Acetone from Singapore and Spain

Investigation Nos. 731-TA-1438 and 1440 (Final)

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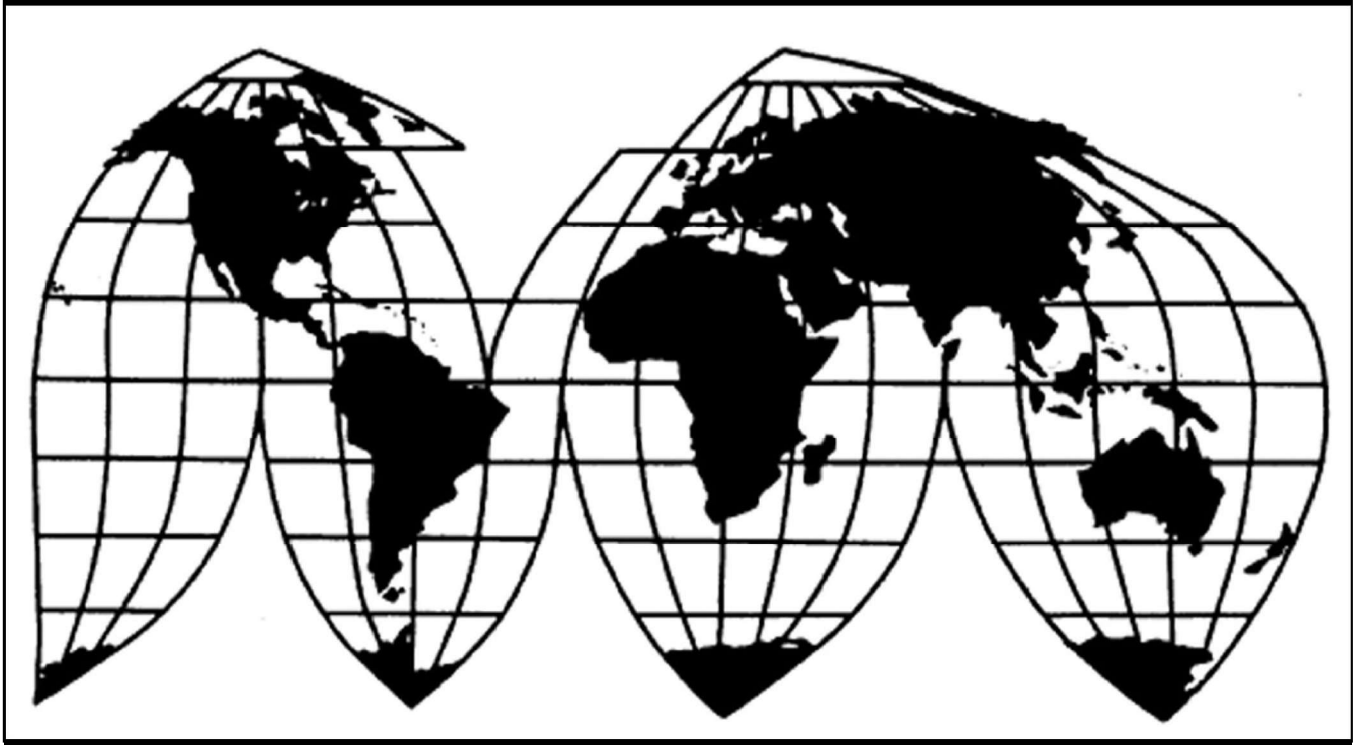
U.S. International Trade Commission



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U.S. International Trade Commission

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Note.—Information that would reveal confidential operations of individual concerns may not be published.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

UNITED STATES INTERNATIONAL TRADE COMMISSION

Investigation Nos. 731-TA-1438 and 1440 (Final)

Acetone from Singapore and Spain

DETERMINATIONS

On the basis of the record[1] developed in the subject investigations, the United States International Trade Commission ("Commission") determines, pursuant to the Tariff Act of 1930 ("the Act"), that an industry in the United States is materially injured by reason of imports of acetone from Singapore and Spain, provided for in subheadings 2914.11.10 and 2914.11.50 of the Harmonized Tariff Schedule of the United States, that have been found by the U.S. Department of Commerce ("Commerce") to be sold in the United States at less than fair value ("LTFV").[2] [3]

BACKGROUND

The Commission, pursuant to section 735(b) of the Act (19 U.S.C. 1673d(b)), instituted these investigations effective February 19, 2019, following receipt of a petition filed with the Commission and Commerce by the Coalition for Acetone Fair Trade, consisting of AdvanSix Inc., Parsippany, New Jersey, Altivia Petrochemicals, LLC, Haverhill, Ohio, and Olin Corporation, Clayton, Missouri. The Commission scheduled the final phase of the investigations following notification of preliminary determinations by Commerce that imports of acetone from Singapore and Spain were being sold at LTFV within the meaning of 733(b) of the Act (19 U.S.C. 1673b(b). Notice of the scheduling of the final phase of the Commission's investigations and of a public hearing to be held in connection therewith was given by posting copies of the notice in the Office of the Secretary, U.S. International Trade Commission, Washington, DC, and by publishing the notice in the *Federal Register* on August 26, 2019 (84 FR 44635). The hearing was

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

[2] Acetone from Singapore: Final Determination of Sales at Less Than Fair Value, 84 FR 56171, October 21, 2019.

[3] Acetone from Spain: Final Determination of Sales at Less Than Fair Value, and Final Determination of No Shipments, 84 FR 56166, October 21, 2019.

held in Washington, DC, on October 21, 2019, and all persons who requested the opportunity were permitted to appear in person or by counsel.

Views of the Commission

Based on the record in the final phase of these investigations, we determine that an industry in the United States is materially injured by reason of imports of acetone from Singapore and Spain found by the U.S. Department of Commerce ("Commerce") to be sold in the United States at less than fair value ("LTFV").

I. Background

The Coalition for Acetone Fair Trade, consisting of AdvanSix Inc. ("AdvanSix"), Altivia Petrochemicals, LLC ("Altivia"), and Olin Corporation ("Olin"), domestic producers of acetone (collectively, "petitioner"), filed the petitions in these investigations on February 19, 2019. Representatives for the petitioner appeared at the hearing accompanied by counsel and submitted a prehearing brief, posthearing brief, and final comments.

Several groups of respondents also appeared at the hearing accompanied by counsel and filed prehearing briefs, posthearing briefs, and final comments.

- CEPSA Quimica S.A. ("CEPSA"), a producer and exporter of the subject merchandise in Spain;[1]
- Dow Chemical Company, a domestic producer and importer of subject merchandise, Monument Chemical, LLC, and The Plaza Group, Inc., importers of subject merchandise (collectively, "Joint Respondents");[2]
- Mitsui & Co. (U.S.A.), Inc., an importer of subject merchandise from Singapore and Korea;
- Mitsui Phenols Singapore Pte. Ltd. ("Mitsui"), a producer and exporter of the subject merchandise in Singapore;
- INEOS Europe AG, a producer and exporter of the subject merchandise in Belgium, and INEOS Americas LLC, a domestic producer and importer of subject merchandise (collectively, "INEOS");
- Lucite International, Inc. ("Lucite"), an importer of subject merchandise;[3] and

[1] CEPSA separately filed a posthearing brief.

[2] CEPSA, INEOS, Lucite, Mitsui, and Sasol joined the Joint Respondents on the prehearing brief, Mitsui joined the Joint Respondents' posthearing brief, and CEPSA joined Joint Respondents' final comments.

[3] Lucite separately filed a posthearing brief.

- Sasol Chemicals (USA) LLC and Sasol Chemicals North America LLC, importers of subject merchandise, and Sasol South Africa Limited, a producer and exporter of subject merchandise in South Africa (collectively, "Sasol").

U.S. industry data are based on questionnaire responses from eight firms that accounted for the vast majority of domestic production of acetone over the January 1, 2016 to June 30, 2019 period of investigation ("POI").[4] U.S. import data are based on official Commerce import statistics and usable responses to questionnaires from 14 U.S. importers that represented *** percent of subject imports and *** percent of all imports.[5] Questionnaire data represented *** percent of subject imports from Belgium, *** percent of subject imports from Korea, *** subject imports from Singapore, *** percent of subject imports from South Africa, and *** percent of subject imports from Spain in 2018.[6]

The Commission received usable responses to its foreign producer questionnaire in the final phase from one firm in Belgium, one firm in Korea, one firm in Singapore, one firm in South Africa, and two firms in Spain.[7] These firms account for virtually all production in each of the subject countries and their exports to the United States are equivalent to virtually all U.S. imports of acetone from Belgium, Korea, Singapore, South Africa, and Spain.[8]

In light of Commerce's postponement of its final determinations in its antidumping duty investigations of acetone from Belgium, Korea, and South Africa, our determinations here concern the antidumping duty investigations of acetone from Singapore and Spain.

II. Domestic Like Product

A. In General

In determining whether an industry in the United States is materially injured or threatened with material injury by reason of imports of subject merchandise, the Commission first defines the "domestic like product" and the "industry."[9] Section 771(4)(A) of the Tariff Act of 1930, as amended ("the Tariff Act"), defines the relevant domestic industry as the

[4] Confidential Report, Memorandum INV-RR-114 (Nov. 4, 2019) as revised by INV-RR-121 (Nov. 13, 2019) ("CR") at I-4 and Table III-1.

[5] CR/PR at I-4. The questionnaire responses accounted for *** percent of subject imports based on official Commerce import statistics in 2018. CR/PR at I-4 and IV-1.

[6] CR/PR at I-4.

[7] *See* CR/PR at VII-3, VII-8, VII-13, VII-18, VII-22, and VII-27. Kumho P&B Chemicals, a producer and/or exporter of acetone from Korea, responded to the Commission's questionnaire in the preliminary phase but not in the final phase of these investigations. Data from its response in the preliminary phase were included in the compilation of data for the Korean industry in the final phase report. CR/PR at VII-8.

[8] *See* CR/PR at VII-3, VII-8, VII-13, VII-18, VII-22, and VII-27.

[9] 19 U.S.C. § 1677(4)(A).

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

The decision regarding the appropriate domestic like product 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] Although the Commission must accept Commerce's determination as to the scope of the imported merchandise that is subsidized or sold at less than fair value,[15] the Commission determines what domestic product is like the imported articles Commerce has identified.[16]

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[10] 19 U.S.C. § 1677(4)(A).

[11] 19 U.S.C. § 1677(10).

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

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

[14] *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., USEC, Inc. v. United States*, 34 Fed. Appx. 725, 730 (Fed. Cir. 2002) ("The ITC may not modify the class or kind of imported merchandise examined by Commerce."); *Algoma Steel Corp. v. United States*, 688 F. Supp. 639, 644 (Ct. Int'l Trade 1988), *aff'd*, 865 F.3d 240 (Fed. Cir.), *cert. denied*, 492 U.S. 919 (1989).

[16] *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); *Cleo*, 501 F.3d at 1298 n.1 ("Commerce's {scope} finding does not control the Commission's {like product} determination."); *Torrington*, 747 F. Supp. at 748-52 (affirming the Commission's (Continued...)

B. Product Description

In its final antidumping duty determinations with respect to imports of acetone from Singapore and Spain, Commerce defined the imported merchandise within the scope of the investigations as follows:

> all grades of liquid or aqueous acetone. Acetone is also known under the International Union of Pure and Applied Chemistry (IUPAC) name propan-2-one. In addition to the IUPAC name, acetone is also referred to as β-ketopropane (or beta-ketopropane), ketone propane, methyl ketone, dimethyl ketone, DMK, dimethyl carbonyl, propanone, 2-propanone, dimethyl formaldehyde, pyroacetic acid, pyroacetic ether, and pyroacetic spirit. Acetone is an isomer of the chemical formula C_3H_6O, with a specific molecular formula of CH_3COCH_3 or $(CH_3)_2CO$.
>
> The scope covers both pure acetone (with or without impurities) and acetone that is combined or mixed with other products, including, but not limited to, isopropyl alcohol, benzene, diethyl ether, methanol, chloroform, and ethanol. Acetone that has been combined with other products is included within the scope, regardless of whether the combining occurs in third countries.
>
> The scope also includes acetone that is commingled with acetone from sources not subject to this investigation. For combined and commingled products, only the acetone component is covered by the scope of this investigation. However, when acetone is combined with acetone components from sources not subject to this investigation, those third country acetone components may still be subject to other acetone investigations.
>
> Notwithstanding the foregoing language, an acetone combination or mixture that is transformed through a chemical reaction into another product, such that, for example, the acetone can no longer be separated

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(…Continued)
determination defining six like products in investigations in which Commerce found five classes or kinds).

> from the other products through a distillation process (*e.g.,* methyl methacrylate (MMA) or Bisphenol A (BPA)), is excluded from this investigation.
>
> A combination or mixture is excluded from these investigations if the total acetone component (regardless of the source or sources) comprises less than 5 percent of the combination or mixture, on a dry weight basis.
>
> The Chemical Abstracts Service (CAS) registry number for acetone is 67–64–1.
>
> The merchandise covered by this investigation is currently classifiable under Harmonized Tariff Schedule of the United States (HTSUS) subheadings 2914.11.1000 and 2914.11.5000. Combinations or mixtures of acetone may enter under subheadings in Chapter 38 of the HTSUS, including, but not limited to, those under heading 3814.00.1000, 3814.00.2000, 3814.00.5010, and 3814.00.5090. The list of items found under these HTSUS subheadings is non-exhaustive. Although these HTSUS subheadings and CAS registry number are provided for convenience and customs purposes, the written description of the scope of this investigation is dispositive.[17]

Acetone is a basic organic chemical with the formula $(CH_3)_2CO$. It is used both as a chemical intermediate in the production of other chemicals (*e.g.,* plastics and pharmaceuticals) and as a solvent.[18] Commerce's scope language covers imports consisting of acetone combined with other chemicals unless the mixture contains less than 5 percent acetone.[19] However, the

[17] *Acetone from Singapore: Final Determination of Sales at Less Than Fair Value,* 84 Fed. Reg. 56,171 (Oct. 21, 2019)*; Acetone from Spain: Final Determination of Sales at Less Than Fair Value, and Final Determination of No Shipments*, 84 Fed. Reg. 56,166 (Oct. 21, 2019).

[18] CR/PR at I-8.

