars per metric tons, dry weight; share of quantity is the share of total shipments by quantity in percent; share of value is the share of total shipments by value in percent

Item	Measure	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
U.S. shipments	Quantity	362,908	357,912	342,363	259,370	253,277
Export shipments	Quantity	***	***	***	***	***
Total shipments	Quantity	***	***	***	***	***
U.S. shipments	Value	633,492	574,721	461,680	348,739	419,187
Export shipments	Value	***	***	***	***	***
Total shipments	Value	***	***	***	***	***
U.S. shipments	Unit value	1,746	1,606	1,349	1,345	1,655
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.

U.S. producers' inventories

Table III-6 presents U.S. producers' end-of-period inventories and the ratio of these inventories to U.S. producers' production, U.S. shipments, and total shipments**.** During 2018-20, end-of-period inventories fluctuated, but decreased by 7.1 percent, and were lower by 32.5 percent during Interim 2021 than in Interim 2020.[5]

[5] During Interim 2021, *** accounted for approximately *** percent of all end-of-period inventories. *** U.S. producer questionnaire, section II-7.

Table III-6
SAP: U.S. producers' inventories and their ratio to select items, by period

Quantity in metric tons, dry weight; ratio are inventories to production and shipments

Item	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
End-of-period inventory quantity	37,257	34,192	34,610	47,036	31,740
Inventory ratio to U.S. production	8.8	8.3	8.4	11.0	7.8
Inventory ratio to U.S. shipments	10.3	9.6	10.1	13.6	9.4
Inventory ratio to total shipments	***	***	***	***	***

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

U.S. producers' imports

U.S. producers' imports of SAP are presented in tables III-7, III-8, and III-9. Table III-10 presents U.S. producers' reasons for importing.

Table III-7
SAP: * U.S. production, imports, and ratio to production, 2018-2020, Interim 2020 and Interim 2021**

Quantity in metric tons, dry weight; ratios are ratios of imports to U.S. production in percent

Item	Measure	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
U.S. production	Quantity	***	***	***	***	***
Imports from nonsubject sources ***	Quantity	***	***	***	***	***
Imports from nonsubject sources ***	Ratio	***	***	***	***	***

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

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

Table III-8
SAP: * U.S. production, imports, and ratio to production, 2018-2020, Interim 2020 and Interim 2021**

Quantity in metric tons, dry weight; ratios are ratios of imports to U.S. production in percent

Item	Measure	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
U.S. production	Quantity	***	***	***	***	***
Imports from nonsubject sources ***	Quantity	***	***	***	***	***
Imports from nonsubject sources *** to U.S. production	Ratio	***	***	***	***	***

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

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

Table III-9
SAP: * U.S. production, imports, and ratio to production, 2018-2020, Interim 2020 and Interim 2021**

Quantity in metric tons, dry weight; ratios are ratios of imports to U.S. production in percent

Item	Measure	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
U.S. production	Quantity	***	***	***	***	***
Imports from nonsubject sources ***	Quantity	***	***	***	***	***
Imports from nonsubject sources *** to U.S. production	Ratio	***	***	***	***	***

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

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

Table III-10
SAP: U.S. producers' reasons for importing

Item	Narrative response on reasons for importing
***'s reason for importing	***
***'s reason for importing	***
***'s reason for importing	***

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

U.S. employment, wages, and productivity

Table III-11 shows U.S. producers' employment-related data. During 2018-20, the average number of PRWs decreased by 2.6 percent, but were higher by 1.1 percent during Interim 2021 than in Interim 2020. At the Commission's conference, BASF representatives indicated that it closed its SAP commercial and technical center in Charlotte, North Carolina, due to workforce reductions caused by its challenging financial situation.[6] ***.[7] [8] Total hours worked, hours worked per PRW, and wages all decreased during 2018-20, and were higher during Interim 2021 than in Interim 2020. Hourly wages, productivity, and unit labor costs all increased during 2018-20. Hourly wages and unit labor costs were higher during Interim 2021 than in Interim 2020, while productivity was lower by 8.8 percent.

Table III-11
SAP: U.S. producers' employment related information, by period

Item	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
Production and related workers (PRWs) (number)	378	376	368	369	373
Total hours worked (1,000 hours)	856	850	794	597	625
Hours worked per PRW (hours)	2,265	2,261	2,158	1,618	1,676
Wages paid ($1,000)	41,540	42,475	40,578	30,135	32,367
Hourly wages (dollars per hour)	48.53	49.97	51.11	50.48	51.79
Productivity (MTDW per 1,000 hours)	495.6	482.1	520.4	536.0	489.1
Unit labor costs (dollars per MTDW)	97.93	103.65	98.20	94.17	105.89

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

[6] Conference transcript, p. 41 (Amin).

[7] *** U.S. producer questionnaire response, sections II-2a and II-11. ***.

[8] Evonik indicated that it had employed approximately 190 people in the production and sale of SAP in the United States. Conference transcript, p. 22 (Terhart).

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

U.S. importers

The Commission issued importer questionnaires to 10 firms believed to be importers of SAP, as well as to all U.S. producers of SAP.[1] Usable questionnaire responses were received from seven companies, representing *** of U.S. imports from South Korea in 2020 under HTS subheading 3906.90.50, a "basket" category.[2] [3] Table IV-1 lists all responding U.S. importers of SAP from South Korea and other sources, their locations, and their shares of U.S. imports, in 2020.

[1] The Commission issued questionnaires to those firms identified in the petition, 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 subheading 3906.90.50 in 2020.

[2] Four firms completed the U.S. importers questionnaire, but they were not included in the dataset. DL Trading, Ltd., Glatfelter Gatineau, McAirlaid's Inc., and Ontex Operations USA LLC each completed the U.S. importers questionnaire, but ***. ***.

[3] Staff believes these seven useable questionnaire responses accounted for *** percent of subject imports from South Korea in 2020. These questionnaires reported imports of *** of SAP from South Korea, and official import statistics reported 62,470 metric tons of merchandise entered the United States under HTS statistical reporting number 3906.90.5000 (a basket category that includes out-of-scope merchandise, such as acrylic polymers). Staff believes the seven U.S. importers' questionnaire responses accounted for approximately *** of all imports that entered the United States under HTS statistical reporting number 3906.90.5000 during 2020.

Table IV-1
SAP: U.S. importers, their headquarters, and share of total imports by source, 2020
Share in percent

Firm	Headquarters	South Korea	Nonsubject sources	All import sources
BASF	Florham Park, NJ	***	***	***
Eco-Mirae	Gainesville, FL	***	***	***
Evonik	Greensboro, NC	***	***	***
LG	Atlanta, GA	***	***	***
NSAI	Pasadena, TX	***	***	***
P&G	Cincinnati, OH	***	***	***
Zaimella	Medley, FL	***	***	***
All firms	Various	***	***	***

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

U.S. imports

Table IV-2 presents the narrative responses on the impact of COVID-19 reported by U.S. importers. Three U.S. importers, *** responded to the U.S. importer's question on the impact of COVID-19 to its business operations.[4] ***.

[4] ***. *** U.S. importer questionnaire response, section II-2b.

Table IV-2
SAP: U.S. importers response on the impact of Covid-19

Firm name	Narrative response on impact of COVID-19
Evonik	***
LGCAI	***
P&G	***

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

Table IV-3 and figure IV-1 present data for U.S. imports of SAP from Korea and all other sources. Subject imports from Korea accounted for *** percent of total imports of SAP by quantity and *** percent by value in 2020. During January-September ("interim") 2021, subject imports were lower by *** percentage points than during interim 2020, accounting for *** percent of total import quantity, and were lower by *** percentage points, accounting for *** percent of total import value in interim 2021 than in interim 2020. During 2018-20, subject imports from Korea increased by *** percent, based on quantity, and by *** percent, based on value. While the vast majority of the increase in U.S. imports from Korea was accounted for by ***, nonsubject imports of SAP to the United States decreased during 2018-20. The ratio of subject imports to U.S. production increased from *** percent in 2018 to *** percent in 2020. The average unit value (dollars per metric ton) of subject imports decreased by *** percent during 2018-20, but was higher during interim 2021 than in interim 2020. The average unit value for imports from nonsubject sources decreased by *** percent from 2018-20, but was higher by *** percent during interim 2021 than in interim 2020.

Four of the seven responding firms reported U.S. imports from nonsubject sources during 2018-20 and the interim periods. *** accounted for the vast majority of nonsubject

imports during 2020, accounting for *** percent of all nonsubject imports.[5] ***.[6]

Table IV-3
SAP: Share of U.S. imports by source and period
Quantity in metric tons, dry weight; value in 1,000 dollars; unit value in dollars per metric tons, dry weight

Source	Measure	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
South Korea	Quantity	***	***	***	***	***
Nonsubject sources	Quantity	***	***	***	***	***
All import sources	Quantity	***	***	***	***	***
South Korea	Value	***	***	***	***	***
Nonsubject sources	Value	***	***	***	***	***
All import sources	Value	***	***	***	***	***
South Korea	Unit value	***	***	***	***	***
Nonsubject sources	Unit value	***	***	***	***	***
All import sources	Unit value	***	***	***	***	***

Table continued.

[5] ***. *** U.S. importers questionnaire response, section II-7d.
[6] ***. *** U.S. importer questionnaire response, section III-21.

Table IV-3 Continued
SAP: Share of U.S. imports by source and period

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

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

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

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

* * * * * * *

Negligibility

The statute requires that an investigation be terminated without an injury determination if imports of the subject merchandise are found to be negligible.[7] Negligible imports are generally defined in the Act, as amended, as imports from a country of merchandise corresponding to a domestic like product where such imports account for less than 3 percent of the volume of all such merchandise imported into the United States in the most recent 12-month period for which data are available that precedes the filing of the petition or the initiation of the investigation. However, if there are imports of such merchandise from a number of countries subject to investigations initiated on the same day that individually account for less than 3 percent of the total volume of the subject merchandise, and if the imports from those countries collectively account for more than 7 percent of the volume of all such merchandise imported into the United States during the applicable 12-month period, then imports from such countries are deemed not to be negligible.[8] Subject imports from Korea accounted for *** percent of total U.S. imports of SAP in the 12-month period (November 2020 to October 2021) preceding the filing of the petition.

Table IV-4
SAP: U.S. imports in the twelve-month period preceding the filing of the petition, period

Quantity in metric tons, dry weight; share of quantity is the share of total imports by quantity in percent

Source of imports	Quantity	Share of quantity
South Korea	***	***
Nonsubject sources	***	***
All import sources	***	***

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

Geographical markets

SAP produced in the United States is shipped nationwide (see Part II for more information on geographic markets). Table IV-5 presents U.S. imports of other acrylic polymers in primary forms, by source and border of entry in 2020, based on official Commerce statistics. U.S. imports of other acrylic polymers in primary forms from South Korea entered multiple U.S. ports of entry across the nation. The vast majority of other acrylic polymers in primary forms from the subject country entered through Eastern borders of entry, while other acrylic

[7] 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)).

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

polymers in primary forms from nonsubject countries entered through the North and East borders of entry.

Table IV-5
Other acrylic polymers in primary forms (excluding plastics): U.S. imports, by source and border of entry, 2020

Quantity in metric tons dry weight

Source	East	North	South	West	All borders
South Korea	42,541	714	887	18,328	62,470
Nonsubject sources	94,645	93,967	66,874	7,431	262,917
All import sources	137,185	94,682	67,761	25,759	325,388

Table continued.

Table IV-5 Continued
Other acrylic polymers in primary forms (excluding plastics): U.S. imports, by source and border of entry, 2020

Share across in percent

Source	East	North	South	West	All borders
South Korea	68.1	1.1	1.4	29.3	100.0
Nonsubject sources	36.0	35.7	25.4	2.8	100.0
All import sources	42.2	29.1	20.8	7.9	100.0

Table continued.

Table IV-5 Continued
Other acrylic polymers in primary forms (excluding plastics): U.S. imports, by source and border of entry, 2020

Share down in percent

Source	East	North	South	West	All borders
South Korea	31.0	0.8	1.3	71.2	19.2
Nonsubject sources	69.0	99.2	98.7	28.8	80.8
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 statistical reporting number 3906.90.5000, accessed November 9, 2021. 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 "---".

Nonsubject imports

Table IV-6 presents nonsubject U.S. imports by source. Japan was the *** source for SAP during 2018-20. Japan's *** share of SAP imports

was largely due to *** nonsubject imports, which accounted for the ***.