[19] Commerce revised the original scope language to add the five percent threshold for acetone content so that the scope would not encompass a very broad array of products containing only small amounts of acetone, including trace amounts introduced into products indirectly as solvents in a manufacturing process. *See Acetone from Belgium, Korea, Singapore, South Africa, and Spain: Scope Comments Preliminary Decision Memorandum,* Invs. A-423-814, A-580-899, A-559-808, A-791-824, A-469-819 (July 29, 2019) at 8.

record does not indicate that any imports of acetone have entered under the blended chemical HTS categories during the POI.[20]

C. Arguments of the Parties

Petitioner. Petitioner argues that the record supports a finding that all forms of acetone should be included in the same domestic like product.[21] Petitioner disagrees with Sasol's argument that benzene-free acetone should be a distinct domestic like product and contends that there is no separate market for benzene-free acetone made by Sasol in South Africa. Petitioner notes that Sasol's largest customers are *** manufacturers that would not need a higher purity product, and claims that Sasol competes with domestic producers and subject sources for sales to these customers. Petitioner further observes that many purchasers cited a lower price as the reason for purchasing Sasol's product rather than that the product is benzene-free and that only one purchaser mentioned lack of benzene as a factor in purchasing decisions.[22]

Petitioner further argues that Sasol does not even promote its acetone as benzene-free in its marketing materials.[23] It points to a specification sheet from Sasol for its acetone that petitioner asserts indicates that Sasol's acetone contains 10 ppm of benzene, and also notes that at the Commission's hearing, Sasol's witness indicated that its benzene has a benzene level of 0.8 ppm rather than zero.[24]

Respondent. Sasol argues for a separate benzene-free domestic like product in the final phase of these investigations as it did in the preliminary phase of the investigations. However, rather than address its arguments to distinctions under the Commission's six-factor test between domestically produced products, Sasol argues that the acetone it produces in South Africa is different from that produced domestically by the cumene process.[25]

Sasol asserts that because cumene is produced from benzene, the cumene production process widely used to produce acetone can lead to benzene contamination. Because Sasol's (as well as Dow's) acetone are produced by different production processes not using cumene,

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[20] *See* CR/PR at I-7 n.12.

[21] Petitioner's Posthearing Brief, Exhibit 1 at 76-82.

[22] Petitioner's Posthearing Brief, Exhibit 1 at 79.

[23] *See* Petitioner's Posthearing Brief, Exhibit 1 at 77.

[24] Petitioner's Posthearing Brief, Exhibit 1 at 79 and Exhibit 15.

[25] The Commission had indicated in its preliminary views that, if parties wished to pursue an argument in the final phase concerning an alternative domestic like product definition, "they should provide in their comments on the Commission's draft questionnaires a particularized discussion of the proposed products and appropriate data collection." *Preliminary Determinations* at 11 n.55; *see also* 19 C.F.R. § 207.20(b). However, Sasol did not submit comments on the draft questionnaires.

Sasol maintains that its acetone and Dow's acetone are "benzene-free" acetone.[26] It argues that cumene-based acetone is not interchangeable with its acetone and Dow's acetone because customers requiring benzene-free acetone cannot replace it with the acetone produced by the cumene process. In addition to claimed differences in physical characteristics, interchangeability, and production processes, Sasol contends that there are differences in its imported product's channels of distribution, prices, and customers' perception of the product.[27]

D. Domestic Like Product Analysis

In its preliminary determinations, the Commission defined a single domestic like product consisting of acetone, coextensive with the scope of investigations.[28] Sasol had argued that benzene-free acetone should be a separate domestic like product, but the Commission found that the record did not support Sasol's arguments.[29]

The Commission explained that in defining the domestic like product, its analysis focuses on articles produced domestically "rather than between the imported merchandise Sasol produces and domestic products."[30] Accordingly, the Commission focused on differences between domestically produced products as opposed to differences between Sasol's product and domestic products. The Commission observed that it did not have evidence regarding the benzene content of Dow's domestically produced acetone.[31] The Commission examined the six factors it considers in defining the domestic like product and concluded that the record did not show that a separate market exists for benzene-free acetone in the United States, whether produced in the United States or by Sasol in South Africa.[32]

In the final phase of these investigations, the Commission obtained additional information from Dow Chemical's subsidiary Union Carbide,[33] the domestic producer that Sasol

[26] Sasol's Posthearing Brief at 2-12 and Ex. 3; Sasol's Final Comments at 8.

[27] Sasol's Posthearing Brief at 11.

[28] *Preliminary Determinations* at 8-11.

[29] *See Preliminary Determinations* at 10-11.

[30] *Preliminary Determinations* at 10.

[31] *Preliminary Determinations* at 11.

[32] *Preliminary Determinations* at 11. The Commission also considered whether there was a clear dividing line between higher purity grades of acetone and standard/technical grade acetone. It noted that the Commission has frequently stated that it "normally does not find separate like products based on different grades of chemicals or mineral products." *Preliminary Determinations* at 10 (citing *Sodium Nitrite from China and Germany*, Inv. Nos. 701-TA-453 and 731-TA-1167 (Final), USITC Pub. 4029 at 7 n.34 (Aug. 2008); *Citric Acid and Certain Citrate Salts from Canada and China,* Inv. Nos. 701-TA-456 and 731-TA-1151-1152 (Preliminary), USITC Pub. 4008 at 7 n.26 (June 2008); *Liquid Sulfur Dioxide from Canada*, Inv. No. 731-TA-1098 (Preliminary), USITC Pub. 3826 at 6 (Dec. 2005)).

[33] Dow Chemical's subsidiary, Union Carbide, is the producer of acetone, but the parties refer to the company as "Dow."

contends produces benzene-free acetone comparable to what Sasol produces in South Africa. The Commission also received information from purchasers, including a purchaser's questionnaire response from Dow's customer (***). We examine below distinctions between Dow's product produced by the isopropyl alcohol ("IPA") hydrogenation process and other domestically produced acetone using the cumene process to evaluate whether the acetone produced by Dow should be a separate domestic like product.

Physical Characteristics and Uses. All acetone has the same chemical formula.[34] It is a clear, colorless, flammable liquid with a fragrant, sweetish odor.[35] Dow produces acetone by the IPA hydrogenation process, but like the vast majority of acetone produced by the cumene process and sold in the United States, Dow's acetone was primarily standard/technical grade.[36] Dow did not report producing or shipping benzene-free acetone during the POI.[37] With respect to uses, commercial or technical grade acetone produced by the cumene process is used as a solvent and intermediate chemical in the production of downstream chemicals, methyl methacrylate ("MMA") and Bisphenol A ("BPA"). These chemicals are in turn used in the production of acrylics, plastics, and resins. Acetone is also typically the main ingredient in nail polish remover.[38]

Dow *** much of its acetone produced by the IPA process, but it also shipped to a distributor of acetone, ***, who purchased acetone from a variety of import (Korea, Singapore, South Africa) and domestic sources.[39] *** reported serving a variety of customers who used acetone in various commercial applications. It did not draw any distinctions in purity level or benzene content among the different sources of benzene and rated those sources it was familiar with as comparable.[40]

Manufacturing Facilities, Production Processes and Employees. All domestic producers that provided questionnaires to the Commission, except Dow, use the cumene process to produce acetone.[41] Dow, as noted, utilizes IPA hydrogenation, to produce acetone.[42] Dow

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[34] CR/PR at I-8

[35] CR/PR at I-8.

[36] Union Carbide's Questionnaire Response at II-3c, II-11. Dow indicated that it ***. *Id.* at II-3c. It reported shipping *** during the POI. None of ***. *Id.* at II-11.

[37] *See* Union Carbide's Questionnaire Response at II-3c and II-11.

[38] CR/PR at II-1.

[39] *** Questionnaire at II-4, III-29(c).

[40] *** reported its customers as ***. *** Questionnaire Response at III-3. *Id.* at IV-3.

[41] CR/PR at V-1 n.1. In the cumene process, cumene is oxidized in air to produce cumene hydroperoxide. The cumene hydroperoxide is then cleaved with sulfuric acid to form acetone and phenol. CR/PR at I-9. Almost all acetone manufactured globally is produced by this process. *Id.*

[42] CR/PR at I-9.

primarily produces acetone in the production of other ketones and alcohols as part of an integrated production process.[43] Dow only reported producing small quantities of acetone, (approximately *** tons per year) during the POI.[44] It explained that its production of acetone as a separate product ***.[45] As noted, Dow's production was mostly standard and technical grade acetone and not benzene-free. It *** much of its production.[46] Dow stated that ***.[47]

Channels of Distribution. Domestically produced acetone by the cumene process is generally sold to end users with the remaining portion sold to distributors.[48] Dow's acetone is ***.[49]

Interchangeability. The purchaser of Dow's acetone did not draw any distinctions between Dow's product and other acetone that it purchased from a variety of sources.[50]

Producer and Customer Perceptions. Neither Dow nor its purchaser reports any distinctions between Dow's standard or technical grade acetone and other domestically produced acetone of that grade.[51] Further, other domestic producers of acetone using the cumene process reported some shipments of benzene-free acetone.[52]

Purchasers also do not appear to distinguish between acetone produced by the IPA process and the cumene process. Two purchasers stated that South Africa (not Dow) was the only source for nondetectable benzene acetone.[53] Another purchaser, ***, indicated that low-benzene acetone is produced by all three production methods—not just the IPA and Fischer-Tropsch processes as Sasol maintains.[54]

Price. No prices are available for Dow's acetone as ***.[55]

Conclusion. We define a single domestic like product including all acetone within the scope of the investigations for purposes of the final phase of these investigations. The record

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[43] Union Carbide's Questionnaire Response at II-3c.

[44] *See* Union Carbide's Questionnaire Response at II-3c.

[45] *See* Union Carbide's Questionnaire Response at II-3c.

[46] Union Carbide's Questionnaire Response at II-10 and II-18. Dow explained that it *** Union Carbide's Questionnaire Response at II-3c.

[47] Union Carbide's Questionnaire Response at II-3c.

[48] CR/PR at Table II-1a. ***. CR/PR at II-4 n.11.

[49] Union Carbide's Questionnaire Response at II-10 and II-18.

[50] *See* Union Carbide's Questionnaire Response and *** Questionnaire Response.

[51] *** Questionnaire Response.

[52] Domestic producers *** reported U.S. shipments of standard grade benzene-free acetone. CR/PR at IV-8 n.9.

[53] CR/PR at II-27.

[54] Matrix's Purchaser Questionnaire at III-14 (***).

[55] *See* Union Carbide's Questionnaire Response at IV-2b.

does not support finding a clear dividing line between the acetone produced by Dow by the IPA process and acetone produced domestically by the cumene process.

We first note that Dow reported its acetone as mostly standard and technical grade acetone and did not report producing or shipping benzene-free acetone. Thus, contrary to Sasol's claims, the record does not indicate that Dow produces benzene-free acetone.[56] Aside from the different manufacturing processes, there do not appear to be meaningful distinctions between the acetone produced by Dow and other domestically produced acetone in terms of the factors the Commission considers in its domestic like product analysis. Acetone produced by Dow and other domestically produced acetone have similar physical characteristics and end uses and both appear to be used interchangeably by Dow's purchaser. Contrary to Sasol's arguments, the record does not indicate that producers and customers view the products differently with respect to their benzene content.[57]

Accordingly, we define a single domestic like product coextensive with the scope of Commerce's investigations.

III. Domestic Industry and Related Parties

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

[56] The distinctions Sasol emphasizes concerning its product (which the Commission found in the preliminary phase are not supported by the record) are not pertinent to the Commission's analysis of domestic like product. The Commission does not define a domestic like product that is not produced domestically. The statute defines the "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." 19 U.S.C. § 1677(10). Emphasizing the statute's mandate to identify a domestic item that is like or most similar to subject imports, the Commission has reasoned that defining a domestic like product that is not produced domestically would ignore this mandate and contradict the statute.

For products not made domestically, the Commission has found that parties seeking a separate domestic like product must identify a domestically produced variant that is "most similar in characteristics and uses" with such product. Accordingly, the Commission's consistent practice has been to reject requests by parties to define a separate domestic like product for merchandise not manufactured domestically and for which parties have not identified a domestically produced variant most similar in characteristics and uses. *See*, e.g., *Certain Aluminum Extrusions from China*, Inv. Nos. 701-TA-475 and 731-TA-1177 (Review), USITC Pub. 4677 at 11-16 (Mar. 2017); *Grain-Oriented Electrical Steel from Germany, Japan, and Poland*, Inv. Nos. 731-TA-1233, 1234, and 1236 (Final), USITC Pub. 4491 at 10 & n.49 (Sept. 2014).

[57] We have not reexamined whether there is any basis for defining specialty grades of acetone with higher purity to be a separate domestic like product. No party has argued for such a distinction in the final phase of these investigations, and Sasol maintains that its acetone is not a higher-purity grade or specialty grade of acetone, but rather is "benzene-free". Sasol's Prehearing Brief at 11; Sasol's Final Comments at 11. There also is no new information in the final phase of these investigations indicating distinctions between higher purity specialty grades and standard grade acetone.

a major proportion of the total domestic production of the product."[58] 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.

We must determine whether any producer of the domestic like product should be excluded from the domestic industry pursuant to section 771(4)(B) of the Tariff Act. This provision allows the Commission, if appropriate circumstances exist, to exclude from the domestic industry producers that are related to an exporter or importer of subject merchandise or which are themselves importers.[59] Exclusion of such a producer is within the Commission's discretion based upon the facts presented in each investigation.[60]

In its preliminary determinations, the Commission found that INEOS Americas was defined as a related party but had a demonstrated interest in domestic production and a reasonable explanation for importing acetone from Belgium. It therefore found that appropriate circumstances did not exist to exclude INEOS Americas from the domestic industry as a related party.[61]

In the final phase of these investigations, two domestic producers, INEOS Americas LLC and Dow, meet the statutory definition of a related party either because they are an importer and owned by an exporter of subject merchandise (INEOS Americas) or because a company jointly owns the domestic producer (Dow) and an importer of subject merchandise. We discuss

[58] 19 U.S.C. § 1677(4)(A).

[59] *See Torrington Co. v. United States*, 790 F. Supp. 1161, 1168 (Ct. Int'l Trade 1992), *aff'd without opinion*, 991 F.2d 809 (Fed. Cir. 1993); *Sandvik AB v. United States*, 721 F. Supp. 1322, 1331-32 (Ct. Int'l Trade 1989), *aff'd mem*., 904 F.2d 46 (Fed. Cir. 1990); *Empire Plow Co. v. United States*, 675 F. Supp. 1348, 1352 (Ct. Int'l Trade 1987).

[60] The primary factors the Commission has examined in deciding whether appropriate circumstances exist to exclude a related party include the following:

(1) the percentage of domestic production attributable to the importing producer;

(2) the reason the U.S. producer has decided to import the product subject to investigation (whether the firm benefits from the LTFV sales or subsidies or whether the firm must import in order to enable it to continue production and compete in the U.S. market);

(3) whether inclusion or exclusion of the related party will skew the data for the rest of the industry;

(4) the ratio of import shipments to U.S. production for the imported product; and

(5) whether the primary interest of the importing producer lies in domestic production or importation. *Changzhou Trina Solar Energy Co. v. USITC*, 100 F. Supp.3d 1314, 1326-31 (Ct. Int'l. Trade 2015); *see also Torrington Co. v. United States*, 790 F. Supp. at 1168.

[61] *Preliminary Determinations* at 12.

below whether appropriate circumstances exist to exclude either producer from the domestic industry.

A. Arguments of the Parties

Petitioner. Petitioner contends that INEOS Americas should be excluded from the definition of the domestic industry as a related party. Petitioner claims INEOS Americas's interest is increasingly in importation at the expense of its domestic production because its ratio of imports from Belgium to domestic production has increased during the POI.[62]

Petitioner also asserts that INEOS Americas has not properly separated its sales of its domestic production from its sales of its imports because it commingled its domestically produced and imported acetone. As a result, petitioner believes that INEOS Americas's data skew the data for the domestic industry.[63]

Respondents. INEOS argues that INEOS Americas should not be excluded as a related party. INEOS notes that INEOS Americas is the largest U.S. producer of acetone, accounting for a third of domestic production. It claims that INEOS Americas operated at very *** and meet contractual sales obligations. It argues that it is upstream-integrated, producing the cumene needed to produce acetone, and that it is one of only two U.S. producers that participate in the Large Buyer Price discussions.[64] Further, INEOS maintains that while INEOS Americas may have *** occurred on the strength of key domestic production performance indicators such as its production volume and ***.[65]

B. Analysis

INEOS Americas. INEOS Americas was the largest domestic producer of acetone in 2018, accounting for *** percent of domestic production.[66] It imported acetone from Belgium during the POI and shares common ownership with INEOS Europe AG, an exporter of subject merchandise.[67] Thus, INEOS Americas meets the definition of a related party. INEOS Americas imported *** short tons of acetone from Belgium in 2016 (the equivalent of *** percent of its domestic production), *** short tons of acetone from Belgium in 2017 (the equivalent of ***

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[62] Petitioner's Prehearing Brief, Exhibit 5 at 2-5.

[63] Petitioner contends that INEOS Americas's data reflect *** and are inconsistent with the data reported by other U.S. producers because ***. Petitioner's Prehearing Brief, Exhibit 5 at 2-5.

[64] INEOS's Prehearing Brief at 4-6.

[65] INEOS's Prehearing Brief at 7.

[66] CR/PR at Table III-1. INEOS Americas produced *** short tons of acetone in 2016, *** short tons in 2017, and *** short tons in 2018. It produced *** short tons in January to June 2018 ("interim 2018") and *** short tons in interim 2019. CR/PR at Table III-9.

[67] CR/PR at Table III-2; INEOS Americas's U.S. Producer Questionnaire at I-6. *See* 19 U.S.C. § 1677(4)(B)(ii)(III).

percent of its domestic production), and *** short tons of acetone from Belgium in 2018 (the equivalent of *** percent of its domestic production).[68] INEOS Americas's operating income to net sales ratio was ***.[69] The company ***.[70]

INEOS Americas's imports of subject merchandise *** but the ratio of its imports to domestic production remained relatively modest.[71] The ***.

Further, INEOS Americas's capacity utilization increased from *** percent in 2016 to *** percent in 2018, suggesting it needs to supplement its domestic production by importing.[72] It also ***.[73]

While petitioner argues that *** suggests that it may have benefited from its importation of the subject merchandise and will skew the financial data for the rest of the industry, ***.[74] As the Commission found in the preliminary phase of the investigations, INEOS Americas has a demonstrated interest in domestic production and a reasonable explanation for importing acetone from Belgium. We therefore find that appropriate circumstances do not exist to exclude INEOS Americas from the domestic industry as a related party.

Dow. Dow also meets the definition of a related party.[75] Dow's affiliate Rohm and Haas imported *** short tons of acetone from Korea in 2016 (the equivalent of *** percent of Dow's domestic production), *** short tons of acetone from Korea and Singapore in 2017 (the equivalent of *** percent of Dow's domestic production), and *** short tons of acetone from Korea and Singapore in 2018 (the equivalent of *** percent of Dow's domestic production).[76]

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[68] CR/PR at Table III-9. INEOS Americas imported *** short tons of acetone from Belgium during interim 2018 (the equivalent of *** percent of its domestic production) and *** short tons of acetone from Belgium in interim 2019 (the equivalent of *** percent of its domestic production). *Id.* INEOS stated that it imported subject merchandise ***. *Id.*

[69] *See* CR/PR at Table VI-3. INEOS Americas's operating income to net sales ratio was *** percent in 2016, *** percent in 2017, *** percent in 2018, *** percent in interim 2018 and *** percent in interim 2019. *Id.*

[70] ***.

[71] *See* CR/PR at Table III-8.

[72] CR/PR at Table III-4. INEOS Americas's capital expenditures ***. *See* CR/PR at Table VI-6.

[73] *See* CR/PR at Table III-9. It purchased *** short tons in 2016, *** short tons in 2017, *** short tons in 2018, *** short tons in interim 2018 and *** short tons in interim 2019. *Id.* INEOS explained these ***.

[74] *See* CR/PR at Table C-1 & Table VI-3.

[75] CR/PR at Table III-2. *See* 19 U.S.C. § 1677(4)(B)(ii)(III).

[76] CR/PR at Table III-9. Rohm and Haas imported *** short tons of acetone from Korea and Singapore during interim 2018 (the equivalent of *** percent of Dow's domestic production) and *** short tons of acetone from Korea in interim 2019. *Id.*

Dow was the smallest producer to provide a questionnaire to the Commission. It provided only trade data, and no pricing or financial data.[77]

As noted, Dow *** and reported production of a *** tons of acetone a year.[78] It accounted for less than *** percent of domestic production during 2018.[79] Dow ***.[80]

While the affiliate's imports would suggest that exclusion of Dow is appropriate, particularly for a producer with ***, Dow reported only trade data and no financial or price data and its production is *** relative to the rest of the domestic industry. Accordingly, exclusion of Dow will have only minimal effect on trade data and no effect on financial or pricing data.[81] We also note that no party requested the exclusion of Dow from the definition of the domestic industry. Given these considerations, we find that appropriate circumstances do not exist to exclude Dow as a related party.

We consequently define the domestic industry to include all domestic producers of the domestic like product in the definition of the domestic industry.

IV. Negligibility

Pursuant to Section 771(24) of the Tariff Act, imports from a subject country of merchandise corresponding to a domestic like product shall be deemed negligible if they account for less than three percent (or four percent in the case of a developing country in a countervailing duty investigation) 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.[82]

The statute further provides that subject imports from a single country that comprise less than 3 percent of such total imports of the product may not be considered negligible if there are several countries subject to investigation with negligible imports and the sum of such imports from all those countries collectively accounts for more than 7 percent of the volume of all such merchandise imported into the United States.[83] In the case of countervailing duty investigations involving developing countries (as designated by the United States Trade

[77] CR/PR at V-14 n.27; CR/PR at VI-1 n.2.

[78] CR/PR at Table III-9. Dow's Producer Questionnaire at II-3c.

[79] *See* CR/PR at Table III-1.

[80] CR/PR at Table III-1.

[81] *Compare* CR/PR at Table C-1 *with* CR/PR at Table C-2.

[82] 19 U.S.C. §§ 1671d(b), 1673d(b), 1677(24)(A)(i), 1677(24)(B); *see also* 15 C.F.R. § 2013.1 (developing countries for purposes of 19 U.S.C. § 1677(36)).

[83] 19 U.S.C. § 1677(24)(A)(ii).

Representative (USTR)), the statute indicates that the negligibility limits are 4 percent and 9 percent, rather than 3 percent and 7 percent.[84]

In the preliminary phase of these investigations, the Commission found that subject imports from Saudi Arabia were negligible and terminated the investigation with respect to Saudi Arabia. The Commission also noted that it was basing total import volumes on HTS numbers that include acetone only, and not including imports entering under the four HTS categories that include imports of acetone blended with other chemicals. It accordingly rejected an argument from Sasol that the Commission should include imports entering under the HTS categories covering blends in the calculation of total imports of acetone.[85]

In the final phase of these investigations, based on official import statistics for HTS numbers that include acetone only,[86] the data for the February 2018 through January 2019 period preceding the filing of these petitions indicate that subject imports from Singapore and Spain accounted for 3.9 percent and 12.7 percent of total imports of acetone, respectively.[87] Because subject imports from Singapore and Spain are above the 3.0 percent negligibility threshold, we find that these imports are not negligible.[88]

V. Cumulation

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

(1) the degree of fungibility between subject imports from different countries and between subject imports and the domestic like product,

[84] 19 U.S.C. § 1677(24)(B).

[85] *Preliminary Determinations* at 15.

[86] CR/PR at IV-1

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

[88] Joint Respondents raise the argument, rejected by the Commission in the preliminary phase of the investigations, that the Commission should include the categories covering blends of acetone with other chemicals in the calculation of imports. Adopting such an approach, they contend, would render subject imports in all investigations except for Korea negligible. *See* Joint Respondents' Prehearing Brief at 9-10. As the Commission noted in the preliminary phase, including the HTS categories covering blends in the calculation of import volumes would include nonsubject merchandise in the calculation of import volumes. *Preliminary Determinations* at 15. Importers in the preliminary phase indicated that they were not importing acetone commingled with other chemicals. CR/PR at I-7 n.12.

including consideration of specific customer requirements and other quality related questions;

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

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

(4) whether the subject imports are simultaneously present in the market.[89]

While no single factor is necessarily determinative, and the list of factors is not exclusive, these factors are intended to provide the Commission with a framework for determining whether the subject imports compete with each other and with the domestic like product.[90] Only a "reasonable overlap" of competition is required.[91]

In its preliminary determinations, the Commission found a reasonable overlap of competition between the domestic like product and imports from each subject country, as well as between imports from each subject country, and it cumulatively assessed the volume and effects of imports from each subject country. The Commission rejected INEOS's argument that subject imports from Belgium were sold through a unique channel of distribution because they were sold to end users through contracts rather than the spot market.[92]

A. Arguments of the Parties

Petitioner's Arguments. Petitioner argues that there is a reasonable overlap of competition because subject imports compete directly with each other and with the domestic like product. Petitioner asserts that acetone is a commodity product and acetone from different sources is fungible. Petitioner also argues that acetone from all subject countries and domestically produced acetone compete in the same geographic markets, are sold through the

[89] *See Certain Cast-Iron Pipe Fittings from Brazil, the Republic of Korea, and Taiwan*, Inv. Nos. 731-TA-278-280 (Final), USITC Pub. 1845 (May 1986), *aff'd*, *Fundicao Tupy, S.A. v. United States*, 678 F. Supp. 898 (Ct. Int'l Trade), *aff'd*, 859 F.2d 915 (Fed. Cir. 1988).

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

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

[92] *Preliminary Determinations* at 18-20.

same channels of distribution – either to distributors or end users – and were present in the U.S. market during the POI.[93]

Petitioner disputes INEOS's argument that marketing of subject imports as an imported product is necessary to demonstrate that the competition requirement is satisfied. Petitioner argues that INEOS Americas's blending of imports with its domestic product does not show a lack of competition. Rather, according to petitioner, this fact supports a finding that the imports are fungible with the domestic product.[94] Petitioner maintains that the marketing requirement cited by INEOS simply means that product must be offered for sale and there is no requirement that imports be marketed as imports or even identified as imports to purchasers.[95]

Respondents' Arguments. INEOS argues that subject imports from Belgium should not be cumulated because they are not competing in the U.S. market. INEOS explains that INEOS Americas's sales contracts do not specify the country of origin of the acetone to be delivered to the customer and the terms of those contracts do not depend on the origin of the acetone to be delivered. It claims INEOS Americas commingles domestic production with its subject imports and ships acetone to customers without identifying the source of the acetone. Thus, INEOS asserts that imported acetone is never marketed as a separate product.[96]

INEOS also asserts that Congress expressly required that imports be marketed reasonably coincident with other subject imports and the domestic like product before cumulation is permitted. According to INEOS, because INEOS Americas does not specifically market Belgian acetone in the U.S. market, those imports do not satisfy this congressional requirement. According to INEOS, it is not sufficient for subject imports merely to be present in the market at the same time as acetone from other sources; the imports must be marketed on a head-to-head basis in order to be cumulated.[97]

CEPSA claims that subject imports from Spain should not be cumulated because they are not competing with domestic producers for sales to purchasers in the U.S. market. It claims that it sold *** percent of its acetone to a distributor, ***, and no domestic producer was

[93] Petitioner's Prehearing Brief at 8-11.

[94] Petitioner's Posthearing Brief, Exhibit 1 at 69-70 (citing *Steel Wire Rope from Argentina, Chile, India, Israel, Mexico, The People's Republic of China, Taiwan, and Thailand,* Inv. Nos. 701-305 and 306, 731-TA-476 through 482 (Preliminary), USITC Pub. 2343 (Dec. 1990) at 16 and *Biodiesel from Argentina and Indonesia*, Inv. Nos. 701-TA-571-572 (Final), USITC Pub. 4748 (Dec. 2017) at 14).

[95] Petitioner's Posthearing Brief, Exhibit 1 at 68-74.

[96] INEOS's Prehearing Brief at 16-18.

[97] INEOS's Prehearing Brief at 10, 14 (citing H.R. Rep. No. 1156, 98th Cong., 2d Sess. 173 (1984)).

willing to work with ***. Because CEPSA claims that it was the only supplier to ***, it argues that subject imports from Spain were not competing in the U.S. market.[98]

B. Analysis and Conclusion

As an initial matter, the statutory requirement is satisfied because the petitioner filed the antidumping duty petitions with respect to Belgium, Korea, Singapore, South Africa, and Spain on the same day, February 19, 2019. We find that there is a reasonable overlap of competition between subject imports from each of the subject countries and between subject imports from each source and the domestic like product.

Fungibility. There is a high degree of substitutability between domestically produced acetone and acetone from imported sources.[99] Petitioner and respondents have both indicated that standard/technical grade acetone is a commodity chemical product that is fungible.[100] The majority of domestic producers, U.S. importers, and purchasers reported that the domestic like product and subject imports from and between all five subject countries are "always" or "frequently" interchangeable.[101] All domestic producers and a majority of U.S. importers reported that non-price differences are "sometimes" or "never" significant in comparisons of the domestic like product and imports from each subject country, as well as in comparisons between imports from subject countries.[102] U.S. purchasers' responses were more mixed.[103]

Notwithstanding some non-price differences, for those purchasing factors most frequently identified by purchasers as "very important,"[104] a majority of purchasers rated the

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[98] See CEPSA's Posthearing Brief at 3-5.

[99] CR/PR at II-26.

[100] Hearing Transcript ("Hearing Tr.") at 32-33 (Sanders); Hearing Tr. at 186 (Castro); Joint Respondents' Prehearing Brief at 28, 117; INEOS's Prehearing Brief at 16 n.47.