Table IV-6
SAP: Nonsubject imports by source and by period

Quantity in metric tons, dry weight; Value in 1000 dollars, unit value in dollars per MDTW

Source	Measure	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
Japan	Quantity	***	***	***	***	***
Singapore	Quantity	***	***	***	***	***
European Union	Quantity	***	***	***	***	***
Other nonsubject sources	Quantity	***	***	***	***	***
Nonsubject sources	Quantity	***	***	***	***	***
Japan	Value	***	***	***	***	***
Singapore	Value	***	***	***	***	***
European Union	Value	***	***	***	***	***
Other nonsubject sources	Value	***	***	***	***	***
Nonsubject sources	Value	***	***	***	***	***
Japan	Unit value	***	***	***	***	***
Singapore	Unit value	***	***	***	***	***
European Union	Unit value	***	***	***	***	***
Other nonsubject sources	Unit value	***	***	***	***	***
Nonsubject sources	Unit value	***	***	***	***	***

Table continued.

Table IV-6 Continued
SAP: Nonsubject imports by source and by period

Shares and ratios in percent; Ratios represent the ratio to U.S. production

Source	Measure	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
Japan	Share of quantity	***	***	***	***	***
Singapore	Share of quantity	***	***	***	***	***
European Union	Share of quantity	***	***	***	***	***
Other nonsubject sources	Share of quantity	***	***	***	***	***
Nonsubject sources	Share of quantity	***	***	***	***	***
Japan	Share of value	***	***	***	***	***
Singapore	Share of value	***	***	***	***	***
European Union	Share of value	***	***	***	***	***
Other nonsubject sources	Share of value	***	***	***	***	***
Nonsubject sources	Share of value	***	***	***	***	***
Japan	Ratio	***	***	***	***	***
Singapore	Ratio	***	***	***	***	***
European Union	Ratio	***	***	***	***	***
Other nonsubject sources	Ratio	***	***	***	***	***
Nonsubject sources	Ratio	***	***	***	***	***

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

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as “---“. Shares are based on U.S. imports from all sources.

Apparent U.S. consumption

Table IV-7 presents data on apparent U.S. consumption and U.S. market shares for SAP. From 2018 to 2020, apparent U.S. consumption based on quantity increased by *** percent and based on value decreased by *** percent, and was higher based on quantity and value during interim 2021 than in interim 2020. This increase in apparent consumption quantity was due to the increased quantity of subject imports which was greater than the decline in U.S. producer's U.S. shipments. During 2018-20, U.S. producers' U.S. shipments decreased by 5.7 percent and 27.1 percent based on quantity and value, respectively, and were lower during interim 2021 than in interim 2020, based on quantity, but higher based on value. From 2018 to 2020, U.S. importers' U.S. shipments from South Korea increased by *** percent and *** percent, based on quantity and value, respectively. U.S. importers' U.S. shipments based on quantity and value were higher during interim 2021 than in interim 2020.

Table IV-7
SAP: Apparent U.S. consumption, by source and period

Quantity in metric tons, dry weight; value in 1,000 dollars; Unit values in dollars per MTDW

Source	Measure	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
U.S. producers	Quantity	362,908	357,912	342,363	259,370	253,277
South Korea	Quantity	***	***	***	***	***
Nonsubject sources	Quantity	***	***	***	***	***
All import sources	Quantity	***	***	***	***	***
All sources	Quantity	***	***	***	***	***
U.S. producers	Value	633,492	574,721	461,680	348,739	419,187
South Korea	Value	***	***	***	***	***
Nonsubject sources	Value	***	***	***	***	***
All import sources	Value	***	***	***	***	***
All sources	Value	***	***	***	***	***
U.S. producers	Unit value	***	***	***	***	***
South Korea	Unit value	***	***	***	***	***
Nonsubject sources	Unit value	***	***	***	***	***
All import sources	Unit value	***	***	***	***	***
All sources	Unit value	***	***	***	***	***

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

Note: Zeroes, null values, and undefined calculations are suppressed and shown as "---". Import source data is based on U.S. shipments of imports.

Figure IV-2
SAP: Apparent U.S. consumption, by source and period

* * * * * * *

U.S. market shares

U.S. market share data are presented in table IV-8. The share of U.S. apparent consumption held by subject imports increased by *** percentage points from 2018 to 2020, in quantity terms, and were higher by *** percentage points during interim 2021 than in interim 2020. On a value basis, subject import's share of apparent U.S. consumption increased by *** percentage points from 2018 to 2020, but was lower by *** percentage points during interim 2021 than in interim 2020. U.S. producers' market share decreased by *** percentage points during 2018-20, based on quantity, and decreased by *** percentage points based on value, and was lower by *** percentage points and *** percentage points during interim 2021 than in interim 2020.

Table IV-8
SAP: U.S. market shares, by source and period

Quantity in metric tons, dry weight; value in 1,000 dollars; share of quantity is the share of apparent U.S. consumption by quantity in percent; share of value is the share of apparent U.S. consumption by value in percent

Source	Measure	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
U.S. producers	Share of quantity	***	***	***	***	***
South Korea	Share of quantity	***	***	***	***	***
Nonsubject sources	Share of quantity	***	***	***	***	***
All import sources	Share of quantity	***	***	***	***	***
All sources	Share of quantity	100.0	100.0	100.0	100.0	100.0
U.S. producers	Share of value	***	***	***	***	***
South Korea	Share of value	***	***	***	***	***
Nonsubject sources	Share of value	***	***	***	***	***
All import sources	Share of value	***	***	***	***	***
All sources	Share of value	100.0	100.0	100.0	100.0	100.0

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

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as "---". Import source data is based on U.S. shipments of imports.

Part V: Pricing data

Factors affecting prices

Raw material costs

The major raw materials used to produce SAP are acrylic acid, which is produced from propylene, and caustic soda. U.S. producers' average unit raw material costs declined from 2018 to 2020 but were higher in the first three quarters of 2021 than in interim 2020. Raw materials' share of COGS declined from *** percent in 2018 to *** percent in 2020 and was *** percent in interim 2021 (see part VI). Petitioner estimates that acrylic acid and caustic soda account for *** percent of the raw material costs for SAP.[1] U.S. producers purchase their raw materials under long-term contracts.[2]

SAP prices are typically based on a formula, which includes a raw material component based on published prices for propylene and caustic soda. ***.[3] The raw material prices used in the formula may reflect raw material prices from a month or two prior to incorporation into the SAP formula price.[4] Prices of propylene and caustic soda are shown in figure V-1 and table V-1.

[1] Petitioner stated that since SAP represents a small portion of total demand for propylene and caustic soda, demand for SAP does not influence prices for these raw materials. Petitioner's postconference brief, exhibit 1, pp. 2, 11.

***. P&G's Answers to Staff Questions, price section.

[2] Petitioner's postconference brief, exhibit 1, p. 9.

[3] Petitioner's postconference brief, exhibit 1, p. 26. LG Chem stated that an early 2021 Texas winter storm severely disrupted acrylic acid delivery and production ***. LG Chem's postconference brief, Responses to Staff Questions, p. 12.

LG Chem's prices are indexed to the prices of propylene and caustic soda *** whereas U.S. producers' prices are ***. LG Chem's postconference brief, Responses to Staff Questions, p. 16. In its brief, LG Chem presents prices for propylene, caustic soda, and acrylic acid, published by ***. LG Chem's postconference brief, exhibit 12.

[4] Petitioner's postconference brief, exhibit 1, p. 10.

Propylene prices generally declined in 2018 and 2019 and the first half of 2020. They then increased, with a particularly steep increase from November 2020 to February 2021, and then a sharp decline in March and April, and then generally increased again through the rest of the period. Caustic soda prices showed less variation and generally declined in 2018 and 2019, fluctuated in 2020, and then increased in January-September 2021 to their highest level of the period.

Two U.S. producers reported that raw materials prices had increased since January 1, 2018 and one reported that they fluctuated. Importer *** reported that raw material prices declined and importers *** and *** reported they fluctuated.

Figure V-1
Raw materials: Price indices of propylene and caustic soda

* * * * * * *

Source: Petitioner's postconference brief, exhibit 20.

Note: ***.

Table V-1
Raw materials: Price indices of propylene and caustic soda

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

Table continued.

Table V-1 Continued
Raw materials: Price indices of propylene and caustic soda

Month	Propylene	Caustic soda
January 2021	***	***
February 2021	***	***
March 2021	***	***
April 2021	***	***
May 2021	***	***
June 2021	***	***
July 2021	***	***
August 2021	***	***
September 2021	***	***

Source: Petitioner's postconference brief, exhibit 20.

U.S. inland transportation costs

U.S. producers reported both arranging transport to their customers and that customers arrange transport. Importers reported that they typically arrange transportation to their customers. U.S. producer *** reported that its U.S. inland transportation costs were *** percent of the total cost of SAP and *** reported *** percent.[5] Importer ***.

Pricing practices

Pricing methods

SAP is typically sold via contracts lasting a year or longer that specify price and expected volumes. Petitioner stated that large customers negotiate contracts on a global basis but ***.[6] LG Chem stated prices are negotiated for global supply, that pricing does not differ based on the product's destination market, and that it does not determine where the SAP is sent.[7] Petitioner stated that prices do not differ by product characteristics, but rather vary by customer, reflecting different formula prices.[8]

Most U.S. producers and importers reported setting prices using transaction-by-transaction negotiations and contracts (table V-2).

[5] ***.
[6] Petitioner's postconference brief, p. 16, and exhibit 1, p. 9.
[7] LG Chem's postconference brief, p. 7.
[8] ***. Petitioner's postconference brief, exhibit 1, p. 25.

Table V-2
SAP: U.S. producers' and importers' reported price setting methods, count

Method	U.S. producers	U.S. importers
Transaction-by-transaction	3	5
Contract	3	4
Set price list	0	0
Other	0	0
Responding firms	3	5

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.

Most U.S. shipments were made on a long-term contract basis (table V-3). U.S. producers reported that *** percent of their 2020 sales were on a long-term contract basis and *** percent were on an annual contract basis. ***.

Table V-3
SAP: U.S. producers' and importers' shares of U.S. commercial 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.

*** U.S. producers reported that their contracts fix both price and quantity and all three reported that prices are indexed to raw material prices.[9] ***. *** U.S. producers reported

[9] Petitioner stated that although contracts may legally fix prices and quantities, U.S. producers have at times been willing to negotiate pricing because of the importance of large customers to their sales. "The consolidation of major U.S. customers prevents realistic enforcement of contract obligations. For example, agreements with P&G do not have a mechanism permitting mid-contract renegotiation. However, because large customers account for a substantial portion of domestic industry sales, a key part of U.S. producers' strategy is to maintain good relationships with these customers on a long-term basis. Legally, U.S. producers may have a basis for rejecting requests to renegotiate agreed prices but doing this could lead to the long-term loss of major customers to Korean producers offering dumped SAP. Thus, U.S. producers have at times had to accept mid-contract price reductions rather than pursue contract enforcement." Petitioner's postconference brief, exhibit 1, p. 11.

that their SAP contract prices are indexed to HIS Markit published prices of propylene and caustic soda, with ***.[10]

***. It added, however, that for the most part, raw material prices globally often follow similar trends, and thus trends for SAP prices globally will tend to be similar."[11] ***.

***.[12] ***

[10] ***.

[11] LG Chem's postconference brief, Responses to Staff Questions, p. 6.

[12] ***.

***.

Sales terms and discounts

*** U.S. producers typically use f.o.b. pricing and *** also uses delivered pricing. Importers *** typically quote prices on a *** basis. ***. ***.

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 SAP products shipped to unrelated U.S. customers during January 2018 to September 2021.[13]

Product 1.-- Permeable and fast SAP for thin or ultra-thin hygiene products, including the following parameters:
- vortex speed of 45 seconds or less;
- gel bed permeability ("GBP") of 30 or greater; and
- centrifuge retention capacity ("CRC") within a range of 27 to 33 g/g.

Product 2.-- Balanced absorption under pressure ("AAP") SAP for balanced to thin hygiene products, including the following parameters:
- AAP 0.7 psi within a range of 18 to 24 g/g;
- GBP of less than 10; and
- CRC within a range of 34 to 42 g/g.

Product 3.-- Permeable and Pressure-resistant SAP for thin or ultra-thin hygiene products, including the following parameters:
- AAP under 0.7 psi ("AAP") within a range of 20 to 30 g/g; and
- CRC within a range of 26 to 33 g/g.

[13] Each pricing product can include several grades produced by each manufacturer. Petitioner's postconference brief, exhibit 1, p. 26.

Three U.S. producers and one importer provided usable pricing data for sales of the requested products, although not all firms reported pricing for all products for all quarters.[14] [15] Pricing data reported by these firms accounted for approximately 89.7 percent of U.S. producers' U.S. shipments of SAP and *** percent of reported U.S. shipments of subject imports in 2020.[16] Price data for products 1-3 are presented in tables V-4 to V-6 and figures V-2 to V-4.

***.

[14] 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.

[15] ***.

***." LG Chem's postconference brief, p. 30.

***. LG Chem's postconference brief, exhibit 5.

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

Table V-4
SAP: Weighted-average f.o.b. prices and quantities of domestic and imported product 1 and margins of underselling/(overselling), by quarter

Price in dollars per metric tons dry weight, quantity in metric tons dry weight, margin in percent.