[101] CR/PR at Table II-12. The only exceptions are that half of responding U.S. importers indicated that subject imports from Belgium and Singapore are "sometimes" interchangeable with subject imports from South Africa and half of the importers indicated that that subject imports from Belgium and Singapore are "always" or "frequently" interchangeable with subject imports from South Africa. *Id.*

[102] CR/PR at Table II-14. The only exception is that when comparing the domestic product to subject imports from South Africa, half of U.S. importers reported that non-price differences are "sometimes" or "never" significant, and half reported that non-price differences are "frequently" significant. *Id.*

[103] CR/PR at Table II-14. A majority of purchasers reported that non-price differences were "sometimes" or "never" significant in their purchase decisions between domestic product and subject imports from Belgium and from Korea, equal numbers of purchasers reported "always" or "frequently" and "sometimes" or "never" with respect to subject imports from Singapore and South Africa, and a slight majority of purchasers reported "always" or "frequently" with respect to subject imports from Spain. *See* CR/PR at Table II-14.

[104] CR/PR at Table II-9. Factors most frequently identified as "very important" by purchasers were availability (32 of 32 responding firms), reliability of supply (31 of 32 responding firms), product (Continued...)

domestic like product and imports from each subject country as "comparable."[105] In comparisons between subject imports and the domestic product, majorities of purchasers rated such products "comparable" for availability, reliability of supply, product consistency, quality meets industry standards, and price.[106]

Thus, the record generally supports a finding of comparability between and among subject imports from Belgium, Korea, Singapore, South Africa, and Spain and with the domestic like product, among those traits ranked most important by purchasers. The record therefore indicates that there is a sufficient degree of fungibility among the subject imports and the domestic like product.

Channels of Distribution. Subject imports and the domestic like product shared the same general channels of distribution. During the period of investigation, domestic producers and importers of subject imports from Belgium and Singapore sold acetone primarily to end users and, to a lesser extent, distributors.[107] Importers of subject imports from Korea, South Africa, and Spain sold acetone to both end users and distributors.[108]

Geographic Overlap. U.S. producers reported selling acetone to all regions of the contiguous United States.[109] Subject imports were sold in all regions of the United States, and imports from each subject country were sold to the Southeast and Midwest regions.[110]

Simultaneous Presence in Market. Subject imports from South Africa were present in the U.S. market in 41 months of the 42-month POI, January 2016-June 2019.[111] Subject imports from Korea were present in 36 of 42 months; subject imports from Belgium were present in 32 of 42 months; subject imports from Spain were present in 18 of 42 months; subject imports from Singapore were present in 14 of 52 months.[112]

(…Continued)
consistency (28 of 32 responding firms), quality meets industry standards (26 of 32 responding firms), and price (25 of 32 responding firms). *Id*.

[105] CR/PR at Table II-11.

[106] *See* CR/PR at Table II-11. Purchasers rated the subject imports and domestic product less comparable with respect to delivery time, extension of credit, and U.S. transportation costs for imports from some countries. *Id.* These were not the most important purchasing factors as reported by purchasers. *See* CR/PR at Tables II-8 and II-9.

[107] *See* CR/PR at Table II-1a.

[108] *See* CR/PR at Table II-1a.

[109] CR/PR at Table II-2.

[110] CR/PR at Table II-2.

[111] CR/PR at Table IV-8.

[112] CR/PR at Table IV-8.

Analysis. Based on the foregoing, the record supports finding that subject imports from each subject country are fungible with the domestic like product and each other, and that subject imports from each subject country and the domestic like product are sold in similar channels of distribution and in similar geographic markets, and have been simultaneously present in the U.S. market.

INEOS has argued that its imported acetone must be marketed as a distinct product in order to be cumulated. We find this argument has no merit. The fact that purchasers do not know whether the acetone they purchase from INEOS is imported or domestically produced does not mean that INEOS Americas is not competing for sales in the U.S. market, or lessen the effects of the subject imports in the marketplace.[113] Indeed, the Commission has previously found that the commingling of product from different sources indicates that the product is fungible, a fact that supports cumulation.[114] The legislative history that INEOS relies upon concerning the marketing of subject imports being "reasonably coincident" pertains to whether the marketing of imports is contemporaneous in time, not to a particular manner of sale.[115] We also note that the U.S. Court of International Trade has held that it is contrary to the statute to require that importers have a particular intent in order for the Commission to cumulate subject

[113] As the Commission noted in the preliminary phase of the investigations, many of INEOS Americas's customers are *** purchasing from a variety of sources. *Preliminary Determinations* at 20 n.114. *See* INEOS Americas's Producer Questionnaire at IV-20.

[114] See *1-Hydroxyethylidene-1, 1-Diphosphonic Acid (HEDP) from China and India,* Inv. Nos. 731-TA-1146-1147 (Preliminary) USITC Pub. 3998 at 12 (May 2008) ("{The domestic producer} indicated that it often commingles its domestic production with its imports from China and that certain customers are indifferent as to the country of origin of the HEDP they purchase."); *Biodiesel From Argentina and Indonesia*, Inv. Nos. 701-TA-571-572 (Final) USITC Pub. 4748 at 14 (Dec. 2017) ("{L}arge-scale blending of domestically produced biodiesel and biodiesel from both subject countries at its affiliated truck stops for transportation fuel supports a finding of substantial fungibility of biodiesel from different sources.").

[115] *See Chaparral Steel Co. v. U.S.*, 901 F.2d 1097, 1101 (Fed. Cir. 1990). The legislative history cited by INEOS concerns the cumulation provision in the Trade and Tariff Act of 1984, Pub.L. No. 98–573, § 612, 98 Stat. 2948, 3033. The Conference Report states that the cumulation "provision requires cumulation of imports from various countries that each account individually for a small percentage of total market penetration but when combined may cause material injury. The conferees do intend, however, that the marketing of imports that are {cumulated} be reasonably coincident." H.R. Conf. Rep. No. 1156, 98th Cong., 2d Sess. 173, reprinted in 1984 U.S. Code Cong. & Admin. News 5220, 5290. The Federal Circuit explained that "reasonably coincident" means that the subject imports must have been marketed reasonably contemporaneously. *Chaparral Steel Co.,* 901 F.2d at 1101 ("{T}he statute … implies that they be marketed 'reasonably coincident' in time.").

imports.[116] The Court stated that requiring intent would be "inconsistent with the purposes of cumulation."[117]

We also reject CEPSA's argument that subject imports from Spain did not compete in the U.S. market with the domestic product because domestic producers declined to sell through the Plaza Group, a chemicals marketing firm.[118] The record indicates that the *** during the POI.[119] Thus, the record lends no support to CEPSA's argument that subject imports from Spain were not competing with the domestic product in the U.S. market.

Conclusion. The record indicates that subject imports from the five subject countries are fungible with the domestic like product and each other, and that subject imports from each subject country and the domestic like product are sold in similar channels of distribution, in similar geographic markets, and have been simultaneously present in the U.S. market. In light of the foregoing, we find that there is a reasonable overlap of competition between the domestic like product and imports from each subject country and between imports from each subject country. Accordingly, we cumulate subject imports from Belgium, Korea, Singapore, South Africa, and Spain for our analysis of whether there is material injury by reason of subject imports.

VI. Material Injury by Reason of Subject Imports

Based on the record in the final phase of these investigations, we find that an industry in the United States is materially injured by reason of imports of acetone from Singapore and Spain that Commerce has found to be sold in the United States at less than fair value.

A. Legal Standards

In the final phase of antidumping and countervailing duty investigations, the Commission determines whether an industry in the United States is materially injured or threatened with material injury by reason of the imports under investigation.[120] 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

[116] See *USX Corp. v. United States*, 655 F. Supp. 487, 494 (CIT 1987) (indicating that there is no "intent requirement" in the statute, so concerted activity among importers is not required in order to cumulate) (citing *Lone Star Steel Company v. United States*, 650 F. Supp. 183, 186 n.7 (1986)).

[117] *USX Corp. v. United States*, 655 F. Supp. at 494.

[118] The Plaza Group charges a fee (a percentage of the sales price) for the marketing and sale of acetone for domestic and foreign producers. Hearing Tr. at 188 (Velarde).

[119] ***. *** Purchaser Questionnaire at II-1 and II-4 (***, and *** percent from CEPSA during 2018). *** also sold acetone ***, which purchased acetone from domestic producers and from sources of subject product. *See* Purchaser Questionnaires at II-1, II-4; *** Importer Questionnaire at III-20.

[120] 19 U.S.C. §§ 1671d(b), 1673d(b).

like product, but only in the context of U.S. production operations.[121] The statute defines "material injury" as "harm which is not inconsequential, immaterial, or unimportant."[122] In assessing whether the domestic industry is materially injured by reason of subject imports, we consider all relevant economic factors that bear on the state of the industry in the United States.[123] 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."[124]

Although the statute requires the Commission to determine whether the domestic industry is "materially injured or threatened with material injury by reason of" unfairly traded imports,[125] 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.[126] 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.[127]

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

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[121] 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).

[122] 19 U.S.C. § 1677(7)(A).

[123] 19 U.S.C. § 1677(7)(C)(iii).

[124] 19 U.S.C. § 1677(7)(C)(iii).

[125] 19 U.S.C. §§ 1671d(b), 1673d(b).

[126] *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).

[127] 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).

among domestic producers; or management decisions by domestic producers. The legislative history explains that the Commission must examine factors other than subject imports to ensure that it is not attributing injury from other factors to the subject imports, thereby inflating an otherwise tangential cause of injury into one that satisfies the statutory material injury threshold.[128] In performing its examination, however, the Commission need not isolate the injury caused by other factors from injury caused by unfairly traded imports.[129] 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.[130] It is clear that the existence of injury caused by other factors does not compel a negative determination.[131]

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[128] 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.

[129] 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.").

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

[131] *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.").

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."[132] The Commission ensures that it has "evidence in the record" to "show that the harm occurred 'by reason of' the LTFV imports," and that it is "not attributing injury from other sources to the subject imports." [133] The Federal Circuit has examined and affirmed various Commission methodologies and has disavowed "rigid adherence to a specific formula."[134]

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.[135] Congress has delegated this factual finding to the Commission because of the agency's institutional expertise in resolving injury issues.[136]

B. Conditions of Competition and the Business Cycle

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

1. Demand Considerations

Demand for acetone depends on demand for the downstream products in which it is used. Production of MMA is the largest end use of acetone in the United States, accounting for *** percent of apparent U.S. consumption of acetone in 2017, followed by use as a solvent (***

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

[133] *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.

[134] *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.").

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

[136] *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.").

percent), and production of BPA (*** percent).[137] There is a small specialty market for National Formulary ("NF") grade and low water grade acetone for production of pharmaceuticals.[138] Less than 2 percent of sales in the U.S. market are specialty acetone.[139]

Most purchasers and importers reported that demand for acetone in the United States increased over the POI, while most domestic producers reported no change in demand.[140] Apparent U.S. consumption increased from 1.40 million short tons in 2016 to 1.44 million short tons in 2017 and 1.52 million short tons in 2018, an overall increase of 8.6 percent.[141]

2. Supply Considerations

The domestic industry was the largest source of shipments of acetone to the U.S. market during the POI. The domestic industry's share of apparent U.S. consumption decreased from 92.2 percent in 2016 to 87.8 percent in 2017 and 83.3 percent in 2018.[142] The domestic industry's share of apparent U.S. consumption was higher in interim 2019, at 86.6 percent, than in interim 2018, at 83.1 percent.[143] Eight domestic producers provided responses to the Commission's questionnaires, with the three largest domestic producers accounting for approximately 63 percent of reported production.[144]

U.S. producers' capacity fluctuated over the POI, increasing from 1.63 million short tons in 2016 to 1.73 million short tons in 2017, and decreasing to 1.58 million short tons in 2018.[145] Production of acetone by U.S. producers also fluctuated over the POI, increasing from 1.37 million short tons in 2016 to 1.40 million short tons in 2017, and decreasing to 1.33 million short tons in 2018.[146]

Multiple events affected the supply of domestic acetone during the POI.[147] Among those, Altivia restarted a second line of production that added *** short tons of domestic acetone production in 2017 and an additional *** short tons in 2018; this was an overall

[137] CR/PR at II-1. MMA is typically used to produce acrylic sheet and molding, which is used in construction, transportation, and medical devices. BPA is used to produce polycarbonate resins used in optical media, electrical and electronic uses, and the automotive sector. Acetone is widely used as the solvent in nail polish remover, cement, lacquer and finishers, cleaners, paint, coatings, films and adhesives, pharmaceuticals, and household and personal care products. *Id*.

[138] *See* CR/PR at Table IV-5.

[139] *See* CR/PR at IV-8 n.6 and Table IV-5.

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

[141] CR/PR at IV-16 and Table IV-9.

[142] CR/PR at Table IV-9.

[143] CR/PR at Table IV-9.

[144] CR/PR at Table III-1.

[145] CR/PR at Table III-4.

[146] CR/PR at Table III-4.

[147] *See* CR/PR at II-12 to II-18.

increase of approximately *** percent over its 2016 reported production.[148] In August 2017, Hurricane Harvey resulted in producers near the Gulf of Mexico shutting down production. Three U.S. producers (***), accounting for *** percent of reported domestic production in 2017, reported declaring *force majeure* because of Hurricane Harvey.[149] Producers placed customers on allocation, and the declared *force majeure* lasted approximately 2-6 weeks for ***.[150] Although Hurricane Harvey impacted the supply of acetone, petitioner states that demand was also reduced for acetone because the hurricane affected certain downstream users' facilities.[151] Four domestic producers, *** also reported reducing their production of acetone particularly in 2018 due to poor market conditions during the POI.[152] Storage and storage capacity of domestic acetone increased in 2018.[153]

In late 2017, Shell announced that in January 2018 it would be shutting down a production line in Deer Park, Texas. The closure, which occurred later than expected in February 2018, lowered Shell's capacity from *** short tons in 2016 and 2017, to *** short tons in 2018.[154] Purchasers reported difficulty in obtaining supply, mostly limited to late 2017 and early 2018 due to a number of weather-related events and fires.[155] By mid-2018, however, the parties agree there was an oversupply of acetone in the U.S. market, though there is disagreement as to the cause.[156]

Shipments of subject imports were the second largest source of supply during the POI.[157] Cumulated subject imports' share of apparent U.S. consumption increased from 7.0 percent in 2016 to 10.3 percent in 2017 and 15.7 percent in 2018. Cumulated subject imports' share of apparent U.S. consumption was lower in interim 2019, at 12.9 percent, than in interim 2018, at 15.9 percent.[158]

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[148] *See* CR/PR at II-14 and Tables III-3 and III-4

[149] CR/PR at II-12.

[150] CR/PR at II-12 to II-13.

[151] CR/PR at II-12; Hearing Tr. at 175 (Connolly).

[152] *See* CR/PR at Tables III-3 and III-8.

[153] CR/PR at III-8 to III-9 (noting that from 2016 to 2018 the number of days of U.S. producers' inventories exceeded 90 percent of storage increased by 50 percentage points, and that in 2018 five U.S. producers reported exceeding 90 percent of storage, while in 2016 and 2017 two U.S. producers reported exceeding 90 percent of storage).