Period	US price	US quantity	South Korea price	South Korea quantity	South Korea 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: Permeable and fast SAP for thin or ultra-thin hygiene products, including the following parameters:

- vortex speed of 45 seconds or less;
- gel bed permeability (“GBP”) of 30 or greater; and
- centrifuge retention capacity (“CRC”) within a range of 27 to 33 g/g.

Table V-5
SAP: Weighted-average f.o.b. prices and quantities of domestic and imported product 2 and margins of underselling/(overselling), by quarter

Price in dollars per metric tons dry weight, quantity in metric tons dry weight, margin in percent.

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

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

Note: Product 2: Balanced absorption under pressure (“AAP”) SAP for balanced to thin hygiene products, including the following parameters:

- AAP 0.7 psi within a range of 18 to 24 g/g;
- GBP of less than 10; and
- CRC within a range of 34 to 42 g/g.

Table V-6
SAP: Weighted-average f.o.b. prices and quantities of domestic and imported product 3 and margins of underselling/(overselling), by quarter

Price in dollars per metric tons dry weight, quantity in metric tons dry weight, margin in percent.

Period	US price	US quantity	South Korea price	South Korea quantity	South Korea 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: Permeable and Pressure-resistant SAP for thin or ultra-thin hygiene products, including the following parameters:

- AAP under 0.7 psi (“AAP”) within a range of 20 to 30 g/g; and
- CRC within a range of 26 to 33 g/g.

Figure V-2
SAP: Weighted-average prices and quantities of domestic and imported product 1, by quarter

Price of product 1

Volume of product 1

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

Note: Product 1: Permeable and fast SAP for thin or ultra-thin hygiene products, including the following parameters:

- vortex speed of 45 seconds or less;
- gel bed permeability ("GBP") of 30 or greater; and
- centrifuge retention capacity ("CRC") within a range of 27 to 33 g/g.

Figure V-3
SAP: Weighted-average prices and quantities of domestic and imported product 2, by quarter

Price of product 2

* * * * * * *

Volume of product 2

* * * * * * *

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

Note: Product 2: Balanced absorption under pressure ("AAP") SAP for balanced to thin hygiene products, including the following parameters:

- AAP 0.7 psi within a range of 18 to 24 g/g;
- GBP of less than 10; and
- CRC within a range of 34 to 42 g/g.

Figure V-4
SAP: Weighted-average prices and quantities of domestic and imported product 3, by quarter

Price of product 3

* * * * * * *

Volume of product 3

* * * * * * *

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

Note: Product 3: Permeable and Pressure-resistant SAP for thin or ultra-thin hygiene products, including the following parameters:

- AAP under 0.7 psi ("AAP") within a range of 20 to 30 g/g; and
- CRC within a range of 26 to 33 g/g.

Price trends

In general, U.S. producers' prices increased during January 2018 to September 2021, with declines in 2019 into the second or third quarter of 2020 and then increases into 2021. Subject import prices followed a similar trend but were lower at the end of the period than they were at the beginning. Table V-7 summarizes the price trends, by country and by product. As shown in the table, domestic price increases ranged from 2.0 to 5.5 percent during January 2018 to September 2021 while import price decreases were *** to *** percent. Figure V-5 and table V-8 shows indexed U.S. producer and importer prices for products 1-3, where available, with indexed prices for raw materials.

Table V-7
SAP: Summary of price data, by product and source

Quantity in metric tons dry weight, price in dollars per metric tons dry weight

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	South Korea	***	***	***	***	***	***	***
Product 2	United States	***	***	***	***	***	***	***
Product 2	South Korea	***	***	***	***	***	***	***
Product 3	United States	***	***	***	***	***	***	***
Product 3	South Korea	***	***	***	***	***	***	***

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

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

Figure V-5
SAP and raw materials: Indexed U.S. producer and importer SAP prices and raw material prices, by quarter

* * * * * * *

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

Note: ***.

Table V-8
SAP and raw materials: Indexed U.S. producer and importer SAP prices and raw material prices, by quarter

Period	Product 1 (U.S. producers)	Product 2 (U.S. producers)	Product 3 (U.S. producers)	Product 1 (U.S. importers)	Product 3 (U.S. importers)	Propylene	Caustic soda
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 and ***.

Note: ***.

Price comparisons

As shown in table V-9, prices for product imported from South Korea were below those for U.S.-produced product in *** of *** instances (*** MT); margins of underselling ranged from *** to *** percent. In the remaining *** instances (*** MT), prices for product from South Korea were between *** and *** percent above prices for the domestic product.

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

Quantity in metric tons dry weight; margin in percent

Product	Type	Number of quarters	Quantity	Average margin	Minimum margin	Maximum margin
Product 1	Underselling	***	***	***	***	***
Product 2	Underselling	***	***	***	***	***
Product 3	Underselling	***	***	***	***	***
All products	Underselling	***	***	***	***	***
Product 1	Overselling	***	***	***	***	***
Product 2	Overselling	***	***	***	***	***
Product 3	Overselling	***	***	***	***	***
All products	Overselling	***	***	***	***	***

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

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

Lost sales and lost revenue

The Commission requested that U.S. producers of SAP report purchasers with which they experienced instances of lost sales or revenue due to competition from imports of SAP from Korea during January 2018 to September 2021. All three U.S. producers reported that they had to reduce prices and that they had lost sales. U.S. producers identified four firms with which they lost sales or revenue.

U.S. producer ***.[17] ***.[18] ***.[19]

Staff received responses from all four purchasers named in the allegations. Responding purchasers reported purchasing *** MT of SAP during January 2018 to September 2021 (table V-10). During 2020, responding purchasers purchased *** percent from U.S. producers, *** percent from South Korea, and *** percent from nonsubject countries.

[17] ***.
***.
***.
[18] ***.
[19] ***.

Table V-10
SAP: Purchasers' reported purchases

Quantity in metric tons dry weight, change in share in percentage point

Firm	Domestic quantity	Subject quantity	All other quantity	Change in domestic share (2018-20)	Change in subject share (2018-20)
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
All firms	***	***	***	***	***

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

Note: All other is all other import sources; no firm reported purchases from unknown sources. ***. Change is the percentage point change in the share of the firm's total purchases of domestic and/or subject country imports between first and last years.

Purchasers were asked about changes in their purchasing patterns from different sources since 2018. Of the responding purchasers, one reported decreased purchases from domestic producers, one reported increased purchases, and two reported no change.[20]

***.

***.

***. ***

[20] None of the purchasers indicated that they did not know the source of the SAP they purchased.

***.

Of the four responding purchasers, two reported that, since 2018, they had purchased imported SAP from Korea instead of U.S.-produced product. Two of these purchasers reported that subject import prices were lower than U.S.-produced product, and one of these purchasers reported that price was a primary reason for the decision to purchase imported product rather than U.S.-produced product. One purchaser estimated the quantity of SAP from Korea purchased instead of domestic product; it reported a quantity of *** MT (table V-11). Purchasers identified ongoing product development to meet the customer's performance standards, high level of product quality, and a secure and redundant supply chain as non-price reasons for purchasing imported rather than U.S.-produced product.

None of the four responding purchasers reported that U.S. producers had reduced prices in order to compete with lower-priced imports from Korea. One purchaser reported that U.S. producers had not reduced prices and three reported that they did not know.

Table V-11
SAP: Purchasers' responses to purchasing subject imports instead of domestic product

Quantity in metric tons dry weight

Firm	Purchased subject imports instead of domestic	Imports priced lower	Choice based on price	Quantity	Narrative on reasons for purchasing imports
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***.
***	***	***	***	***	***
All firms	Yes--2; No--2	Yes--2; No--0	Yes--1; No--1	***	

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

Note: ***.

In responding to the lost sales lost revenue survey, some purchasers provided additional information on purchases and market dynamics.

***.

***.[21] ***.

[21] ***.

Part VI: Financial experience of U.S. producers

Background[1]

Three U.S. producers, BASF, Evonik, and NSAI, provided usable financial results on their SAP product operations.[2] Each of the three U.S. producers reported financial data on a calendar-year basis,[3] and each of the responding U.S. producers provided their financial data on the basis of GAAP.[4] BASF, Evonik, and NSAI reported commercial sales and exports; Evonik also reported transfers to related firms.[5] The trade and financial data reconciled.

Evonik Superabsorber LLC was created on July 1, 2021 from its parent, Evonik Corporation. Changes that resulted from the restructuring included a ***.[6]

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

[2] Each firm reported selling only sodium polyacrylate, described as the most predominant form of SAP. U.S. producers' questionnaires, sections II-9 and II-10 and petitioner's postconference brief, p. 5.

[3] ***.

[4] ***.

[5] Evonik's ***. Evonik's total trade and financial data reconciled. The average unit value of Evonik's ***. Emails from ***, November 19 and 24, 2021.

[6] The ***. Email from ***

(*continued*...)

Figure VI-1 presents each responding firm's share of the total reported net sales quantity in 2020. As depicted in figure VI-1, ***.

Figure VI-1
SAP: Share of net sales quantity in 2020, by firm

Source: Compiled from data submitted in response to Commission questionnaires.
Note: The data used to calculate the firms' shares of total net sales quantity are located in table VI-3.

Operations on SAP

Table VI-1 presents aggregated data on U.S. producers' operations in relation to SAP, while table VI-2 presents corresponding changes in AUVs. Table VI-3 presents selected company-specific financial data.

(…*continued*)
***, November 17, 2021.

Table VI-1
SAP: Results of operations of U.S. producers, by item and period

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

Item	Measure	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
Total net sales	Quantity	422,788	414,073	411,104	305,826	310,222
Total net sales	Value	733,321	660,526	544,101	406,187	500,114
Raw material costs	Value	521,370	438,949	358,001	269,546	402,184
Direct labor costs	Value	44,076	45,441	43,697	32,438	35,574
Other factory costs	Value	83,091	83,724	85,684	66,078	77,356
COGS	Value	648,537	568,114	487,382	368,062	515,114
Gross profit or (loss)	Value	84,784	92,412	56,719	38,125	(15,000)
SG&A expenses	Value	74,339	69,875	63,314	45,097	45,062
Operating income or (loss)	Value	10,445	22,537	(6,595)	(6,972)	(60,062)
Interest expense	Value	***	***	***	***	***
All other expenses and income, net	Value	***	***	***	***	***
Net income or (loss)	Value	***	***	***	***	***
Depreciation/amortization	Value	25,613	33,059	28,165	21,546	27,874
Cash flow	Value	***	***	***	***	***
Raw material costs	Ratio to NS	71.1	66.5	65.8	66.4	80.4
Direct labor costs	Ratio to NS	6.0	6.9	8.0	8.0	7.1
Other factory costs	Ratio to NS	11.3	12.7	15.7	16.3	15.5
COGS	Ratio to NS	88.4	86.0	89.6	90.6	103.0
Gross profit	Ratio to NS	11.6	14.0	10.4	9.4	(3.0)
SG&A expense	Ratio to NS	10.1	10.6	11.6	11.1	9.0
Operating income or (loss)	Ratio to NS	1.4	3.4	(1.2)	(1.7)	(12.0)
Net income or (loss)	Ratio to NS	***	***	***	***	***

Table continued on next page.

Table VI-1 Continued
SAP: Results of operations of U.S. producers, by item and period

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

Item	Measure	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
Raw material costs	Share	80.4	77.3	73.5	73.2	78.1
Direct labor costs	Share	6.8	8.0	9.0	8.8	6.9
Other factory costs	Share	12.8	14.7	17.6	18.0	15.0
COGS	Share	100.0	100.0	100.0	100.0	100.0
Total net sales	Unit value	1,734	1,595	1,324	1,328	1,612
Raw material costs	Unit value	1,233	1,060	871	881	1,296
Direct labor costs	Unit value	104	110	106	106	115
Other factory costs	Unit value	197	202	208	216	249
Cost of goods sold	Unit value	1,534	1,372	1,186	1,204	1,660
Gross profit or (loss)	Unit value	201	223	138	125	(48)
SG&A expenses	Unit value	176	169	154	147	145
Operating income or (loss)	Unit value	25	54	(16)	(23)	(194)
Net income or (loss)	Unit value	***	***	***	***	***
Operating losses	Count	***	***	***	***	***
Net losses	Count	***	***	***	***	***
Data	Count	3	3	3	3	3

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

Note: Shares represent the share of COGS.

Table VI-2
SAP: Changes in AUVs between comparison periods

Changes in percent

Item	2018-20	2018-19	2019-20	Jan-Sep 2020-21
Total net sales	▼(23.7)	▼(8.0)	▼(17.0)	▲21.4
Raw material costs	▼(29.4)	▼(14.0)	▼(17.9)	▲47.1
Direct labor costs	▲2.0	▲5.3	▼(3.1)	▲8.1
Other factory costs	▲6.1	▲2.9	▲3.1	▲15.4
COGS	▼(22.7)	▼(10.6)	▼(13.6)	▲38.0

Table continued.

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

Changes in dollars per MTDW

Item	2018-20	2018-19	2019-20	Jan-Sep 2020-21
Total net sales	▼(411)	▼(139)	▼(272)	▲284
Raw material costs	▼(362)	▼(173)	▼(189)	▲415
Direct labor costs	▲2	▲5	▼(3)	▲9
Other factory costs	▲12	▲6	▲6	▲33
COGS	▼(348)	▼(162)	▼(186)	▲457
Gross profit or (loss)	▼(63)	▲23	▼(85)	▼(173)
SG&A expense	▼(22)	▼(7)	▼(15)	▼(2)
Operating income or (loss)	▼(41)	▲30	▼(70)	▼(171)
Net income or (loss)	▼(57)	▲21	▼(78)	▼(81)

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

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

Table VI-3
SAP: Firm-by-firm total net sales quantity, by period

Net sales quantity

Quantity in MTDW

Firm	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
BASF	***	***	***	***	***
Evonik	***	***	***	***	***
NSAI	***	***	***	***	***
All firms	422,788	414,073	411,104	305,826	310,222

Table continued.

Table VI-3 Continued
SAP: Firm-by-firm total net sales value, by period

Net sales value

Value in 1,000 dollars

Firm	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
BASF	***	***	***	***	***
Evonik	***	***	***	***	***
NSAI	***	***	***	***	***
All firms	733,321	660,526	544,101	406,187	500,114

Table continued.

Table VI-3 Continued
SAP: Firm-by-firm cost of goods sold ("COGS"), by period

COGS

Value in 1,000 dollars

Firm	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
BASF	***	***	***	***	***
Evonik	***	***	***	***	***
NSAI	***	***	***	***	***
All firms	648,537	568,114	487,382	368,062	515,114

Table continued.

Table VI-3 Continued
SAP: Firm-by-firm gross profit or (loss), by period

Gross profit or (loss)

Value in 1,000 dollars

Firm	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
BASF	***	***	***	***	***
Evonik	***	***	***	***	***
NSAI	***	***	***	***	***
All firms	84,784	92,412	56,719	38,125	(15,000)

Table continued.

Table VI-3 Continued
SAP: Firm-by-firm selling, general, and administrative ("SG&A") expenses, by period

SG&A expenses

Value in 1,000 dollars

Firm	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
BASF	***	***	***	***	***
Evonik	***	***	***	***	***
NSAI	***	***	***	***	***
All firms	74,339	69,875	63,314	45,097	45,062

Table continued.

Table VI-3 Continued
SAP: Firm-by-firm operating income or (loss), by period

Operating income or (loss)

Value in 1,000 dollars

Firm	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
BASF	***	***	***	***	***
Evonik	***	***	***	***	***
NSAI	***	***	***	***	***
All firms	10,445	22,537	(6,595)	(6,972)	(60,062)

Table continued.

Table VI-3 Continued
SAP: Firm-by-firm net income or (loss), by period

Net income or (loss)

Value in 1,000 dollars

Firm	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
BASF	***	***	***	***	***
Evonik	***	***	***	***	***
NSAI	***	***	***	***	***
All firms	7,757	16,143	(16,031)	(16,247)	(41,703)

Table continued.

Table VI-3 Continued
SAP: Firm-by-firm ratio of COGS to net sales value, by period

COGS to net sales ratio

Ratios in percent

Firm	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
BASF	***	***	***	***	***
Evonik	***	***	***	***	***
NSAI	***	***	***	***	***
All firms	88.4	86.0	89.6	90.6	103.0

Table continued.

VI-3 Continued
SAP: Firm-by-firm ratio of gross profit or (loss) to net sales value, by period

Gross profit or (loss) to net sales ratio

Ratios in percent

Firm	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
BASF	***	***	***	***	***
Evonik	***	***	***	***	***
NSAI	***	***	***	***	***
All firms	11.6	14.0	10.4	9.4	(3.0)

Table continued.

Table VI-3 Continued
SAP: Firm-by-firm ratio of SG&A expenses to net sales value, by period

SG&A expenses to net sales ratio

Ratios in percent

Firm	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
BASF	***	***	***	***	***
Evonik	***	***	***	***	***
NSAI	***	***	***	***	***
All firms	10.1	10.6	11.6	11.1	9.0

Table continued.

Table VI-3 Continued
SAP: Firm-by-firm ratio of operating income or (loss) to net sales value, by period

Operating income or (loss) to net sales ratio

Ratios in percent

Firm	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
BASF	***	***	***	***	***
Evonik	***	***	***	***	***
NSAI	***	***	***	***	***
All firms	1.4	3.4	(1.2)	(1.7)	(12.0)

Table continued.

Table VI-3 Continued
SAP: Firm-by-firm ratio of net income or (loss) to net sales value, by period

Net income or (loss) to net sales ratio

Ratios in percent

Firm	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
BASF	***	***	***	***	***
Evonik	***	***	***	***	***
NSAI	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table VI-3 Continued
SAP: Firm-by-firm unit net sales value, by period

Unit net sales value

Unit values in dollars per MTDW

Firm	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
BASF	***	***	***	***	***
Evonik	***	***	***	***	***
NSAI	***	***	***	***	***
All firms	1,734	1,595	1,324	1,328	1,612

Table continued.

Table VI-3 Continued
SAP: Firm-by-firm unit raw material cost, by period

Unit raw material costs

Unit values in dollars per MTDW

Firm	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
BASF	***	***	***	***	***
Evonik	***	***	***	***	***
NSAI	***	***	***	***	***
All firms	1,233	1,060	871	881	1,296

Table continued.

Table VI-3 Continued
SAP: Firm-by-firm unit direct labor cost, by period

Unit direct labor costs

Unit values in dollars per MTDW

Firm	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
BASF	***	***	***	***	***
Evonik	***	***	***	***	***
NSAI	***	***	***	***	***
All firms	104	110	106	106	115

Table continued.

Table VI-3 Continued
SAP: Firm-by-firm unit other factory costs, by period

Unit other factory costs

Unit values in dollars per MTDW

Firm	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
BASF	***	***	***	***	***
Evonik	***	***	***	***	***
NSAI	***	***	***	***	***
All firms	197	202	208	216	249

Table continued.

Table VI-3 Continued
SAP: Firm-by-firm unit COGS, by period

Unit COGS

Unit values in dollars per MTDW

Firm	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
BASF	***	***	***	***	***
Evonik	***	***	***	***	***
NSAI	***	***	***	***	***
All firms	1,534	1,372	1,186	1,204	1,660

Table continued.

Table VI-3 Continued
SAP: Firm-by-firm unit gross profit or (loss), by period

Unit gross profit or (loss)

Unit values in dollars per MTDW

Firm	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
BASF	***	***	***	***	***
Evonik	***	***	***	***	***
NSAI	***	***	***	***	***
All firms	201	223	138	125	(48)

Table continued.

Table VI-3 Continued
SAP: Firm-by-firm unit SG&A expenses, by period

Unit SG&A expenses

Unit values in dollars per MTDW

Firm	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
BASF	***	***	***	***	***
Evonik	***	***	***	***	***
NSAI	***	***	***	***	***
All firms	176	169	154	147	145

Table continued.

Table VI-3 Continued
SAP: Firm-by-firm unit operating income or (loss), by period

Unit operating income or (loss)

Unit values in dollars per MTDW

Firm	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
BASF	***	***	***	***	***
Evonik	***	***	***	***	***
NSAI	***	***	***	***	***
All firms	25	54	(16)	(23)	(194)

Table continued.

Table VI-3 Continued
SAP: Firm-by-firm unit net income or (loss), by period

Unit net income or (loss)

Unit values in dollars per MTDW

Firm	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
BASF	***	***	***	***	***
Evonik	***	***	***	***	***
NSAI	***	***	***	***	***
All firms	***	***	***	***	***

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

Net sales

As shown in tables VI-1 and VI-3, total net sales, by quantity, declined from 2018 to 2020, by 2.8 percent, and were higher in January-September 2021 ("interim 2021") than in January-September 2020 ("interim 2020") by 1.4 percent. Data reported by *** accounted for both the decline in sales between the full year periods and higher sales in interim 2021;[7] (***). Total net sales, by value, fell between 2018 and 2020, down by $189.2 million or 25.8 percent but were higher in interim 2021 than in interim 2020 by $93.9 million or 23.1 percent. Each of the three firms recorded lower sales values in 2020 than in 2018 and higher sales values in interim 2021 than in interim 2020, and the changes in *** data accounted for a high percentage of the total change. As shown in tables VI-2 and VI-3, the average unit values of sales for the three firms together fell by $411 per MTDW (23.7 percent) between 2018 and 2020 although unit sales values recovered and were higher in interim 2021 than in interim 2020, by $284 per MTDW or 21.4 percent. Data reported by *** accounted for much of the change in the average unit values. Differences in unit values between firms may be attributable to the different types of SAP that each firm produces. Petitioner stated that "in the United States, BASF produces *** SAP products, Evonik produces *** SAP products, and NSAI produces *** SAP products."[8] Petitioner also noted that "***"

[7] ***. U.S. producers' questionnaire, section II-3a.

[8] Petitioner's postconference brief, Answers to Staff Questions, #17 and #52.

***.[9] With regard to a change in product mix, petitioner stated that some new SAP products were introduced and others were phased out during the period; petitioner also stated that a product life cycle may last from three to five years.[10]

Contract sales prices are set by formula, which "usually consists of a fixed base price element and a cost add-on for raw materials. The raw material component is periodically adjusted, based on fluctuations in published indices."[11] [12] Asked to comment on what was driving sales values lower between 2019 and 2020 and higher in interim 2021, ***.[13] *** stated that its prices are periodically adjusted to raw material indexes and the price increase in 2021 was due to increased costs of propylene and caustic soda.[14]

Industry witnesses testified to a short-lived spike in demand for SAP in reaction to COVID-19 news that lasted from March 2020 through the end of May of that year.[15] In February

[9] Petitioner's postconference brief, exh. 1, Answers to Staff Questions, #51.

[10] Petitioner's postconference brief, exh. 1, Answers to Staff Questions, #34, #52, and #53. Petitioner listed ***.

[11] Petitioner's postconference brief, p. 7. These were listed as propylene, sodium hydroxide (also called caustic soda), and natural gas. ***. U.S. producers' questionnaire, section IV-7. Contract price adjustments for raw material costs are discussed in petitioner's postconference brief, exh. 1, Answers to Staff Questions, #23.

[12] According to petitioner, a base price ***. Petitioner's postconference brief, exh. 1, Answers to Staff Questions, #23. According to P&G, base prices ***. P&G, Responses to Staff Questions, Elements of Price. See Part V for information on pricing.

[13] Email from ***, November 19, 2021.

[14] Email from ***, November 18, 2021. ***. Ibid.

[15] Conference transcript, pp. 69-70 (Terhart, Gu, and Nebel). Witnesses indicated the firms incurred some increased costs that resulted from additional safety protocols and procedures that were adopted to meet the pandemic.

2021, winter storm Uri caused interruption of the electricity grid and pipelines carrying natural gas and petrochemicals throughout the U.S. Gulf and southeast United States.[16] BASF,[17] Evonik,[18] and NSAI[19] each shut down because of raw material supply interruptions and other problems but supplied customers from inventory. Each firm resumed production after an interruption of several weeks. Evonik was also affected by Hurricane Ida, a category 4 hurricane. that hit Louisiana in between August 26 and September 4, 2021. Evonik stopped its production at Garyville, Louisiana during the storm and declared force majeure on September 3, 2021, which is still in effect.[20]

Cost of goods sold and gross profit or loss

Raw material costs, direct labor, and other factory costs accounted for *** percent of total COGS, respectively, in 2020 (table VI-1). Raw material costs accounted for a larger share of COGS in 2018 and 2019 and in interim 2021 than in 2020, and the differences were due to fluctuation in input prices of propylene, acrylic acid, and sodium hydroxide. Raw material costs fell with decreased costs of oil, derivatives of oil and natural gas, and energy products. Costs were also affected by weather-related events and rose in 2021 because of shortages of feedstock and oil-price increases. Evonik and NSAI described the effects of COVID-19 on their operations as ***. Evonik noted "***"

[16] News reports indicated that all or nearly all chemical plants shut down in response to severe cold weather that affected the Texas Gulf Coast area causing the curtailment of natural gas supplies, electricity, fuel gas, steam and other process utilities. Mrcplast.com/news-news_open 383989.html, February 19, 2021.

[17] Conference transcript, p. 70 (Nebel) and p. 72 (Amin). BASF ***. Petitioner's postconference brief, exh. 1, Answers to Staff Questions, #56 and exh. 12. BASF ***.