[154] CR/PR at II-10; Hearing Tr. at 173 (Frederic).

[155] CR/PR at II-16-17 and Table III-3.

[156] *See, e.g.,* Petitioner's Posthearing Brief at 12-14. Joint Respondents' Final Comments at 1-3.

[157] CR/PR at Table IV-9.

[158] CR/PR at Table IV-9.

Shipments of nonsubject imports were the smallest source of supply during the POI.[159] Leading nonsubject sources of acetone were Saudi Arabia, Finland, and Italy.[160] Nonsubject imports' market share fluctuated from 0.9 percent of apparent U.S. consumption in 2016 to 1.9 percent in 2017 and 1.0 percent in 2018. Nonsubject imports' market share of apparent U.S. consumption was lower in interim 2019, at 0.4 percent, than in interim 2018, at 1.1 percent.[161]

3. Substitutability and Other Conditions

The record indicates that there is a high degree of substitutability between domestically produced acetone and acetone from subject sources.[162] All domestic producers and a majority of U.S. purchasers reported that the domestic like product and subject imports were "always" or "frequently" interchangeable.[163] Most U.S. importers reported that subject imports from South Africa were either frequently or sometimes interchangeable with those from Belgium and Singapore.[164]

For those purchasing factors most frequently identified by purchasers as "very important,"[165] a majority of purchasers rated the domestic like product and imports from each subject country "comparable," with the exception of one factor for the comparison of the domestic like product to imports from Spain and nonsubject countries.[166] All domestic producers and a majority of importers reported that non-price differences were "sometimes" or "never" significant in purchasing decisions for acetone.[167] U.S. purchaser responses were mixed.[168]

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[159] CR/PR at Table IV-9.

[160] CR/PR at II-11.

[161] CR/PR at Table IV-9.

[162] CR/PR at II-26.

[163] CR/PR at Table II-12. An equal number of importer firms reported acetone from Belgium and South Africa, and from Singapore and South Africa, as "always," "frequently," or "sometimes" being interchangeable. *Id*.

[164] CR/PR at Table II-12.

[165] Factors most frequently identified as "very important" by purchasers were availability, reliability, product consistency, quality meets industry standards, and price. CR/PR at Table II-9.

[166] CR/PR at Table II-11. For comparison to imports from Spain, three purchasers reported that the domestic like product's reliability of supply is comparable, while one reported the domestic like product is superior, and one reported it was inferior. For comparison to imports from nonsubject countries, three purchasers reported that the domestic like product's availability was comparable, two reported that it was superior, and one reported that it was inferior. *Id*.

[167] CR/PR at Table II-14.

[168] *See* CR/PR at Table II-14. Purchaser responses reported a slight majority of firms reporting that such differences were "sometimes" or "never" significant in their purchase decisions between U.S. domestic like product and subject imports from Belgium and Korea, equal numbers of firms reporting "always" or "frequently" and "sometimes" or "never" between U.S. domestic like product and subject

(Continued...)

We find that price is an important factor in purchasing decisions for acetone, while recognizing that other factors are also important, most notably availability and reliability of supply.[169] In identifying the three most important factors in their purchasing decisions for acetone, 29 responding purchasers listed price/cost, and 25 firms listed availability/supply.[170] Many purchasers reported that availability, reliability of supply, product consistency, quality meets industry standards, and price were very important purchase factors.[171]

The majority of domestic producers' and importers' sales of acetone are made under contracts directly to end users.[172] Domestic producers' sales were *** through long-term contracts during the POI, although there were some shifts between contract types toward the latter part of the POI.[173] For example, U.S. producers' spot sales as a share of U.S. commercial shipments shifted upwards from *** percent in 2016 and *** percent in 2017 to *** percent in 2018 and *** percent in interim 2019,[174] while the share of long-term and annual contracts shifted downwards from *** percent in 2016 and *** percent in 2017 to *** percent in 2018 and *** percent in interim 2019.[175]

Importers sold subject merchandise *** through a combination of long-term and annual contracts during the POI. The quantity of subject imports increased for every contract type in every year of the POI; the shares of U.S. commercial shipments by contract type fluctuated during the POI. Importers' long-term and annual contracts fluctuated from *** percent of total shipments in 2016, to *** percent in 2017, to *** percent in 2018, and to *** percent in

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imports from Singapore and South Africa, and a slight majority of firms reporting "always" or "frequently" with respect to U.S. domestic like product and subject imports from Spain. *Id.*

[169] CR/PR at Table II-9.

[170] CR/PR at Table II-8. Price/cost was the factor most frequently listed as the first-most and third-most important, while availability/supply was the factor most frequently listed as the second-most important. *Id*.

[171] CR/PR at Table II-9.

[172] CR/PR at Tables II-1a and V-2.

[173] CR/PR at Table V-12. U.S. producers reported U.S. commercial shipments made by long-term contract were *** short tons in 2016, *** short tons in 2017, *** short tons in 2018, and *** short tons in interim 2019. *Id*.

[174] CR/PR at Table V-2. U.S. producers' reported that U.S. commercial shipments made by spot sales were *** short tons in 2016, *** short tons in 2017, *** short tons in 2018, and *** short tons in interim 2019. *Id*. ***. CR/PR at V-9 n.21.

[175] CR/PR at Table V-2. U.S. producers reported that U.S. commercial shipments made by annual contracts were *** short tons in 2016, *** short tons in 2017, *** short tons in 2018, and *** short tons in interim 2019. U.S. producers' share of U.S. commercial shipments of short-term contracts was less than *** percent in each year of the POI. *Id*.

interim 2019, while spot sales shifted upwards from *** percent of total shipments in 2016 and *** percent in 2017 to *** percent in 2018 before decreasing to *** percent in interim 2019.[176]

Cumene, a chemical produced from benzene and propylene, is the raw material for acetone production in the cumene peroxidation process, which accounts for the vast majority of U.S. acetone production.[177] Raw materials accounted for an increasing portion of domestic producers' production costs over the POI. Raw materials' share of the cost of goods sold ("COGS") for U.S. production of acetone increased from *** percent in 2016 to *** percent in 2018.[178] The ratio of raw materials to net sales increased over the POI from 70.3 percent in 2016 to 81.0 percent in 2018.[179]

The cumene process produces acetone and phenol as co-products; one pound of phenol is produced for every 0.61 pounds of acetone.[180] U.S. producers' acetone sales revenue accounted for *** percent of combined acetone and phenol revenue in 2016, *** percent in 2017, and *** percent in 2018.[181] There is disagreement among the parties as to whether acetone production decisions are driven by demand for both acetone and phenol, or solely by demand for phenol.[182]

Benchmark prices of acetone are based on the price of contained propylene,[183] specifically refinery grade propylene ("RGP").[184] Prices for most acetone sales in the U.S. market, both contract sales and spot sales, are based on a negotiated discount off the Large

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[176] CR/PR at Table V-2. Importers' reported that U.S. commercial shipments made by long-term contract were *** short tons in 2016, *** short tons in 2017, *** short tons in 2018, and *** short tons in interim 2019 and annual contracts were *** short tons in 2016, *** short tons in 2017, and *** short tons in 2018, and *** short tons in interim 2019; spot sales were *** short tons in 2016, *** short tons in 2017, *** short tons in 2018, and *** short tons in interim 2019. Importers' share of U.S. commercial shipments by short-term contracts fluctuated over the POI. Importers' reported that U.S. commercial shipments made by short-term contracts were *** short tons in 2016, *** short tons in 2017, *** short tons in 2018, and *** short tons in interim 2019. *Id*.

[177] CR/PR at V-1. The cumene process is capital intensive, with high fixed costs. Production is therefore most efficient when production lines operate continuously with little downtime. CR/PR at II-8; Hearing Tr. at 32 (Sanders). A small amount of U.S. acetone is produced using catalytic dehydrogenation of isopropyl alcohol. CR/PR at II-1.

[178] CR/PR at VI-13.

[179] CR/PR at Table VI-3.

[180] CR/PR at II-1.

[181] CR/PR at Table VI-5.

[182] Joint Respondents' Prehearing Brief at 12-14; Petitioner's Posthearing Brief at 9-12.

[183] It takes 0.78 of a pound of RGP to produce one pound of acetone, and therefore, LBP less contained RGP is calculated using LBP-(RGP*0.78). CR/PR at V-8 n.20.

[184] CR/PR at V-1.

Buyer Price ("LBP"), an index published monthly.[185] The LBP is set based on the RGP price plus a margin that is negotiated between three purchasers that use acetone to produce MMA (Dow, Lucite, and Evonik) and two U.S. acetone producers (INEOS Americas and Shell). The LBP serves as a market benchmark rather than the actual price paid by the three large MMA purchasers.[186] Acetone contract prices typically adjust monthly based on changes in the LBP.[187]

Petitioner and respondents agree that the U.S. producers' prices less contained RGP can be used as a proxy for the domestic industry's spread or margin on acetone.[188] U.S. producers' prices less contained RGP increased from *** per pound in the first quarter of 2016 to a period high of *** per pound in the second quarter of 2017, and then declined to a period low of *** per pound during the second half of 2018 and first half of 2019.[189]

C. Volume of Cumulated 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."[190]

Cumulated subject imports increased their presence in the U.S. market over the POI. Based on official import statistics,[191] subject imports increased from 97,811 short tons in 2016 to 147,786 short tons in 2017 and 239,487 short tons in 2018, a level 144.8 percent above that of 2016.[192] Although subject imports were lower overall in interim 2019 than in interim 2018,

[185] CR/PR at V-5.

[186] CR/PR at V-5 to V-6; Hearing Tr. at 33-35 (Sanders). The price resulting from negotiations between these three purchasers and two U.S. producers determine the LBP, which is reported to industry publications. The price of RGP is the main factor in the LBP, but supply and demand for acetone and phenol also play a role. CR/PR at V-5 n.13. Less commonly used methods for setting prices include adding adjustments to the price of RGP. CR/PR at V-5 to V-6.

[187] Hearing Tr. at 34-35 (Sanders). *See also* Lucite's Posthearing Brief, Answers to Questions at 2-3.

[188] Petitioner's Posthearing Brief, Exhibit 1 at 4-5; Hearing Tr. at 35 (Sanders), 47 (Duhe), and 242-43 (Dougan); *see also* Joint Respondents' Posthearing Brief, Answers to Questions at 59-60.

[189] CR/PR at V-24 and Figure V-10.

[190] 19 U.S.C. § 1677(7)(C)(i).

[191] CR/PR at Table IV-2 (HTS statistical reporting numbers 2914.11.1000 and 2914.11.5000). The Commission issued importer questionnaires to 21 firms believed to be importers of acetone, as well as to all U.S. producers of acetone. Usable questionnaire responses were received from 14 companies, representing *** percent of U.S. imports from Belgium, *** percent of U.S. imports from Korea, *** of U.S. imports from Singapore, *** percent of U.S. imports from South Africa, and *** percent of U.S. imports from Spain under HTS subheadings 2914.11.10 and 2914.11.50. CR/PR at IV-1.

[192] CR/PR at Tables IV-2, C-1.

they continued to enter in elevated volumes through the first four months of 2019.[193] Cumulated subject imports' share of apparent U.S. consumption was 7.0 percent in 2016, 10.3 percent in 2017, and 15.7 percent in 2018.[194]

In light of the foregoing, we find that the volume of cumulated subject imports, and the increase in volume, are significant in both absolute terms and relative to U.S. consumption.

D. Price Effects of the Subject Imports

Section 771(7)(C)(ii) of the Tariff Act provides that, in evaluating the price effects of the 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.[195]

As addressed in section VI.B.3 above, we have found that there is a high degree of substitutability among subject imports and the domestically produced product and that price is an important consideration in purchasing decisions.

The Commission collected quarterly data for the total quantity and f.o.b. value of four pricing products, sold by contract or on the spot market, to unrelated end users or distributors between January 2016 and June 2019.[196] Seven U.S. producers and eight importers provided

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[193] Subject imports were 122,226 short tons in interim 2018 and 88,795 short tons in interim 2019. CR/PR at Tables IV-2, C-1. The petitions were filed in February 2019, but subject imports continued to enter in substantial volumes through April 2019. *See* CR/PR at Table IV-7, Fig. IV-5.

[194] CR/PR at Tables IV-9, C-1. Subject imports' market share was 15.9 percent in interim 2018 and 12.9 percent in interim 2019. *Id.* The domestic industry's market share was 92.2 percent in 2016, 87.8 percent in 2017, and 83.3 percent in 2018. *Id.* Its share was 83.1 percent in interim 2018 and 86.6 percent in interim 2019. *Id.*

[195] 19 U.S.C. § 1677(7)(C)(ii).

[196] CR/PR at V-14.

The complete product descriptions are the following:

> Product 1-- Standard grade acetone, sold in bulk to distributors, spot/short-term contract sales.
>
> Product 2-- Standard grade acetone, sold in bulk to distributors, annual/long-term contract sales.
>
> Product 3-- Standard grade acetone, sold in bulk to end users, spot/short-term contract sales.
>
> Product 4-- Standard grade acetone, sold in bulk to end users, annual/long-term contract sales.

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usable pricing data for sales of the requested products, although not all firms reported pricing for all products for all quarters.[197]

The price comparisons reflect mixed underselling and overselling during the POI as a whole. Cumulated subject imports consisting of 215,557 short tons undersold the domestic like product in 64 of 172 quarterly comparisons, at margins ranging from 0.2 percent to 36.7 percent.[198] Cumulated subject imports consisting of 227,198 short tons oversold the domestic like product in 108 of 172 quarterly comparisons, at margins up to 61.2 percent.[199] Although a slight majority of the subject imports (51.3 percent) oversold the domestic like product over the POI, the underselling increased during 2018 and interim 2019. During 2018 and the first six months of 2019, subject imports totaling *** short tons undersold the domestic like product, as compared to *** short tons that oversold the domestic like product.[200] Underselling was particularly pronounced in the spot market in the second half of 2018, when the volume of subject imports involved in underselling was at its highest.[201]

Additionally, eight purchasers that responded to the purchaser questionnaire reported that the subject imports were priced lower than the U.S. product, and six of these purchasers reported that the lower price of the subject imports was a primary reason for the decision to purchase subject imports rather than domestically produced product.[202] They reported purchasing 69,270 short tons of subject imports instead of domestic product because of lower subject import prices.[203] These purchases were equivalent to 15.3 percent of the 451,344 short tons of subject imports reported purchased during the POI.[204]

Based on the increasing underselling of the domestic like product by subject imports, particularly in the latter part of the POI, the high degree of substitutability of the domestic like product and subject imports, the importance of price in purchasing decisions, and the volume of lost sales, we find that there has been significant underselling of the domestic like product by

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(…Continued)
CR/PR at V-14.

[197] CR/PR at V-14. Pricing data reported by these firms account for more than 99 percent of U.S. producers' reported commercial U.S. shipments and reported commercial U.S. shipments of imports from each subject country. The price data account for over 70 percent of total U.S. shipments of imports from each subject country with the exception of subject imports from *** CR/PR at V-14 to V-15.

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

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

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

[201] CR/PR at Tables V-3 and V-5.

[202] CR/PR at V-30.

[203] CR/PR at Table V-10b.

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

the cumulated subject imports. The significant underselling enabled the subject imports to increase their share of the U.S. market for acetone.

We have also considered price trends for the domestic like product. During the POI, domestic producers' prices increased during 2016 and 2017 and then fluctuated, increasing during the first portion of 2018 before decreasing.[205] Domestic producers' prices for pricing product 4, which accounted for 68 percent of domestic producers' sales, increased overall and during most of the POI.[206] Consequently, we do not find that subject imports significantly depressed domestic prices.[207]

We next consider whether the domestic industry's prices were suppressed during the POI. Although the domestic industry's prices as reflected in net sales values increased during the first three years of the POI, the domestic industry's COGS as a ratio to net sales also

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[205] CR/PR at Fig. V-8. During the POI, domestic producers' prices decreased by 13.8 percent for Product 1 and 8.8 percent for Product 3. Domestic producers' prices increased 2.8 percent for Product 2 and 22.1 percent for Product 4. CR/PR at Table V-7.

[206] CR/PR at V-24; CR/PR at Fig. V-8.

[207] Commissioner Schmidtlein considers the increased discounts negotiated by U.S. producers with purchasers to support a finding of significant price depression. There is uncontroverted evidence of domestic producers being forced to give greater discounts during the POI to purchasers (*i.e.*, they had to lower their price). *See* Petitioner's Posthearing Brief at Exhibit 2 (Sanders Declaration), Exhibit 3 (Duhe Declaration) and Exhibit 4 (Safar Declaration). The decreasing spread between LBP and contained RGP – which was relatively stable during 2016 and 2017 before declining during 2018 and interim 2019 – reflects these greater discounts. *See* CR/PR at Fig. V-3, V-24. Commissioner Schmidtlein finds the change in the negotiated discounts more probative of the impact of subject imports on industry prices than the trends in the absolute sales prices, which are largely driven by raw material costs. *See* Hearing Tr. at 35 (Sanders) ("{T}he absolute price is not what is critical for our business. Rather, we require sufficient margin over raw material costs in order to sustain our business.").

The Commission has previously considered tightening margins as evidence supporting a finding of price depression. *See Certain Steel Concrete Reinforcing Bars From Indonesia, Poland, and Ukraine*, Inv. Nos. 731-TA-875, 880, and 882 (Final), USITC Pub 3425 (May 2001) (price declines exceeded the decrease in domestic raw material costs, reducing producers' margins). Indeed, the parties generally agree that the negotiated discount, or "spread," can serve as a proxy for the negotiated price for acetone. Petitioner's Posthearing Brief, Exhibit 1 at 4-5; Hearing Tr. at 35 (Sanders), 47 (Duhe), and 242-43 (Dougan); *see also* Joint Respondents' Posthearing Brief, Answers to Questions at 59-60. It follows that rising acetone prices in the absolute sense are not necessarily indicative of improving domestic industry financial health, nor are decreasing absolute prices necessary to find significant pressure on producers' negotiated margins. *See* Hearing Tr. at 34-35 (Sanders) ("{R}ising prices do not necessarily correlate {with} improvement in market conditions for domestic producers"). As a result, Commissioner Schmidtlein finds the compression of the spread (whether measured by the difference between LBP and the price of contained RGP, or by domestic producers' weighted average quarterly AUV for all pricing products, less contained RGP), particularly the instances where purchasers demanded mid-contract discount increases (*see, e.g.,* Hearing Tr. at 54 (Duhe); at 118 (Sanders)), supports a finding of significant price depression.

increased to 94.2 percent in 2018, after falling initially from 90.2 percent in 2016 to 86.3 percent in 2017.[208] The overall increase in the ratio resulted from rising raw material costs. The domestic industry's raw material costs increased from $393 per ton in 2016 to $643 per ton in 2018, and the industry's unit COGS increased from $504 per ton in 2016 to $749 per ton in 2018.[209] During interim 2019, the domestic industry's raw material costs and unit COGS were $190 and $198 lower, respectively, than in interim 2018, but the industry's sales values were $245 lower, resulting in a higher COGS to net sales ratio than at any other point during the POI.[210]

Thus, while the domestic industry was able to increase its prices, the price increases were insufficient for the industry to recover its increasing costs in 2018.[211] This cost-price squeeze occurred during a period of growing demand in the U.S. market. Apparent U.S. consumption increased 5.9 percent from 2017 to 2018, and 8.6 percent from 2016 to 2018.[212] During interim 2019, these trends reversed. The industry's prices fell faster than its costs and apparent U.S. consumption was lower than in interim 2018, resulting in further deterioration of the industry's prices relative to its costs.[213]

As discussed, the prices of the domestic industry are set with reference to the LBP, and RGP prices play a primary role in monthly LBP negotiations. The difference between the LBP and the price for RGP (the industry's primary raw material) contained in the acetone is typically referred to as the "spread,"[214] which the parties agree is reflective of revenue relative to

[208] CR/PR at Tables VI-1 and VI-3.

[209] CR/PR at Table VI-1 and VI-3. Net sales values increased from $559 per short ton in 2016 to $794 per ton in 2018 but did not fully offset the increases in unit COGS and raw material costs. *Id.*

[210] CR/PR at Table VI-3. The ratio reached 98.2 percent during interim 2019, higher than in interim 2018 when it was 92.3 percent. *Id.*

[211] Four of the 33 responding purchasers also indicated that the domestic producers had reduced their prices to compete with subject imports; 24 reported that they did not know. CR/PR at V-30.

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

[213] CR/PR at Table C-1. Respondents note that subject imports were lower in interim 2019 relative to interim 2018 and contend that subject imports could not be responsible for the downward pressure on prices during interim 2019. However, the record indicates that contract prices for interim 2019 would have been set well in advance of the period. Contract negotiations typically occur annually, during the fourth quarter of the year, and include negotiations of the percent discount from the LBP. CR/PR at V-11 to V-12. Thus, the negotiations for 2019 contracts took place in the fourth quarter of 2018, a year in which subject imports increased by 91,701 short tons over the prior year (2017) and increased by 21,932 short tons in the spot market. CR/PR at Tables IV-2 and V-2.

[214] *See, e.g.*, Joint Respondents' Posthearing Brief, Answers to Questions at 51.

costs.[215] Although this spread is an indicator, the LBP does not reflect actual sales prices since prices are typically negotiated as a percentage discount off the LBP.[216]

The difference between the industry's aggregated prices, compiled from questionnaire responses, less contained RGP, reflects a decline in the domestic industry's acetone prices relative to its costs.[217] The reduced margins in 2018 and interim 2019 are evidence of the difficulty experienced by the domestic industry in pricing its product at levels commensurate with changing costs. The domestic industry also documented the increasing discounts from the LBP that the industry was forced to offer to purchasers during the POI.[218]

Thus, the record indicates that increasing volumes of subject imports significantly undersold the domestic like product, and the domestic industry's prices were squeezed relative to costs during the POI. This downward pressure on prices occurred both when costs were increasing during 2018, and during interim 2019 when costs were lower than in interim 2018. Thus, we find that subjects imports prevented price increases, which otherwise would have occurred, to a significant degree.

In light of the foregoing, we find that increasing volumes of cumulated subject imports significantly undersold and suppressed to a significant degree prices for domestically produced acetone during the POI. We consequently conclude that the cumulated subject imports had significant adverse price effects.

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[215] *See* Joint Respondents' Posthearing Brief, Answers to Questions at 25, 51-52; Petitioner's Posthearing Brief at 5-6, Answers to Questions at 2-5.

[216] CR/PR at V-5.

[217] *See* CR/PR at Fig. V-10. As discussed above, the aggregated prices are more reflective of actual prices than the LBP alone because they include seller discounts from the LBP, which are negotiated with individual sellers. *See* CR/PR at V-5 to V-6, V-8 n.20. The LBP price less contained RGP also shows a decline in the benchmark price relative to costs. *See* CR/PR at Fig V-3. The spread between the LBP and contained RGP (the amount of RGP needed to produce a pound of acetone) was relatively stable during 2016 and 2017, and then declined during 2018 and interim 2019. *Id.* The parties agree that oversupply of acetone may reduce the spread between RGP and LBP. *See* Petitioner's Posthearing Brief at 5; Hearing Tr. at 271-72 (Dougan).

[218] AdvanSix, Olin, and Altivia all offered deeper discounts to their customers over the POI. CR/PR at V-6 n.17; Petitioner's Posthearing Brief, Exhibit 1, Answers to Questions at 5, 19, and 33; Hearing Tr. at 48 (Duhe) ("no adders were even achievable"). In response to requests from the Commission, Petitioner provided extensive documentation of the discounts offered by the petitioning firms, their contract negotiations, and their production decisions. *See* Petitioner's Posthearing Brief at Exhibit 2 (Sanders Declaration), Exhibit 3 (Duhe Declaration) and Exhibit 4 (Safar Declaration).

E. Impact of the Subject Imports[219]

Section 771(7)(C)(iii) of the Tariff Act provides that in examining the impact of subject imports, the Commission "shall evaluate all relevant economic factors which have a bearing on the state of the industry."[220] 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 debts, research and development, and factors affecting domestic prices. No single factor is dispositive and all relevant factors are considered "within the context of the business cycle and conditions of competition that are distinctive to the affected industry."[221]

The domestic industry's performance declined over the POI, notwithstanding the increase in apparent U.S. consumption during the three full years. The industry's production

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[219] The statute instructs the Commission to consider the "magnitude of the dumping margin" in an antidumping proceeding as part of its consideration of the impact of imports. 19 U.S.C. § 1677(7)(C)(iii)(V). In its final determinations of sales at less value, Commerce found dumping margins of 66.42 to 131.75 percent for imports from Singapore, and 137.39 to 171.81 percent for imports from Spain. *Acetone From Singapore: Final Determination of Sales at Less Than Fair Value*, 84 Fed. Reg. 56171, 56172 (October 21, 2019); *Acetone From Spain: Final Determination of Sales at Less Than Fair Value, and Final Determination of No Shipments*, 84 Fed. Reg. 56166, 56167 (October 21, 2019). In its preliminary determinations, Commerce found dumping margins of 28.17 percent for imports from Belgium, 45.85 for South Africa, and 4.67 to 47.70 percent for imports from South Korea. *Acetone From Belgium: Preliminary Affirmative Determination of Sales at Less Than Fair Value, Postponement of Final Determination, and Extension of Provisional Measures*, 84 Fed. Reg. 49999, 50000 (September 24, 2019); *Acetone From the Republic of South Africa: Preliminary Affirmative Determination of Sales at Less Than Fair Value, Postponement of Final Determination, and Extension of Provisional Measures*, 84 Fed. Reg. 49984, 49985 (September 24, 2019); *Acetone From the Republic of Korea: Preliminary Affirmative Determination of Sales at Less Than Fair Value, Postponement of Final Determination, and Extension of Provisional Measures*, 84 Fed. Reg. 50005, 50006 (September 24, 2019).

We have considered the above dumping margins. In addition to this consideration, our impact analysis has considered other factors affecting domestic prices. Our analysis of the significant underselling and price effects of cumulated subject imports, described in both the price effects discussion and below, is particularly probative to an assessment of the impact of the subject imports on the domestic industry.

[220] 19 U.S.C. § 1677(7)(C)(iii); *see also* SAA at 851 and 885 ("In material injury determinations, the Commission considers, in addition to imports, other factors that may be contributing to overall injury. While these factors, in some cases, may account for the injury to the domestic industry, they also may demonstrate that an industry is facing difficulties from a variety of sources and is vulnerable to dumped or subsidized imports.").

[221] 19 U.S.C. § 1677(7)(C)(iii). This provision was amended by the Trade Preferences Extension Act of 2015, Pub. L. 114-27.

capacity[222] and production[223] declined, while its capacity utilization was relatively stable.[224] The domestic industry's U.S. shipments declined 1.9 percent from 2016 to 2018 despite apparent U.S. consumption increasing by 8.6 percent.[225] The industry's shipments were also lower in interim 2019 than in interim 2018, consistent with lower apparent U.S. consumption in interim 2019 than in interim 2018.[226] [227]

The domestic industry lost market share to the increasing volumes of cumulated subject imports that significantly undersold the domestic product. The industry's share of apparent U.S. consumption fell from 92.2 percent in 2016 to 87.8 percent in 2017, and 83.3 percent in 2018.[228]

The domestic industry's employment-related indicia generally declined over the POI. From 2016 to 2018, the domestic industry's number of production related workers ("PRWs"),[229]

[222] The domestic industry's capacity increased from 1.63 million short tons in 2016 to 1.73 million short tons in 2017, and then decreased to 1.58 million short tons in 2018. CR/PR at Table III-4. Its production was 684,000 short tons in interim 2018 and 650,000 short tons in interim 2019. *Id.*

[223] The industry's production increased from 1.37 million short tons in 2016 to 1.40 million short tons in 2017 and then decreased to 1.33 million short tons in 2018. CR/PR at Table III-4. Its production was 684,000 short tons in interim 2018 and 650,000 short tons in interim 2019. *Id.*

[224] The domestic industry's capacity utilization fluctuated from 84.5 percent in 2016 to 80.8 percent in 2017 and then 84.5 percent in 2018. CR/PR at Table III-4. It was 86.5 percent in interim 2018 and 82.3 percent in interim 2019. *Id.*

[225] CR/PR at Table C-1. The domestic industry's U.S. shipments were 1.29 million short tons in 2016, 1.26 million short tons in 2017, and 1.27 million short tons in 2018. CR/PR at Table III-6. U.S. shipments were 639,000 short tons in interim 2018 and 595,000 short tons in interim 2019. *Id.*

The domestic industry's net sales (by quantity) declined from 1.18 million short tons in 2016 to 1.17 million short tons in 2017 and to 1.15 million short tons in 2018. CR/PR at Table VI-1. They totaled 564,000 short tons in interim 2018 and 536,000 short tons in interim 2019. *Id.*

[226] Production, shipments, and net sales were lower by 5.0 percent, 6.9 percent, and 5.1 percent, respectively, in interim 2019 than in interim 2018. CR/PR at Table C-1.

[227] The domestic industry's inventories grew absolutely and relative to production and shipments. U.S. producers' end-of-year inventories were 55,102 short tons in 2016, 67,788 short tons in 2017, and 58,410 short tons in 2018. CR/PR at Table III-7. They grew as a share of total shipments from 4.0 percent in 2016 to 4.4 percent in 2018. CR/PR at Table III-7. They were also higher in interim 2019, at 76,436 short tons, than in interim 2018, at 73,726 short tons. *Id.* The domestic industry leased additional storage tanks in 2018 to hold its acetone inventories. *See* CR/PR at Table III-8. Poor market conditions in 2018 also forced ***. CR/PR at III-9, VI-23.