[18] Evonik's plants at Garyville, Louisiana, and Greensoro, North Carolina, were ***. Email from ***, November 24, 2021. Also, conference transcript, p. 70 (Terhart).

[19] NSAI reported it had the same experience as BASF. Conference transcript, p. 70 (Gu). NSAI ***. Petitioner's postconference brief, exh. 1, Answers to Staff Questions, #56.

[20] Email from ***, November 19, 2021. A witness for Evonik stated that the firm declared force majeure on shipments from Garryville, Louisiana, on September 3, 2021 and the plant sustained property damage and lost one-week's production. Evonik's supplier of raw materials has not lifted its declaration of force majeure. Conference transcript, p. 71 (Terhart).

***.[21] NSAI stated that the effects were ***.[22]

Raw material costs, the largest component of COGS, fell by 31.3 percent, from $521.4 million to $358.0 million during 2018-20 even as sales volume declined by only 2.8 percent during the same period. On an average per unit basis (per MTDW), raw material costs continuously decreased from $1,233 in 2018 to $1,060 in 2019 and $871 in 2020. As a ratio to net sales, raw material costs declined overall, from 71.1 percent in 2018 to 65.8 percent in 2020 primarily reflecting the greater decline in costs compared to revenue over the same period. Raw material costs were much higher in interim 2021 than in the period one year earlier, reflecting increased costs of propylene and related petrochemicals as well as supply and transportation difficulties. BASF's raw material costs *** percent between 2018 and 2020 compared with the raw material costs of Evonik, which ***; in interim 2021, raw material costs of ***, respectively, compared with interim 2020. Together, *** accounted for most of the changes.[23]

Table VI-4 presents raw materials, by type.

Table VI-4
SAP: Raw material costs in 2020

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

Item	Value	Unit value	Share of value
Acrylic acid	***	***	***
Sodium hydroxide (caustic soda)	***	***	***
Initiators, crosslinkers, neutralizers	***	***	***
Other material inputs	***	***	***
All raw materials	358,001	871	100.0

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

Note: For names of specific inputs used as initiators, crosslinkers, neutralizers, and other material inputs, see U.S. producers' questionnaire, section III-9c. Also see petitioner's postconference brief, answers to staff questions, #4.

[21] U.S. producers' questionnaire response, sections III-18 and II-2b.

[22] U.S. producers' questionnaire response, section III-18.

[23] The reported *** in each period for which data were collected (table VI-3) and may have varied due to the product mix of each firm and the raw material inputs and timing of purchases by each firm. In response to a question by staff, ***. Email from ***, November 19, 2021.

The two primary components of SAP, comprising over *** percent of the product, are acrylic acid and sodium hydroxide, with propylene as a precursor to making acrylic acid and glacial acrylic acid ("GAA").[24] GAA is converted to polyacrylic acid in a continuous polymerization process, during which reaction initiators are added in very dilute concentrations, the acid is heated, and crosslinking agents are added in low concentrations.[25] The acid is partially neutralized with sodium hydroxide (which maintains the polymer in a dissolved state) to produce SAP as a viscous and rubbery gel, which is cleaved to average particle sizes of 1 to 3 centimeters and transported for drying to obtain a powder. The powder is ground and sieved to obtain the desired particle size before surface crosslinking. The powder may undergo further heating and further treatments could be applied to develop desired characteristics.[26] See Part I for a description of the production process.

Direct labor costs, accounting for the smallest share of total COGS, decreased irregularly by 0.9 percent from 2018 to 2020 but were higher in interim 2021 than in interim 2020 by 9.7 percent. On an average per unit basis, direct labor costs increased irregularly from $104 in 2018 to $106 in 2020 and were higher in interim 2021 at $115 than in interim 2020 when they were $106. As a ratio to net sales, direct labor costs increased from 6.0 percent in 2018 to 8.0 percent in 2020 and each firm reported a higher ratio between the full yearly periods. In contrast, *** in interim 2021 while ***. The overall ratio of direct labor to net sales revenue was lower in interim 2021 than in interim 2020 (7.1 percent compared with 8.0 percent).

Other factory costs, accounting for the second largest share of total COGS, increased by 3.1 percent from $83.1 million in 2018 to $85.7 million in 2020 and were greater in interim 2021 at $77.4 million than in interim 2020 when they were $66.1 million, a difference of 17.1 percent. On an average per unit basis, other factory costs increased from $197 in 2018 to $202 in 2019 and $208 in 2020 and were much higher in interim 2021 at $249 than they were in

[24] Propylene is oxidized to make crude acrylic acid, which, in turn, is purified by distillation or chrstallization to produce glacial acrylic acid ("GAA"). ***. Reportedly, ***. Evonik purchases acrylic acid through its parent company from Dow Chemical. Email from ***, November 18, 2021. Petitioner's counsel stated that ***. Email from ***, November 2, 2021.

[25] Petitioner's postconference brief, Answers to Staff Questions, #4 (common inputs).

[26] Petition, p. 5.

interim 2020 at $216. The increase in costs and per-unit costs reflected ***[27] and the decrease in net sales quantities between 2018 and 2020. Costs were higher and increased to a greater extent than did sales quantities in interim 2021 compared with interim 2020. As a ratio to net sales, other factory costs increased by 4.4 percentage points between 2018 and 2020, from 11.3 percent to 15.7 percent between the two yearly periods but were lower in interim 2021 (15.5 percent) than in interim 2020 (16.3 percent).[28]

Overall total COGS declined by 24.8 percent from 2018 to 2020, from $648.5 million to $487.4 million, primarily due to the decrease in raw material costs during the same period. Total COGS were 40.0 percent higher in interim 2021 at $515.1 million than in interim 2020, at 368.1 million, again, primarily due to raw material cost increases. *** values of total COGS throughout 2018 to 2020 and higher COGS in interim 2021 than in interim 2020. On an average per unit basis, COGS continuously declined from $1,534 in 2018 to $1,186 in 2020 and was $1,660 in interim 2021 compared with $1,204 in interim 2020. The COGS to net sales ratio increased from 88.4 percent in 2018 to 89.6 percent in 2020 and was 103.0 percent in interim 2021 compared with 90.6 percent in interim 2020.

As seen in table VI-1, total gross profit fell irregularly from 2018 ($84.8 million) to 2020 ($56.7 million) and was a negative $15.0 million in interim 2021 compared with a profit of $38.1 million in interim 2020.[29] Reflecting the underlying values and relationship between COGS and quantity of net sales, on an average unit value basis, gross profit fell irregularly from $201 in

[27] Between 2018 and 2020, ***. ***. Email from ***, December 7, 2021.
[28] ***.
[29] Between 2018 and 2020, ***.

2018 to $138 in 2020 and was a negative $48 in interim 2021 compared with a positive $125 in interim 2020. Reflecting the underlying values and relationship between COGS and the value of net sales, the ratio of gross profit to net sales declined irregularly from 11.6 percent in 2018 to 10.4 percent in 2020 and was a negative 3.0 percent in interim 2021 compared with a positive 9.4 percent in interim 2020.

SG&A expenses and operating income or loss

U.S. producers' SG&A expenses decreased by 14.8 percent from 2018 ($74.3 million) to 2020 ($63.3 million) and were slightly lower (0.1 percent) in interim 2021 ($45.1 million) than in interim 2020 ($45.1 million).[30] The corresponding SG&A expense ratio (total SG&A expenses divided by total sales value) increased from 10.1 percent in 2018 to 11.6 percent in 2020 and was 9.0 percent in interim 2021 compared to 11.1 percent in interim 2020. The increasing ratio reflected the greater decline in sales value compared with the decline in SG&A expenses. The average unit value of SG&A expenses declined from $176 in 2018 to $154 in 2020 and was $145 in interim 2021 compared with $147 in interim 2020. ***.[31]

As presented in table VI-1, U.S. producers' operating income markedly increased from $10.4 million in 2018 to $22.5 million in 2019 before falling to a loss of $6.6 million in 2020. In interim 2021, the operating loss of $60.1 million was much greater than the operating loss in interim 2020 of $7.0 million. The operating income ratio (operating income or loss to total net sales) followed the underlying values of each, increasing from 1.4 percent in 2018 to 3.4 percent in 2019 before declining to a loss of 1.2 percent in 2020. The loss ratio of 12.0 percent in interim 2021 was much greater than the loss ratio of 1.7 percent in interim 2020. The trend

[30] In interim 2021, ***. U.S. producers' questionnaire, sections III-9a and III-10. Staff reclassified the amount, $***, from SG&A expenses to other income (see footnote 36 in this section of the report).

[31] As shown in table VI-3 ***. Email from ***, November 24, 2021.

of unit value of operating income or loss was similar to that of the underlying values of net sales quantity and operating profitability.[32]

All other expenses and net income or loss

Interest expense was reported by ***. Total interest expense declined from $*** in 2018 to $***, and $*** in 2020; it was $*** reported in interim 2020.[33] Other expense or other income was reported by each of the three firms. BASF ***.[34] Evonik ***.[35] NSAI ***.[36] Interest expense and all other expenses together steadily increased from $*** in 2018 to $*** in 2019 and to $*** in 2020. It was a net expense of $*** in interim 2020 but net income of $*** in interim 2021.

[32] As shown in table VI-3, ***.
[33] ***. Email from ***, December 3, 2021.
[34] ***. U.S. producers' questionnaire, section III-10 and email from ***, November 22, 2021.
[35] ***. U.S. producers' questionnaire, section III-10.
[36] ***. Staff reclassified this to other income.

Based on the changes in operating income/(loss) and other expenses, net income increased by *** between 2018 and 2019, from $*** to $*** before falling to a loss of $*** in 2020; the loss in interim 2021 of $*** was much greater than the loss of $*** in the same period one year earlier. The ratio of net income/(loss) to sales following the trend of the underlying data; it increased from *** percent to *** percent between 2018 and 2019 before falling to a negative *** percent in 2020. The net income ratio was a negative *** percent in interim 2021 compared with a negative *** percent in interim 2020. Cash flow (calculated as the sum of net income and depreciation) followed the trend of net income, irregularly decreasing from 2018 to 2020 and was a negative number in interim 2021 (cash flow was positive in interim 2020 while the industry reported a net loss in that period).

A variance analysis is not shown due to the variety of product mixes and cost structures among the reporting firms. As noted earlier, petitioner testified regarding the grades each firm produced, that raw material and energy costs may vary between grades, and that a product life cycle may last from three to five years. Also, petitioner affirmed that product mix changed over the period for which data were gathered and provided an example of a change in grade by ***.[37]

Capital expenditures and research and development expenses

Table VI-5 presents capital expenditures, by firm, and table VI-7 presents R&D expenses, by firm. Tables VI-6 and VI-8 present the firms' narrative explanations of the nature, focus, and significance of their capital expenditures and R&D expenses, respectively. All three firms reported capital expenditures. Total capital expenditures increased irregularly by *** percent from $*** in 2018 to $*** in 2020. They were *** percent less in interim 2021 at $*** than in interim 2020 when total capital expenditures were $***. As shown by the data in table VI-5 and the narratives in table VI-6, data reported by *** accounted for the majority of capital expenditures in 2020 and both interim periods while those of *** accounted for the majority in 2018 and 2019. R&D expenses decreased by *** percent between 2018 ($***) and 2020 ($***); R&D expenses were *** percent lower in interim 2021 ($*** compared to interim 2020 ($***).

[37] Petitioner's postconference brief, exh. 1, Answers to Staff Questions, #51, #52, and #53.

Table VI-5
SAP: U.S. producers' capital expenditures, by firm and period

Value in 1,000 dollars

Firm	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
BASF	***	***	***	***	***
Evonik	***	***	***	***	***
NSAI	***	***	***	***	***
All firms	***	***	***	***	***

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

Table VI-6
SAP: Narrative descriptions of U.S. producers' capital expenditures, by firm

Firm	Narrative on capital expenditures
BASF	***
Evonik	***
NSAI	***

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

Table VI-7
SAP: U.S. producers' R&D expenses, by firm and period

Value in 1,000 dollars

Firm	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
BASF	***	***	***	***	***
Evonik	***	***	***	***	***
NSAI	***	***	***	***	***
All firms	***	***	***	***	***

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

Table VI-8
SAP: Narrative descriptions of U.S. producers' R&D expenses, by firm

Firm	Narrative on R&D expenses
BASF	***
Evonik	***
NSAI	***

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

Assets and return on assets

Table VI-9 presents data on the U.S. producers' total assets while table VI-10 presents their operating ROA.[38] Table VI-11 presents U.S. producers' narrative responses explaining their major asset categories and any significant changes in asset levels over time. The U.S. producers' total net assets decreased by 7.6 percent, from $634.9 million in 2018 to $586.4 million in 2020. The calculated ROA declined from 1.6 percent in 2018 to negative 1.1 percent in 2020.