[228] CR/PR at Tables IV-9 and C-1.

[229] The number of PRWs fell from 620 in 2016 to 593 in 2017 and then increased to 608 in 2018. CR/PR at Table III-10. PRWs totaled 621 in interim 2018 and 621 in interim 2019. *Id.*

hours worked,[230] and wages paid declined,[231] but hourly wages increased.[232] Worker productivity increased irregularly from 2016 to 2018.[233] The industry's employment indicators were all lower in interim 2019 compared to interim 2018.[234]

The domestic industry's financial performance fluctuated, but deteriorated over most of the POI.[235] Although the domestic industry's sales revenues increased over the POI,[236] virtually all of the industry's financial indicia declined overall during the three years and in the interim period comparison.[237] The industry's operating income fluctuated but *** percent over the three full years.[238] The industry's net income in 2016 and 2017 turned to a net loss in 2018.[239] Likewise, the domestic industry's reported operating and net income margins fluctuated but decreased overall during the POI. The domestic industry reported operating losses in interim 2019 and net income losses in 2018 and interim 2019.[240]

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[230] Total hours worked declined from 1.48 million hours in 2016 to 1.39 million hours in 2017 and then increased to 1.40 million hours in 2018. CR/PR at Table III-10. They totaled 681,000 in interim 2018 and 678,000 in interim 2019. *Id.*

[231] Wages paid decreased from $71.2 million in 2016 to $69.3 million in 2017 and then increased to $70.3 million in 2018. CR/PR at Table III-10. They were $35.3 million in interim 2018 and $33.5 million in interim 2019. *Id.*

[232] Hourly wages increased from $48.09 in 2016 to $49.73 in 2017 and $50.32 in 2018. CR/PR at Table III-10. They were $51.81 in interim 2018 and $49.37 in interim 2019. *Id.*

[233] Productivity was 928.9 short tons per 1,000 hours in 2016, 1,003.8 short tons per 1,000 hours in 2017, and 954.7 short tons per 1,000 hours in 2018. CR/PR at Table III-10. Productivity was 1,003.8 short tons per 1,000 hours in interim 2018 and 958.1 short tons per 1,000 hours in interim 2019. *Id.*

[234] *See* CR/PR at Tables III-10 and C-1.

[235] The domestic industry's financial condition improved in 2017 relative to 2016 as the spread between contained RGP and aggregated prices fluctuated during 2017 and did not begin a relatively steady decline until 2018. *See* CR/PR at Fig. V-10.

[236] The domestic industry's net sales revenues were $659.9 million in 2016, $913.3 million in 2017, and $912.5 million in 2018. CR/PR at Tables VI-1. Revenues were $*** in interim 2018 and $292.1 million in interim 2019. *Id.*

[237] The domestic industry's gross profits were $64.9 million in 2016, $125.4 million in 2017, and $52.5 million in 2018. CR/PR at Tables VI-1, C-1. Gross profits were $34.3 million in interim 2018 and $5.3 million in interim 2019. *Id.*

[238] CR/PR at Table C-1. The domestic industry's operating income was $41.4 million in 2016, $88.0 million in 2017, and $16.8 million in 2018. CR/PR at Tables VI-1, C-1. Operating income was $17.9 million in interim 2018 and $negative 9.2 million in interim 2019. *Id.*

[239] The domestic industry's net income was $38.3 million in 2016, $83.6 million in 2017, and $negative 3.1 million in 2018. CR/PR at Tables VI-1, C-1. Net income was $16.1 million in interim 2018 and $negative 20.8 million in interim 2019. The domestic industry's cash flow grew from $*** in 2016 to $*** in 2017, then declined to $*** in 2018. It was $*** in interim 2018 and $*** in interim 2019. CR/PR at Table VI-1.

[240] The domestic industry's operating income as a share of net sales was 6.3 percent in 2016, 9.6 percent in 2017, and 1.8 percent in 2018. CR/PR at Tables VI-1, C-1. Operating income as a share of net (Continued...)

The domestic industry's capital expenditures declined during the three years of the POI, but its R&D expenditures increased.[241] The domestic industry's assets increased but its return on assets declined from 2016 to 2018.[242] Finally, the domestic industry reported a number of negative effects on investment and on growth and development due to subject imports during the POI, including ***.[243]

Thus, as apparent U.S. consumption increased, the domestic industry faced increasing volumes of cumulated subject imports that significantly undersold the domestic product and captured market share from the domestic industry, reduced the industry's production, shipments, and sales, and prevented the industry from benefiting from the increase in demand over the three-year period 2016-18. Further, the increasing volume of subject imports suppressed the industry's prices, resulting in a cost-price squeeze and declining financial performance during the latter portion of the POI.[244]

The domestic industry's prices were lower than they would have otherwise been, and the domestic industry suffered declines in its trade data, revenues, and financial condition because of the subject imports. We therefore find that cumulated subject imports had a significant adverse impact on the domestic industry.

Joint Respondents claim that supply disruptions explain the influx of subject imports during the POI and that the domestic industry was unable or unwilling to supply purchasers with acetone. Respondents assert that the impact of Hurricane Harvey in August 2017 and the announcement in October of 2017 that Shell would shut down one of its production facilities in

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(…Continued)
sales was 4.0 percent in interim 2018 and negative 3.2 percent in interim 2019. *Id.* The domestic industry's net income as a share of net sales was 5.8 percent in 2016, 9.2 percent in 2017, and negative 0.3 percent in 2018. *Id*. Net income as a share of net sales was 3.6 percent in interim 2018 and negative 7.1 percent in interim 2019. *Id*

[241] CR/PR at Tables VI-6, C-1. The domestic industry's capital expenditures were $*** in 2016, $*** in 2017, and $*** in 2018. CR/PR at Tables VI-6, C-1. Capital expenditures were $*** in interim 2018 and $*** in interim 2019. The domestic industry's R&D expenses increased overall during the POI, from $*** in 2016 to $*** in 2017 and $*** in 2018. *Id*. The domestic industry's R&D expenses were $*** in interim 2018 and $*** in interim 2019. *Id.*

[242] Total net assets were $152.8 million in 2016, $192.4 million in 2017, and $275.5 million in 2018. CR/PR at Table VI-7. The industry's operating return on assets was 27.1 percent in 2016, 45.7 percent in 2017, and 6.1 percent in 2018. *Id.*

[243] CR/PR at Tables VI-8 and VI-9.

[244] Commissioner Schmidtlein also finds that the increasing volume of subject imports depressed the industry's prices, as reflected in the increasing discounts accepted by domestic producers in 2018 and interim 2019. These increased discounts caused the industry to experience declining financial performance during the latter part of the POI.

early 2018 led to purchaser concerns with respect to the U.S. supply, particularly toward the end of 2017 when contracts were being negotiated for 2018.[245]

Respondents argue that subject imports were drawn into the market in 2018 because of this concern and because domestic producers refused to conclude or renew contracts with purchasers and instead chose to chase profits on the spot market.[246] While we acknowledge there were supply disruptions toward the end of 2017, those disruptions affected demand for downstream products as well and were largely resolved by the end of 2017.[247] In addition, while Shell's plant closure reduced supply of acetone in the market, Altivia's restarting of a production line in 2017 offset a substantial portion of the decline attributable to the Shell closure.[248] [249]

We do not agree that domestic producers were unwilling to contract for acetone at the end of 2017 or that their increased participation in the spot market drove the 2018 increase in subject imports. The instances described by respondents of domestic producers refusing to enter into contracts at the end of 2017 are limited and in any event cannot account for the increase in the volume of subject imports in 2018.[250] In addition, certain instances are countered by contemporaneous business records submitted by petitioner showing where certain purchasers declined to purchase or receive acetone offered by U.S. producers in

[245] Joint Respondents' Posthearing Brief at 1-4.

[246] Joint Respondents' Prehearing Brief at 99; Joint Respondents' Posthearing Brief at 1-6.

[247] CR/PR at II-12.

[248] *See* CR/PR Table III-4.

[249] The domestic industry also consistently had sizable excess capacity over the POI, indicating that it could have increased production if it was needed in the expanding U.S. market for acetone. Instead, due to the rising presence of subject imports the domestic industry's shipment quantities stagnated. *See* CR/PR at Tables III-3, III-4, and III-6.

[250] *See* Joint Respondents' Posthearing Brief, Answers to Questions at 2 and Exhibit 8; Lucite's Posthearing Brief at 4; Lucite's Final Comments at 1-2. Joint Respondents' Exhibit 8 shows an email exchange in which Olin indicated it was not able to offer Monument additional contract volume available for 2018 beyond the five barges it had already offered. Joint Respondents' Posthearing Brief, Exhibit 8. Lucite, a large purchaser, indicates that domestic producers bid on its acetone business for 2018 and 2019, and that it declined to purchase from a domestic producer because the quantities offered were insufficient in one instance, and Lucite's needs changed in another. Lucite's Final Comments at 2. *See also* Joint Respondents Posthearing Brief at 4 (*** reported reduced availability from domestic supplier in 2018). Petitioner disputes respondents' contention that the petitioning firms were unwilling and unable to supply contract volume for 2018. *See* Petitioner's Posthearing Brief, Exhibit 2 at 7-8 (Sanders Declaration), Exhibit 3 at 4-5 (Duhe Declaration), Exhibit 4 (Safar Declaration). The record also indicates that purchasers rated the domestic product and subject imports as comparable with respect to availability and reliability of supply. CR/PR at Table II-11. The increasing discounts offered by domestic producers (discussed earlier) are also inconsistent with the alleged unwillingness of domestic producers to supply product.

2018.[251] With respect to spot sales, although the industry's share of spot market sales increased modestly, it continued to make most of its sales through long-term and annual contracts in 2017 and 2018, and spot sales increased for both domestic producers and subject imports in 2018.[252]

Regardless of any perceived shortage at the end of 2017, the parties agree that the U.S. market was oversupplied in 2018.[253] Respondents maintain that the domestic industry was responsible for the oversupply of acetone ("a long market") in 2018 that led to smaller margins over RGP prices.[254]

We are not persuaded by respondents' argument that domestic producers bear responsibility for the oversupply. [255] Subject imports continued to enter the market in large volumes throughout 2018 and through the first four months of 2019, despite the oversupply.[256] The domestic industry's production, on the other hand, was relatively stable and even declined slightly from 2017 to 2018.[257] Its storage of acetone increased 14.6 percent in 2018 compared to 2017.[258]

Joint Respondents further contend that acetone production decisions are primarily driven by conditions in the phenol market and that these conditions led to an oversupply of acetone during the POI.[259] We do not find that production decisions for acetone are driven entirely by demand for phenol. The record indicates that both products generate significant

[251] *See* Petitioner's Posthearing Brief, Exhibit 2 (Sanders Declaration) at 1-4 (***), Exhibit 3 (Duhe Declaration) at 4-5 (several purchasers reduced volume from Altivia in 2018), Exhibit 4 (Safar Declaration) at 1-3 (***).

[252] *See* CR/PR at Table V-2. Subject imports' spot sales increased from 15.1 percent of sales in 2017 to 24.0 percent of sales in 2018 while domestic producers' spot sales increased from 6 percent of sales in 2017 to 13.5 percent of sales in 2018. *Id.*

[253] *See* Petitioner's Posthearing Brief at 12-14; Joint Respondents' Posthearing Brief, Answers to Questions at 37; Joint Respondents' Final Comments at 1-2.

[254] Joint Respondents' Posthearing Brief, Answers to Questions at 37, 52; Joint Respondents' Final Comments at 1-2.

[255] Respondents claim that the "short" market expected at the end of 2017 for 2018 never occurred because the domestic industry (specifically the petitioning firms) oversupplied the market in 2018. *See, e.g.,* Joint Respondents' Final Comments at 3-6.

[256] *See* CR/PR at Tables IV-2 and IV-7.

[257] CR/PR at Table III-4. The industry's production fell to 649,230 short tons in the second half of 2018 from 683,566 short tons in the first half. *Id.* Further, *** reported reducing their production of acetone due to market conditions during the POI, primarily during 2018. *See* CR/PR at Table III-3.

[258] *See* CR/PR at Table III-8.

[259] Joint Respondents' Prehearing Brief at 12-14.

revenues,[260] and demand for both products was higher during 2018 when there was an oversupply of acetone.[261]

Respondents have also argued that the subject imports cannot be the cause of material injury because the increase in 2017 did not adversely affect the domestic industry's financial condition.[262] Respondents' argument, however, ignores that the domestic industry lost market share to subject imports in 2017. Moreover, subject imports entered in even greater quantities in 2018, and with greater underselling, at a time when there was an acknowledged oversupply in the market.[263] As a result, the domestic industry's financial condition worsened in 2018 and 2019.

We have also considered whether there are other factors that may have had an impact on the domestic industry during the POI to ensure that we are not attributing injury from such other factors to subject merchandise. We have considered the role of nonsubject imports and demand in the U.S. market. Nonsubject imports had a minimal presence in the U.S. market during the POI, always accounting for less than 2.0 percent of apparent U.S. consumption.[264] As described above, demand increased from 2016 to 2018, before declining in the interim period comparison.[265] Accordingly, neither nonsubject imports nor trends in demand can explain the

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[260] *See* CR/PR at Table VI-5. Revenues from the sale of phenol generally exceeded those from the sale of acetone as phenol is produced in greater quantities in the cumene production process. However, revenues from the sale of acetone exceeded revenues from the sale of phenol in 2017. Most domestic producers indicated that they consider acetone in their production decision to some extent. Three U.S. producers (***) reported that their production decisions for acetone are driven equally by acetone and phenol, two producers (***) reported that their production decisions are primarily driven by phenol, and one producer (***) reported that its production decisions are solely driven by phenol. CR/PR at II-9. *See also* Petitioner's Posthearing Brief Exhibit 3 at 5-6 (Duhe Declaration); Petitioner's Final Comments at 8-9 (discussing production decisions of individual producers).

[261] *See* CR/PR at Fig. II-1. U.S. demand increased by 4.7 percent for acetone and 6.7 percent for phenol during 2018. *See* CR/PR at II-1. Regardless of demand trends, the domestic industry's acetone production declined in 2018 compared to 2017 and was lower in the second half of 2018 than the first half. *See* CR/PR at Table III-4. Therefore, it was not the domestic industry's production decisions that drove an oversupply of acetone during 2018.

[262] Joint Respondents' Posthearing Brief at 11.

[263] CR/PR at Table C-1. Monthly import statistics indicate that subject imports increased substantially in the latter half of 2017. *See* CR/PR at Table IV-7, Fig. IV-5. The domestic industry's financial condition improved in 2017 relative to 2016 as the spread between contained RGP and aggregated prices fluctuated during 2017 and did not begin a relatively steady decline until 2018. *See* CR/PR at Fig. V-10.