Table VI-9
SAP: U.S. producers' total net assets, by firm and period

Value in 1,000 dollars

Firm	2018	2019	2020
BASF	***	***	***
Evonik	***	***	***
NSAI	***	***	***
All firms	634,898	604,750	586,426

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

Table VI-10
SAP: U.S. producers' ROA, by firm and period

Ratio in percent

Firm	2018	2019	2020
BASF	***	***	***
Evonik	***	***	***
NSAI	***	***	***
All firms	1.6	3.7	(1.1)

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

Table VI-11
SAP: Narrative descriptions of U.S. producers' total net assets, by firm

Firm	Narrative on assets
BASF	***
Evonik	***
NSAI	***

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

[38] 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.

Capital and investment

The Commission requested U.S. producers of SAP to describe any actual or potential negative effects of imports of SAP from South Korea on their firms' growth, investment, ability to raise capital, development and production efforts, or the scale of capital investments. Table VI-12 presents the number of firms reporting an impact in each category and table VI-13 provides the U.S. producers' narrative responses.

Table VI-12
SAP: Count of firms indicating actual and anticipated negative effects of imports from South Korea on investment, growth, and development since January 1, 2018, by effect

Number of firms reporting

Effect	Category	Count
Cancellation, postponement, or rejection of expansion projects	Investment	2
Denial or rejection of investment proposal	Investment	0
Reduction in the size of capital investments	Investment	1
Return on specific investments negatively impacted	Investment	2
Other investment effects	Investment	2
Any negative effects on investment	Investment	3
Rejection of bank loans	Growth	1
Lowering of credit rating	Growth	0
Problem related to the issue of stocks or bonds	Growth	0
Ability to service debt	Growth	1
Other growth and development effects	Growth	3
Any negative effects on growth and development	Growth	3
Anticipated negative effects of imports	Future	3

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

Table VI-13
SAP: Narratives relating to actual and anticipated negative effects of imports from South Korea on investment, growth, and development, since January 1, 2018

Item	Firm name and narrative on impact of imports
Cancellation, postponement, or rejection of expansion projects	***
Cancellation, postponement, or rejection of expansion projects	***
Reduction in the size of capital investments	***
Return on specific investments negatively impacted	***
Return on specific investments negatively impacted	***
Other negative effects on investments	***
Other negative effects on investments	***
Rejection of bank loans	***
Lowering of credit rating	***
Problem related to the issue of stocks or bonds	***
Ability to service debt	***
Ability to service debt	***

Table continued.

Table VI-13 Continued
SAP: Narratives relating to actual and anticipated negative effects of imports from South Korea on investment, growth, and development, since January 1, 2018

Item	Firm name and narrative on impact of imports
Other effects on growth and development	***
Other effects on growth and development	***
Other effects on growth and development	***
Anticipated effects of imports	***
Anticipated effects of imports	***
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 volume and pricing of imports of the subject merchandise is presented in *Parts IV* and *V* of this report; and information on the effects of imports of the subject merchandise on U.S. producers' existing development and production efforts is presented in *Part VI*. Information on inventories of the subject merchandise; foreign producers' operations, including the potential for "product-shifting;" any other threat indicators, if applicable; and any dumping in third-country markets, follows. Also presented in this section of the report is information obtained for consideration by the Commission on nonsubject countries.

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

The industry in South Korea

The Commission issued foreign producers' or exporters' questionnaires to two firms believed to produce and/or export SAP from South Korea.[3] Usable responses to the Commission's questionnaire were received from one firm: LG Chem. This firm's exports to the United States accounted for *** of U.S. imports of SAP from South Korea in 2020.[4] According to estimates requested of the responding producers in South Korea, the production of SAP in South Korea reported in questionnaires accounts for approximately *** percent of overall production of SAP in South Korea.[5] Table VII-1 presents information on the SAP operations of the responding producer and exporter in South Korea.

Table VII-1
SAP: Summary data for LG Chem's production and exports, 2020

Firm	Production (metric tons dry weight)	Share of reported production (percent)	Exports to the United States (metric tons dry weight)	Share of reported exports to the United States (percent)	Total shipments (metric tons dry weight)	Share of firm's total shipments exported to the United States (percent)
LG Chem	***	***	***	***	***	***

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

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

[4] In its questionnaire response, ***. *** foreign producer questionnaire response, section II-6b.

[5] LG Chem indicated that ***. Email correspondence with ***, November 19, 2021.

Changes in operations

As presented in table VII-2 LG Chem reported *** operational and organizational changes since January 1, 2018.

Table VII-2
SAP: Reported changes in operations by LG Chem, since January 1, 2018

Item	Firm name and accompanying narrative response
Expansions	***

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

Operations on SAP

Table VII-3 presents information on the SAP operations of LG Chem. During 2018-20, LG Chem's capacity increased by *** percent, and during the interim periods ***. During 2018-20, LG Chem's production *** increased by *** percent overall,[6] but was lower by *** percent during Interim 2021 than during interim 2020. During 2018-20, LG Chem's capacity utilization decreased by *** percentage points, and was lower by *** percentage points during interim 2021 than in interim 2020. During 2018-20, LG Chem's end-of-period inventories *** increased by *** percent, and were higher during interim 2021 than in interim 2020 by *** percent.

Home market shipments decreased during 2018-20, but were higher in interim 2021 than in Interim 2020. During 2018-20, LG Chem's exports to the United Sates increased by *** percent, and were higher in interim 2021 than in interim 2020 by *** percent.[7] LG Chem's exports to all other markets (shown in more detail in table VII-4) increased by *** percent during 2018-20, but were lower in interim 2021 than in interim 2020 by *** percent. Total shipments increased by *** percent during 2018-20, but were lower in interim 2021 than in interim 2020 by *** percent, mostly because of a decrease in exports to non-U.S. markets.

The vast majority of LG Chem's shipments consisted of exports in each period. Total exports accounted for *** during each period.

[6] ***.

[7] ***. Email correspondence with ***, November 19, 2021.

Home market shipments accounted for *** of total shipments during each period. LG Chem's exports to the United States, as a share of total shipments, *** increased by *** percentage points during 2018-20, and were higher by *** percentage points during interim 2021 than in interim 2020. Exports to the United States, as a share of total shipments, *** in each period, although the share was higher in 2020 than in 2018. The share of exports to all other markets accounted for *** each period.

Projections for LG Chem's 2021 and 2022's capacity and production ***, and ***.

Table VII-3
SAP: Data for producer LG Chem, by period

Quantity in metric tons, dry weight; ratio in percent

Item	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021	Project-ion 2021	Project-ion 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 on next page.

Table VII-3--Continued
SAP: Data for producer LG Chem, by period

Shares and ratios in percent

Item	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021	Project-ion 2021	Project-ion 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 “---“.

Table VII-4 presents ***exports to markets other than the United States. In addition to its exports to the United States, ***.[8] During 2020, ***.[9] During 2019 and 2020, ***. ***.

[8] Staff requested the additional information from ***.

[9] In the "Other" market for exports of SAP from Korea during 2020, an additional *** were exported to European countries, including ***. Email correspondence with ***, November 30, 2021.

Table VII-4
SAP: *'s other export markets**

Quantity in metric tons, dry weight; shares in percent

Market	Measure	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
***	Quantity	***	***	***	***	***
***	Quantity	***	***	***	***	***
***	Quantity	***	***	***	***	***
***	Quantity	***	***	***	***	***
***	Quantity	***	***	***	***	***
***	Quantity	***	***	***	***	***
***	Quantity	***	***	***	***	***
***	Quantity	***	***	***	***	***
***	Quantity	***	***	***	***	***
***	Quantity	***	***	***	***	***
Other	Quantity	***	***	***	***	***
Exports to other markets	Quantity	***	***	***	***	***
***	Share of quantity	***	***	***	***	***
***	Share of quantity	***	***	***	***	***
***	Share of quantity	***	***	***	***	***
***	Share of quantity	***	***	***	***	***
***	Share of quantity	***	***	***	***	***
***	Share of quantity	***	***	***	***	***
***	Share of quantity	***	***	***	***	***
***	Share of quantity	***	***	***	***	***
***	Share of quantity	***	***	***	***	***
***	Share of quantity	***	***	***	***	***
Other	Share of quantity	***	***	***	***	***
Exports to other markets	Share of quantity	***	***	***	***	***

Source: Email correspondence with ***, November 19th and 30th, 2021.

Alternative products

*** produced other products on the same equipment and machinery used to produce SAP.

Exports

According to GTA, the leading export markets for acrylic polymers nesoi, in primary forms from South Korea are China and the United States (table VII-5). During 2020, the United States was the second largest export market for acrylic polymers nesoi, in primary forms from South Korea, accounting for 8.0 percent, preceded by China, accounting for 30.5 percent.

Table VII-5
Acrylic Polymer Nesoi, in primary forms: Exports from South Korea, 2018-20

Quantity in metric tons, dry weight; value in 1,000 dollars

Destination market	Measure	2018	2019	2020
United States	Quantity	43,584	44,313	75,065
China	Quantity	212,081	220,675	285,387
Turkey	Quantity	31,507	62,757	67,390
Germany	Quantity	61,443	83,400	49,987
Brazil	Quantity	24,314	34,234	31,203
Vietnam	Quantity	21,855	28,263	28,888
Mexico	Quantity	31,863	48,125	28,618
Poland	Quantity	24,797	18,975	28,516
Russia	Quantity	17,084	30,188	26,524
All other destination markets	Quantity	266,104	305,246	314,312
All destination markets	Quantity	734,632	876,178	935,887
United States	Value	72,442	70,160	95,824
China	Value	451,404	393,649	485,799
Turkey	Value	46,507	79,005	75,286
Germany	Value	92,286	108,419	59,535
Brazil	Value	34,867	47,572	38,001
Vietnam	Value	43,063	56,331	52,925
Mexico	Value	47,559	62,295	35,883
Poland	Value	31,316	22,098	29,910
Russia	Value	26,220	41,193	34,099
All other destination markets	Value	473,393	495,923	459,326
All destination markets	Value	1,319,056	1,376,645	1,366,588

Table continued.

Table VII-5--Continued
Acrylic Polymer Nesoi, in primary forms: Exports from South Korea, 2018-20

Unit values in dollars per MTDW; Shares in percent

Destination market	Measure	2018	2019	2020
United States	Unit value	1,662	1,583	1,277
China	Unit value	2,128	1,784	1,702
Turkey	Unit value	1,476	1,259	1,117
Germany	Unit value	1,502	1,300	1,191
Brazil	Unit value	1,434	1,390	1,218
Vietnam	Unit value	1,970	1,993	1,832
Mexico	Unit value	1,493	1,294	1,254
Poland	Unit value	1,263	1,165	1,049
Russia	Unit value	1,535	1,365	1,286
All other destination markets	Unit value	1,779	1,625	1,461
All destination markets	Unit value	1,796	1,571	1,460
United States	Share of quantity	5.9	5.1	8.0
China	Share of quantity	28.9	25.2	30.5
Turkey	Share of quantity	4.3	7.2	7.2
Germany	Share of quantity	8.4	9.5	5.3
Brazil	Share of quantity	3.3	3.9	3.3
Vietnam	Share of quantity	3.0	3.2	3.1
Mexico	Share of quantity	4.3	5.5	3.1
Poland	Share of quantity	3.4	2.2	3.0
Russia	Share of quantity	2.3	3.4	2.8
All other destination markets	Share of quantity	36.2	34.8	33.6
All destination markets	Share of quantity	100.0	100.0	100.0

Source: Official exports statistics under HS subheading 3906.90 as reported by Korea Trade Statistics Promotion Institute (KTSPI) in the Global Trade Atlas database, accessed November 9, 2021.

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 SAP. U.S. importers' inventories quantity from South Korea increased by *** during 2018-20 but was lower by *** percent during interim 2021 than in interim 2020. U.S. importers' inventories quantity of SAP from nonsubject sources ***, but was higher by *** during interim 2021 than in interim 2020. Total U.S. importers' inventories of SAP increased by *** percent during 2018-20, but were lower by *** percent during interim 2021 than during interim 2020. From January 1, 2018 through September 30, 2021, ***.

Table VII-6
SAP: U.S. importers' inventories, by source and by period

Quantity in metric tons dry weight; Ratios in percent

Measure	Source	2018	2019	2020	Jan-Sep 2020	Jan-Sep 2021
Inventories quantity	South Korea	***	***	***	***	***
Ratio to imports	South Korea	***	***	***	***	***
Ratio to U.S. shipments of imports	South Korea	***	***	***	***	***
Ratio to total shipments of imports	South Korea	***	***	***	***	***
Inventories quantity	Nonsubject	***	***	***	***	***
Ratio to imports	Nonsubject	***	***	***	***	***
Ratio to U.S. shipments of imports	Nonsubject	***	***	***	***	***
Ratio to total shipments of imports	Nonsubject	***	***	***	***	***
Inventories quantity	All	***	***	***	***	***
Ratio to imports	All	***	***	***	***	***
Ratio to U.S. shipments of imports	All	***	***	***	***	***
Ratio to total shipments of imports	All	***	***	***	***	***

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

U.S. importers' outstanding orders

The Commission requested importers to indicate whether they imported or arranged for the importation of SAP from South Korea after September 30, 2021. Their reported data is presented in table VII-7. *** accounted for all of the arranged imports of SAP from Korea from October 1, 2021 through September 30, 2022. *** accounted for the vast majority of nonsubject imports from October 1, 2021 through September 30, 2022. Subject imports accounted for *** percent of all arranged imports of SAP from October 1, 2021 through September 30, 2022.

Table VII-7
SAP: Quantity of U.S. importers' arranged imports, by period

Quantity in metric tons dry weight

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

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

Antidumping or countervailing duty orders in third-country markets

There are no known current antidumping or countervailing duty orders on SAP in third-country markets.[10] On November 4, 2021, at the request of Saudi Arabia, the Committee for Combating Harmful Practices in International Trade for the Arab Gulf Cooperation Council States (GCC)[11] opened an antidumping investigation on SAP from China, Japan, Belgium, Singapore, South Korea and France.[12] Previously, in 2019, the GCC investigated SAP from Chinese Taipei and Japan; however, the antidumping investigation terminated without the imposition of definitive duties.[13] On February 18, 2021, the European Commission (EC) initiated an antidumping investigation on SAP imports from South Korea. On September 17, 2021, the EC informed the interested parties it would not impose provisional measures and that the investigation would be continued.[14]

Information on nonsubject countries

Nonsubject imports held a smaller share of the market than subject imports throughout the period of investigation. Based on the Commission's questionnaire data, the market share of

---

[10] Conference transcript, pp. 127-128 (Greer), p. 173 (Fischer).

[11] The GCC member states are the Kingdom of Bahrain, the State of Kuwait, the Sultanate of Oman, the State of Qatar, the Kingdom of Saudi Arabia, and the United Arab Emirates. GCC, "Member States," accessed November 29, 2021.

[12] Saudi 24 News, "At the request of Saudi Arabia, the Gulf Cooperation Council countries open a dumping investigation against a group of countries," November 4, 2021; Argaam, "Anti-dumping probe starts on Saudi super-absorbent polymer imports," November 4, 2021; Arab News, "GCC Investigates Dumping Claims for Polymers from Five Countries into Saudi Market," November 4, 2021.

[13] The GCC's investigation was initiated on February 14, 2019 and was terminated on November 28, 2019. Global Trade Alert, "GCC: Initiation and Subsequent Termination of Antidumping Investigation on Imports of Superabsorbent Polymer from Chinese Taipei and Japan," accessed November 29, 2021; See also https://www.globaltradealert.org/state-act/36544/gcc-initiation-and-subsequent-termination-of-antidumping-investigation-on-imports-of-superabsorbent-polymer-from-chinese-taipei-and-japan; World Trade Organization, Trade Policy Review Body, "Overview of Developments in the International Trading Environment," Annual Report by the Director-General, November 30, 2020, p. 174.

[14] European Commission (EC), "Investigations: Anti-dumping, Superabsorbent Polymers, Republic of Korea," accessed November 29, 2021. Petitioner expects some duties to be imposed in the future. Conference transcript, p. 53 (Orava). Petitioner interprets the EC's pre-disclosure document issued on September 17, 2021 to indicate the EC deferred making any preliminary determination at all, affirmative or negative. Petitioners' postconference brief, Exhibit 1, Answers to Staff Questions, pp. 32-33. Definitive measures by the EC are scheduled for April 13, 2022. European Commission, "AD681—Superabsorbent Polymers," accessed November 30, 2020.

nonsubject imports ranged between *** and *** percent for full years during the period of investigation and ranged between *** and *** percent during the interim periods.[15]

Petitioner states that the primary nonsubject countries include Japan, Singapore, Belgium, and Germany.[16] The largest nonsubject supplier is Japan, which accounted for less than half the volume of imports from South Korea.[17] Respondent states that the three largest sources of imports by nonsubject country are ***, ***, and ***, with an average annual import volume of ***.[18]

The global capacity for SAP in 2020 was *** metric tons. In that same year, China (*** metric tons), Western Europe (***), Japan (***), and South Korea (***) had the largest capacity, as shown in table VII-8. Total global consumption in 2020 was *** metric tons, and the highest consuming countries, by quantity, were Western Europe, China, and the United States, as shown in table VII-9. The global average annual growth rate is projected at *** percent for 2020—2025, as shown in table VII-10.

Global consumption by end-use in 2020 was the largest in the baby diapers and training pants segment (*** percent total share), followed by adult incontinence (*** percent total share), feminine hygiene (*** percent total share), and technical and industrial use (*** percent total share), as shown in table VII-11.

The largest global producers by annual capacity in 2020 were ***, ***, ***, and ***, as shown in table VII-12.

At the global exporter level, SAP falls under the category of acrylic polymers in primary forms. In 2020, the three largest global exporters in this larger category of products were Germany (1.00 million metric tons, 13.4 percent of total share of value), South Korea (0.94 million metric tons, 12.5 percent of total share of value), and China (0.68 million pounds, 9.0 percent of total share of value), as shown in table VII-13.

---

[15] Response to Commission Questionnaire reported in the C table. Petitioner estimates that nonsubject imports held a share of the market that ranged between *** percent and *** percent between 2018 and 2020. Nonsubject import market share was *** percent in interim 2021, which was similar to the market share held by nonsubject imports in 2018. Petition, Volume I, Exhibit I-8; Petitioners' postconference brief, Exhibit I, Answers to Staff Questions, p. 14.

[16] Conference transcript, p. 65 (Greer), p. 65 (Terhart).

[17] Petitioners' postconference brief, Exhibit I, Answers to Staff Questions, p. 23.

[18] Average based on full year data only and therefore does not include 2021 year-to-date data. LG Chem's postconference brief, Answers to Staff Questions, pp. 13-15.

Table VII-8
SAP: Global capacity, 2017 and 2020, global production and net imports, 2020

Quantity in 1,000 metric tons

Region	Measure	Capacity 2017	Capacity 2020	Production 2020	Net imports 2020
United States	Quantity	***	***	***	***
Canada	Quantity	***	***	***	***
Mexico	Quantity	***	***	***	***
Central and South America	Quantity	***	***	***	***
Total Americas	Quantity	***	***	***	***
Western Europe	Quantity	***	***	***	***
Central and Eastern Europe	Quantity	***	***	***	***
Middle East	Quantity	***	***	***	***
Africa	Quantity	***	***	***	***
Total Europe, Middle East, and Africa	Quantity	***	***	***	***
Japan	Quantity	***	***	***	***
China	Quantity	***	***	***	***
South Korea	Quantity	***	***	***	***
Taiwan	Quantity	***	***	***	***
India	Quantity	***	***	***	***
Southeast Asia and Oceania	Quantity	***	***	***	***
Total Asia	Quantity	***	***	***	***
Total	Quantity	***	***	***	***

Source: IHS Markit, *Chemical Economics Handbook, Superabsorbent Polymers*, November 2020, p. 6.

Table VII-9
SAP: Global consumption, 2017 and 2020, projected, 2025

Quantity in 1,000 metric tons

Region	Measure	Consumption, 2017	Consumption, 2020	Projected consumption, 2025
United States	Quantity	***	***	***
Canada	Quantity	***	***	***
Mexico	Quantity	***	***	***
Central and South America	Quantity	***	***	***
Total Americas	Quantity	***	***	***
Western Europe	Quantity	***	***	***
Central and Eastern Europe	Quantity	***	***	***
Middle East	Quantity	***	***	***
Africa	Quantity	***	***	***
Total Europe, Middle East, and Africa	Quantity	***	***	***
Japan	Quantity	***	***	***
China	Quantity	***	***	***
South Korea	Quantity	***	***	***
Taiwan	Quantity	***	***	***
India	Quantity	***	***	***
Southeast Asia and Oceania	Quantity	***	***	***
Total Asia	Quantity	***	***	***
Total	Quantity	***	***	***

Source: IHS Markit, *Chemical Economics Handbook, Superabsorbent Polymers*, November 2020, p. 6.

Table VII-10
SAP: Global projected average annual growth rate, 2020—2025

Quantity in 1,000 metric tons

Region	Projected average annual growth rate, 2020—2025
United States	***
Canada	***
Mexico	***
Central and South America	***
Total Americas	***
Western Europe	***
Central and Eastern Europe	***
Middle East	***
Africa	***
Total Europe, Middle East, and Africa	***
Japan	***
Mainland China	***
South Korea	***
Taiwan	***
India	***
Southeast Asia and Oceania	***
Total Asia	***
Total	***

Source: IHS Markit, *Chemical Economics Handbook, Superabsorbent Polymers*, November 2020, p. 6.

Table VII-11
SAP: Global consumption by end use, 2017 and 2020, projected 2025

Quantity in 1,000 metric tons

End use	Measure	Consumption, 2017	Consumption, 2020	Projected consumption, 2025
Baby diapers and training pants	Quantity	***	***	***
Adult incontinence	Quantity	***	***	***
Feminine hygiene	Quantity	***	***	***
Technical and industrial	Quantity	***	***	***
Total	Quantity	***	***	***

Table continued.

Table VII-11—continued
SAP: Global consumption by end use, 2017 and 2020, projected shares, and current and projected average annual growth rates, 2017—2025

Shares and growth rates in percent

End use	Share of total, 2017	Share of total, 2020	Projected share of total, 2025	Average annual growth rate, 2017—2020	Projected average annual growth rate, 2020—2025
Baby diapers and training pants	***	***	***	***	***
Adult incontinence	***	***	***	***	***
Feminine hygiene	***	***	***	***	***
Technical and industrial	***	***	***	***	***
Total	***	***	***	***	***

Source: IHS Markit, *Chemical Economics Handbook, Superabsorbent Polymers*, November 2020, p. 6.

Table VII-12
SAP: Major global producers, by annual capacity, as of October 31, 2020

Quantity in 1,000 metric tons

Producer	Measure	Americas	Europe	Middle East	Japan	Main-land China	South Korea and Taiwan	Southeast Asia and Oceania	Total
***	Quantity	***	***	***	***	***	***	***	***
***	Quantity	***	***	***	***	***	***	***	***
***	Quantity	***	***	***	***	***	***	***	***
***	Quantity	***	***	***	***	***	***	***	***
***	Quantity	***	***	***	***	***	***	***	***
***	Quantity	***	***	***	***	***	***	***	***
***	Quantity	***	***	***	***	***	***	***	***
***	Quantity	***	***	***	***	***	***	***	***
***	Quantity	***	***	***	***	***	***	***	***
***	Quantity	***	***	***	***	***	***	***	***
Total	Quantity	***	***	***	***	***	***	***	***

Source: IHS Markit, *Chemical Economics Handbook, Superabsorbent Polymers*, November 2020, p. 8.

Table VII-12—Continued.
SAP: Major global producers, by annual capacity, as of October 31, 2020

Shares in percent

Producer	Share of world capacity
***	***
***	***
***	***
***	***
***	***
***	***
***	***
***	***
***	***
***	***
Total	***

Source: IHS Markit, *Chemical Economics Handbook, Superabsorbent Polymers*, November 2020, p. 8.

Table VII-13
SAP: Acrylic polymers, nesoi, in primary forms, global exports, by reporting country and period

Quantity in metric tons; Value in 1,000 dollars

Exporting country	Measure	2018	2019	2020
United States	Quantity	611,279	544,675	515,366
South Korea	Quantity	734,632	876,178	935,887
Germany	Quantity	993,860	1,024,617	1,001,911
China	Quantity	589,943	628,961	675,416
France	Quantity	697,550	693,817	647,205
Belgium	Quantity	492,755	488,425	550,700
Japan	Quantity	585,446	499,317	503,729
Netherlands	Quantity	369,574	386,629	363,054
Taiwan	Quantity	308,581	275,901	292,889
Turkey	Quantity	194,835	229,616	250,074
Malaysia	Quantity	154,612	185,715	221,710
United Kingdom	Quantity	229,055	215,824	209,812
All other exporters	Quantity	1,378,489	1,287,235	1,317,031
All reporting exporters	Quantity	7,340,611	7,336,910	7,484,784
United States	Value	1,794,001	1,634,335	1,477,014
South Korea	Value	1,319,056	1,376,645	1,366,588
Germany	Value	2,198,704	2,060,954	1,894,494
China	Value	1,059,861	1,104,978	1,109,665
France	Value	1,371,401	1,335,725	1,242,314
Belgium	Value	1,068,538	1,016,067	1,016,825
Japan	Value	1,412,652	1,193,019	1,109,119
Netherlands	Value	846,835	810,768	756,860
Taiwan	Value	581,282	485,533	467,399
Turkey	Value	239,243	255,760	250,509
Malaysia	Value	339,735	331,720	372,173
United Kingdom	Value	547,737	511,716	487,961
All other exporters	Value	2,881,900	2,630,142	2,579,892
All reporting exporters	Value	15,660,945	14,747,361	14,130,813

Table continued.

Table VII-13—Continued
SAP: Acrylic polymers, nesoi, in primary forms, global exports, by reporting country and period

Unit values in dollars per metric ton; Shares in percent

Exporting country	Measure	2018	2019	2020
United States	Unit value	2,935	3,001	2,866
South Korea	Unit value	1,796	1,571	1,460
Germany	Unit value	2,212	2,011	1,891
China	Unit value	1,797	1,757	1,643
France	Unit value	1,966	1,925	1,920
Belgium	Unit value	2,168	2,080	1,846
Japan	Unit value	2,413	2,389	2,202
Netherlands	Unit value	2,291	2,097	2,085
Taiwan	Unit value	1,884	1,760	1,596
Turkey	Unit value	1,228	1,114	1,002
Malaysia	Unit value	2,197	1,786	1,679
United Kingdom	Unit value	2,391	2,371	2,326
All other exporters	Unit value	2,091	2,043	1,959
All reporting exporters	Unit value	2,133	2,010	1,888
United States	Share of quantity	8.3	7.4	6.9
South Korea	Share of quantity	10.0	11.9	12.5
Germany	Share of quantity	13.5	14.0	13.4
China	Share of quantity	8.0	8.6	9.0
France	Share of quantity	9.5	9.5	8.6
Belgium	Share of quantity	6.7	6.7	7.4
Japan	Share of quantity	8.0	6.8	6.7
Netherlands	Share of quantity	5.0	5.3	4.9
Taiwan	Share of quantity	4.2	3.8	3.9
Turkey	Share of quantity	2.7	3.1	3.3
Malaysia	Share of quantity	2.1	2.5	3.0
United Kingdom	Share of quantity	3.1	2.9	2.8
All other exporters	Share of quantity	18.8	17.5	17.6
All reporting exporters	Share of quantity	100.0	100.0	100.0

Source: Official exports statistics under HS subheading 3906.90 as reported by various national statistical authorities in the Global Trade Atlas database, accessed November 9, 2021.

Note: The United States is shown at the top followed by the countries under investigation, with 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
86 FR 62565, November 10, 2021	*Superabsorbent Polymers From South Korea; Institution of Anti-Dumping Duty Investigation and Scheduling of Preliminary Phase Investigation*	https://www.govinfo.gov/content/pkg/FR-2021-11-10/pdf/2021-24535.pdf
86 FR 67915, November 30, 2021	*Certain Superabsorbent Polymers From the Republic of Korea: Initiation of Less-Than-Fair-Value Investigation*	https://www.govinfo.gov/content/pkg/FR-2021-11-30/pdf/2021-26017.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: Superabsorbent Polymers from South Korea

Inv. No.: 731-TA-1574 (Preliminary)

Date and Time: November 23, 2021 - 9:30 a.m.

OPENING REMARKS:

In Support of Imposition (**Stephen J. Orava**, King & Spalding LLP)
In Opposition to Imposition (**Lynn Fischer Fox**, Arnold & Porter Kaye Scholer LLP)

In Support of the Imposition of Antidumping Duty Order:

King & Spalding LLP
Washington, DC
on behalf of

Ad Hoc Coalition of American SAP Producers

Michael Terhart, Head of Global Controlling, Evonik Superabsorber, and General Manager, Evonik Superabsorber LLC

Sonja Cauble, Vice President, Global Business Management, Evonik Superabsorber, and General Manager, Evonik Superabsorber LLC

Parthiv Amin, Vice President, Business Management, Industrial Petrochemicals North America, BASF Corporation

Christina Hentges Nebel, Business Director, SAP North America, BASF Corporation

Martin Unmuessig, Head of Global Commercial Product Management, SAP, BASF SE

Catherine A. Trinkle, Deputy General Counsel, Regulatory & Environmental Law and Head of Government Affairs, BASF Corporation

In Support of the Imposition of
Antidumping Duty Order (continued):

James Gu, Chief Operating Officer, Nippon Shokubai America Industries, Inc.

Tatsunori Hayashi, Secretary & Treasurer, Nippon Shokubai America Industries, Inc.

Takashi Fukudome, Controller, Nippon Shokubai America Industries, Inc.

Eric Clark, Senior Marketing Manager, Nippon Shokubai America Industries, Inc.

Stephen J. Orava)
Jamieson L. Greer)
) – OF COUNSEL
Neal J. Reynolds)
Mercedes C. Morno)

In Opposition to the Imposition of
Antidumping Duty Order:

Mowry & Grimson PLLC
Washington, DC
on behalf of

The Procter & Gamble Company
The Procter & Gamble Paper Products Company

Neil Gordon, Global Purchasing Manager, Procter & Gamble International Operations SA

Kristin H. Mowry)
Jeffrey S. Grimson) – OF COUNSEL
Bryan P. Cenko)

Arnold & Porter Kaye Scholer LLP
Washington, DC
on behalf of

LG Chem, Ltd. ("LGC")

Tae Young Won, P&G Tech Specialist, LGC

Jongwon (Michael) Yang, Global Corporate Affairs Associate, LGC

Seungje Jo, Marketing and Sales Professional, LGC

In Opposition to the Imposition of
Antidumping Duty Order (continued):

Sungbaek Jin, Trade Advisor, Lee & Ko

J. David Park	)
Lynn Fischer Fox	)
Daniel Wilson	) – OF COUNSEL
Gina Colarusso	)
Christine Choi	)

REBUTTAL/CLOSING REMARKS:

In Support of Imposition (**Jamieson L. Greer** and **Neal J. Reynolds**, King & Spalding LLP)
In Opposition to Imposition (**Daniel Wilson**, Arnold & Porter Kaye Scholer LLP)

-END-

APPENDIX C

SUMMARY DATA

Table C-1
SAP: Summary data concerning the U.S. market, 2018-20, January to September 2020, and January to September 2021
Quantity=metric tons dry weight; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per MTDW; 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):									
South Korea	***	***	***	***	***	▲***	▼***	▲***	▲***
Nonsubject sources	***	***	***	***	***	▼***	▲***	▼***	▲***
All import sources	***	***	***	***	***	▲***	▼***	▲***	▲***
U.S. consumption value:									
Amount	***	***	***	***	***	▼***	▼***	▼***	▲***
Producers' share (fn1)	***	***	***	***	***	▼***	▲***	▼***	▼***
Importers' share (fn1):									
South Korea	***	***	***	***	***	▲***	▼***	▲***	▼***
Nonsubject sources	***	***	***	***	***	▲***	▲***	▼***	▲***
All import sources	***	***	***	***	***	▲***	▼***	▲***	▲***
U.S. importers' U.S. shipments of imports from:									
South Korea:									
Quantity	***	***	***	***	***	▲***	▼***	▲***	▲***
Value	***	***	***	***	***	▲***	▼***	▲***	▲***
Unit value	***	***	***	***	***	▼***	▼***	▼***	▲***
Ending inventory quantity	***	***	***	***	***	▲***	▲***	▲***	▼***
Nonsubject sources:									
Quantity	***	***	***	***	***	▼***	▲***	▼***	▲***
Value	***	***	***	***	***	▼***	▲***	▼***	▲***
Unit value	***	***	***	***	***	▼***	▼***	▼***	▲***
Ending inventory quantity	***	***	***	***	***	▼***	▼***	▼***	▲ ***
All import sources:									
Quantity	***	***	***	***	***	▲***	▼***	▲***	▲***
Value	***	***	***	***	***	▲***	▼***	▲***	▲***
Unit value	***	***	***	***	***	▼***	▼***	▼***	▲***
Ending inventory quantity	***	***	***	***	***	▲***	▲***	▲***	▼***
U.S. producers':									
Average capacity quantity	476,000	469,400	476,200	357,800	357,600	▲0.0	▼(1.4)	▲1.4	▼(0.1)
Production quantity	424,199	409,807	413,217	320,015	305,659	▼(2.6)	▼(3.4)	▲0.8	▼(4.5)
Capacity utilization (fn1)	89.1	87.3	86.8	89.4	85.5	▼(2.3)	▼(1.8)	▼(0.5)	▼(4.0)
U.S. shipments:									
Quantity	362,908	357,912	342,363	259,370	253,277	▼(5.7)	▼(1.4)	▼(4.3)	▼(2.3)
Value	633,492	574,721	461,680	348,739	419,187	▼(27.1)	▼(9.3)	▼(19.7)	▲20.2
Unit value	$1,746	$1,606	$1,349	$1,345	$1,655	▼(22.7)	▼(8.0)	▼(16.0)	▲23.1
Export shipments:									
Quantity	***	***	***	***	***	▲***	▼***	▲***	▲***
Value	***	***	***	***	***	▼***	▼***	▼***	▲***
Unit value	***	***	***	***	***	▼***	▼***	▼***	▲***
Ending inventory quantity	37,257	34,192	34,610	47,036	31,740	▼(7.1)	▼(8.2)	▲1.2	▼(32.5)
Inventories/total shipments (fn1)	***	***	***	***	***	▼***	▼***	▲***	▼***
Production workers	378	376	368	369	373	▼(2.6)	▼(0.5)	▼(2.1)	▲1.1
Hours worked (1,000s)	856	850	794	597	625	▼(7.2)	▼(0.7)	▼(6.6)	▲4.7
Wages paid ($1,000)	41,540	42,475	40,578	30,135	32,367	▼(2.3)	▲2.3	▼(4.5)	▲7.4
Hourly wages (dollars per hour)	$48.53	$49.97	$51.11	$50.48	$51.79	▲5.3	▲3.0	▲2.3	▲2.6
Productivity (MTDW per 1,000 hours)	495.6	482.1	520.4	536.0	489.1	▲5.0	▼(2.7)	▲7.9	▼(8.8)
Unit labor costs	$97.93	$103.65	$98.20	$94.17	$105.89	▲0.3	▲5.8	▼(5.3)	▲12.5

Table continued.

Table C-1 continued

SAP: Summary data concerning the U.S. market, 2018-20, January to September 2020, and January to September 2021

Quantity=metric tons dry weight; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per MTDW; Period changes=percent--exceptions noted

	Reported data					Period changes			
	Calendar year			Jan-Sep		Comparison years			Jan-Sep
	2018	2019	2020	2020	2021	2018-20	2018-19	2019-20	2020-21
U.S. producers'--continued:									
Net sales:									
Quantity	422,788	414,073	411,104	305,826	310,222	▼(2.8)	▼(2.1)	▼(0.7)	▲1.4
Value	733,321	660,526	544,101	406,187	500,114	▼(25.8)	▼(9.9)	▼(17.6)	▲23.1
Unit value	$1,734	$1,595	$1,324	$1,328	$1,612	▼(23.7)	▼(8.0)	▼(17.0)	▲21.4
Cost of goods sold (COGS)	648,537	568,114	487,382	368,062	515,114	▼(24.8)	▼(12.4)	▼(14.2)	▲40.0
Gross profit or (loss) (fn2)	84,784	92,412	56,719	38,125	(15,000)	▼(33.1)	▲9.0	▼(38.6)	▼***
SG&A expenses	74,339	69,875	63,314	45,097	45,062	▼(14.8)	▼(6.0)	▼(9.4)	▼(0.1)
Operating income or (loss) (fn2)	10,445	22,537	(6,595)	(6,972)	(60,062)	▼***	▲115.8	▼***	▼***
Net income or (loss) (fn2)	***	***	***	***	***	▼***	▲***	▼***	▼***
Unit COGS	$1,534	$1,372	$1,186	$1,204	$1,660	▼(22.7)	▼(10.6)	▼(13.6)	▲38.0
Unit SG&A expenses	$176	$169	$154	$147	$145	▼(12.4)	▼(4.0)	▼(8.7)	▼(1.5)
Unit operating income or (loss) (fn2)	$25	$54	$(16)	$(23)	$(194)	▼***	▲120.3	▼***	▼***
Unit net income or (loss) (fn2)	***	***	***	***	***	▼***	▲***	▼***	▼***
COGS/sales (fn1)	88.4	86.0	89.6	90.6	103.0	▲1.1	▼(2.4)	▲3.6	▲12.4
Operating income or (loss)/sales (fn1)	1.4	3.4	(1.2)	(1.7)	(12.0)	▼(2.6)	▲2.0	▼(4.6)	▼(10.3)
Net income or (loss)/sales (fn1)	***	***	***	***	***	▼***	▲***	▼***	▼***
Capital expenditures	***	***	***	***	***	▲***	▲***	▼***	▼***
Research and development expenses	***	***	***	***	***	▼***	▼***	▲***	▼***
Net assets	634,898	604,750	586,426	***	***	▼(7.6)	▼(4.7)	▼(3.0)	***

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

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

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