[264] *See* CR/PR at Table IV-9. Nonsubject imports accounted for 0.9 percent of apparent U.S. consumption in 2016, 1.9 percent in 2017 and 1.0 percent in 2018. They accounted for 1.1 percent of apparent U.S. consumption in interim 2018 and 0.4 percent in interim 2019. *Id.*

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

domestic industry's declining performance during the POI, which began prior to demand weakening in interim 2019.

VII. Conclusion

For the reasons stated above, we determine that an industry in the United States is materially injured by reason of subject imports of acetone from Singapore and Spain that are sold in the United States at less than fair value.

Part I: Introduction

Background

These investigations result from petitions filed with the U.S. Department of Commerce ("Commerce") and the U.S. International Trade Commission ("USITC" or "Commission") by AdvanSix Inc., Parsippany, New Jersey, Altivia Petrochemicals, LLC, Haverhill, Ohio, and Olin Corporation, Clayton, Missouri, on February 19, 2019, 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 acetone[1] from Belgium, Korea, Singapore, South Africa, and Spain. The following tabulation provides information relating to the background of these investigations.[2] [3]

Effective date	Action
February 19, 2019	Petitions filed with Commerce and the Commission; institution of the Commission's investigations (84 FR 6819, February 28, 2019)
March 11, 2019	Commerce's notice of initiation (84 FR 9755, March 18, 2019)
April 5, 2019	Commission's preliminary determinations
August 5, 2019	Commerce's preliminary determinations (Singapore: 84 FR 38005 and Spain:84 FR 37990)
July 29, 2019	Scheduling of final phase of Commission's investigations (84 FR 44635, August 26, 2019)
October 21, 2019	Commerce's final determinations (Singapore: 84 FR 56171 and Spain: 84 FR 56166)
October 21, 2019	Commission's hearing
November 14, 2019	Commission's vote (Singapore and Spain)
December 5, 2019	Commission's views (Singapore and Spain)

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

Statutory criteria

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

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

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

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

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

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

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

Organization of report

Part I of this report presents information on the subject merchandise, subsidy/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

Acetone is used both as a chemical intermediate in the production of other chemicals (e.g., plastics and pharmaceuticals) and as a solvent. The leading U.S. producers of acetone are *** and ***, while leading producers of acetone outside the United States include *** of Belgium, *** of Korea, *** of Singapore, *** of South Africa and *** of Spain. The leading U.S. importers of acetone from Belgium are INEOS from Belgium, *** from Korea, *** from Singapore, *** from South Africa, and *** from Spain. Leading importers of product from nonsubject countries is ***. U.S. purchasers of acetone are firms that produce methyl methacrylate ("MMA"), bisphenol A ("BPA"), and other downstream chemical products, and chemical distributors; leading purchasers include MMA producers ***.

Apparent U.S. consumption of acetone totaled approximately 1.5 million short tons ($1.2 million) in 2018. U.S. producers' U.S. shipments of acetone totaled 1.3 million short tons ($1.0 billion) in 2018, and accounted for 83.3 percent of apparent U.S. consumption by quantity and 84.3 percent by value. U.S. imports from subject sources totaled 239,487 short tons ($176.9 million) in 2018 and accounted for 15.7 percent of apparent U.S. consumption by

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

quantity and 14.8 percent by value. U.S. imports from nonsubject sources totaled 14,875 short tons ($11.1 million) in 2018 and accounted for 1.0 percent of apparent U.S. consumption by quantity and 0.9 percent by value.

Summary data and data sources

A summary of data collected in these investigations is presented in appendix C, tables C-1 and C-2. Except as noted, U.S. industry data are based on questionnaire responses of eight firms that accounted for the vast majority of U.S. production of acetone during 2018. Fourteen U.S. importers submitted questionnaires representing *** percent of subject imports and *** percent of all imports. In light of this coverage, U.S. imports are based on official import statistics. In particular, questionnaire data represent *** percent of imports from Belgium; *** percent of imports from Korea; *** imports from Singapore; *** percent of imports from South Africa; and *** percent of imports from Spain in 2018.

Previous and related investigations

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

Nature and extent of sales at LTFV

Sales at LTFV

On August 5, 2019, Commerce published a notice in the *Federal Register* of its preliminary determinations of sales at LTFV with respect to imports from Singapore[6] and Spain.[7] On October 21, 2019, Commerce published a notice in the *Federal Register* of its final determinations of sales at LTFV with respect to imports from Singapore[8] and Spain.[9] Table I-1 presents Commerce's dumping margins with respect to imports of acetone from Singapore and Spain.

Table I-1
Acetone: Commerce's preliminary and final weighted-average LTFV margins with respect to imports from Singapore and Spain

Exporter	Producer	Preliminary dumping margin (percent)	Final dumping margin (percent
Singapore			
Mitsui Phenols Singapore Pte. Ltd	Mitsui Phenols Singapore Pte. Ltd	131.75	131.75
All others		66.42	66.42
Spain			
CEPSA Quimica, S.A	CEPSA Quimica, S.A	171.81	171.81
All others		137.39	137.39

Source: 84 FR 38005 and 84 FR 37990, August 5, 2019 and 84 FR 56171 and 84 FR 56167, October 21, 2019.

[6] Acetone from Singapore: Preliminary Affirmative Determination of Sales at Less than Fair Value, 84 FR 38005, August 5, 2019.

[7] Acetone from Spain: Preliminary Affirmative Determination of Sales at Less than Fair Value, and Preliminary Determination of No Shipments, 84 FR 37990, August 5, 2019.

[8] Acetone from Singapore: Final Affirmative Determination of Sales at Less than Fair Value, and Final Determination of No Shipments, 84 FR 56171, October 21, 2019..

[9] Acetone from Spain: Final Affirmative Determination of Sales at Less than Fair Value, and Final Determination of No Shipments, 84 FR 56166, October 21, 2019.

The subject merchandise

Commerce's scope

In the current proceeding, Commerce has defined the scope as follows:[10]

> *The merchandise covered by these investigations is all grades of liquid or aqueous acetone. Acetone is also known under the International Union of Pure and Applied Chemistry (IUPAC) name propan-2-one. In addition to the IUPAC name, acetone is also referred to as β-ketopropane (or betaketopropane), ketone propane, methyl ketone, dimethyl ketone, DMK, dimethyl carbonyl, propanone, 2-propanone, dimethyl formaldehyde, pyroacetic acid, pyroacetic ether, and pyroacetic spirit. Acetone is an isomer of the chemical formula C_3H_6O, with a specific molecular formula of CH_3COCH_3 or $(CH_3)_2CO$.*
>
> *The scope covers both pure acetone (with or without impurities) and acetone that is combined or mixed with other products, including, but not limited to, isopropyl alcohol, benzene, diethyl ether, methanol, chloroform, and ethanol. Acetone that has been combined with other products is included within the scope, regardless of whether the combining occurs in third countries. The scope also includes acetone that is commingled with acetone from sources not subject to this investigation. For combined and commingled products, only the acetone component is covered by the scope of this investigation. However, when acetone is combined with acetone components from sources not subject to these investigations, those third country acetone components may still be subject to other acetone investigations.*
>
> *Notwithstanding the foregoing language, an acetone combination or mixture that is transformed through a chemical reaction into another product, such that, for example, the acetone can no longer be separated from the other products through a distillation process (e.g., methyl methacrylate (MMA) or Bisphenol A (BPA)), is excluded from these investigations.*

[10] U.S. Department of Commerce (DOC), "Acetone From Singapore: Final Determination of Sales at Less Than Fair Value," *Federal Register*, October 21, 2019, https://www.govinfo.gov/content/pkg/FR-2019-10-21/pdf/2019-22872.pdf; DOC, "Acetone From Spain: Final Determination of Sales at Less Than Fair Value, and Final Determination of No Shipments," *Federal Register*, October 21, 2019. https://www.govinfo.gov/content/pkg/FR-2019-10-21/pdf/2019-22879.pdf. 84 FR 56167, October 21, 2019.

A combination or mixture is excluded from these investigations if the total acetone component (regardless of the source or sources) comprises less than 5 percent of the combination or mixture, on a dry weight basis. The Chemical Abstracts Service (CAS) registry number for acetone is 67–64–1.

Tariff treatment

Based upon the scope set forth by the Department of Commerce, information available to the Commission indicates that the merchandise subject to these investigations is provided for in subheadings 2914.11.1000 ("Derived in whole or in part from cumene") and 2914.11.5000 ("Other") of the Harmonized Tariff Schedule of the United States ("HTS"). The 2019 general rates of duty are 5.5 percent ad valorem and free, respectively. U.S. imports of acetone from China are also subject to an additional 10 percent ad valorem under Section 301 of the Trade Act of 1974.[11] Decisions on the tariff classification and treatment of imported goods are within the authority of U.S. Customs and Border Protection.

Subject merchandise also includes acetone that is combined or mixed with other products, including, but not limited to, benzene, diethyl ether, methanol, chloroform, and ethanol, whether or not processed in a third country. These products are provided for in various HTS subheadings, depending on their chemical structure and essential character.[12]

The product[13]

Description and applications

Acetone, also known as dimethyl ketone, propan-2-one, or 2-propanone, among other names, is an organic chemical with the formula $(CH_3)_2CO$. Acetone is used both as a chemical

[11] *Notice of Modification of Section 301 Action: China's Acts, Policies, and Practices Related to Technology Transfer, Intellectual Property, and Innovation*, 83 FR 47974, September 21, 2018.

[12] In the preliminary phase of the investigations, no firms reported importing acetone mixed any other chemicals.

[13] Unless otherwise noted, this information is based on the petition; *Hawley's Condensed Chemical Dictionary*, 11th edition; "Chemical Intermediates: Acetone," AdvanSix Product Safety Summary, May 2018, https://www.advansix.com/assets/uploads/2018/06/Acetone_CAS-67-64-1-PRS_v2DIGITAL.pdf; "Acetone: Technical Data Sheet," Shell Chemicals, https://www.shell.com/businesscustomers/chemicals/ourproducts/acetone/_jcr_content/par/textimage.stream/1516690469896/cc2d0fa6d571143b0ebf06521324ccee43bfd729a3f13c5dfd636a0eb6c63049/acetone-u8903-dec-2017.pdf; IHS Markit, "Acetone," a summary of the full report, dated August 2018, https://ihsmarkit.com/products/acetone-chemical-economics-handbook.html.

intermediate in the production of other chemicals (e.g., plastics and pharmaceuticals) and as a solvent. Acetone is a clear colorless liquid with a sweet odor.

Acetone is typically sold as technical grade product (reportedly about 98 percent of the market) but some specialty products of higher purity and/or containing no benzene are also available.[14] The grades generally differ by the kind and amounts of impurities (e.g., benzene, mesityl oxide, and diacetone alcohol, among others) in the product.[15] Some customers' requirements for acetone purity exceed those of the technical grade. These higher purity products are often referred to as "pharmaceutical grade" acetone or acetone with no benzene, but the purity standards for these products are set by individual customers, not by government or industry organizations.

Acetone is used as a solvent in many products, including gums, resins, fats, greases, paints, oils, coatings, waxes, plastics, dyestuffs, cellulosics, and rubber cements.[16] Use as a solvent represents approximately 34 percent of global consumption of acetone in 2017.[17] Acetone is also used as an input for production of MMA (approximately 25 percent of global consumption) and bisphenol A ("BPA") (lower than the 2017 MMA share but expected to reach or exceed MMA consumption levels by 2022);[18] other solvents; and a wide variety of coatings and plastics.[19]

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[14] Petition, p. 5 and conference transcript, pp. 25-26 (Sanders).

[15] Emma Quirk, Adrian Doggett, Alison Bretnall, "Determination of residual acetone and acetone related impurities in drug product intermediates prepared as Spray Dried Dispersions (SDD) using gas chromatography with headspace autosampling (GCHS)," *Journal of Pharmaceutical and Biomedical Analysis,* August 5, 2014 https://www.sciencedirect.com/science/article/abs/pii/S073170851400154X; ***. Parties do not agree as to whether benzene is an impurity. Respondent (Sasol) stated that "purity is unrelated to the benzene content . . . ." Hearing transcript, p. 196 (Harypursat).

[16] Petition, 5; IHS Markit, "Acetone," a summary of the full report, dated August 2018, https://ihsmarkit.com/products/acetone-chemical-economics-handbook.html; retrieved March 9, 2019, AdvanSix, "Acetone: Technical Datasheet," May 2018-3, https://www.advansix.com/chemicalintermediates/?document=acetone&download=1.

[17] Global consumption estimates from IHS Markit, "Acetone," a summary of the full report, dated August 2018, https://ihsmarkit.com/products/acetone-chemical-economics-handbook.html; retrieved March 9, 2019.

[18] Global consumption estimates from IHS Markit, "Acetone," a summary of the full report, dated August 2018, https://ihsmarkit.com/products/acetone-chemical-economics-handbook.html, retrieved March 9, 2019.

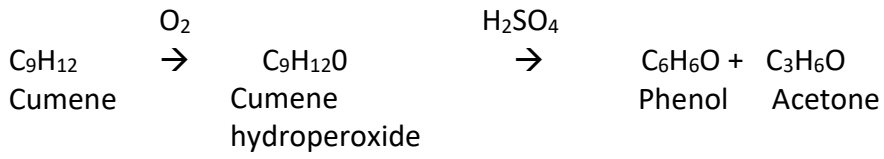
[19] AdvanSix, "Acetone: Technical Datasheet," May 2018-3, https://www.advansix.com/chemicalintermediates/?document=acetone&download=1; IHS Markit, "Acetone," a summary of the full report, dated August 2018, https://ihsmarkit.com/products/acetone-chemical-economics-handbook.html, retrieved March 9, 2019.

Manufacturing processes

The three main synthetic chemical processes for the commercial production of acetone are the cumene peroxidation process; the catalytic dehydrogenation of isopropyl alcohol; and the conversion of coal through the Fischer-Tropsch process.[20] The cumene process is used to produce almost all acetone manufactured globally. Most of the remainder (reportedly less than 10 percent) of global production is produced by Dow in Institute, WV, using the isopropyl alcohol (IPA) process and by Sasol in South Africa through the coal conversion process.[21] The acetone produced by Dow and Sasol is benzene-free.[22] Sasol states that its acetone has a purity level of 99.90 percent mass purity.[23]

In the cumene peroxidation process, cumene is oxidized in air to produce cumene hydroperoxide. The cumene hydroperoxide is then cleaved with sulfuric acid to form phenol and acetone. As noted by the petitioners, acetone is produced in the following ratios: one unit of acetone is produced for every 2.21 units of cumene and 0.61 pounds of acetone for every pound of phenol.[24] The acetone is then separated from the mixture using distillation.[25] A chemical schematic of the process is shown in figure I-1.

Figure I-1
Acetone: A chemical schematic of the cumene peroxidation process



Source: Commission staff based on numerous sources.

[20] It was mentioned in the preliminary report that Green Biologics produced benzene-free renewable acetone using microbial biocatalytic fermentation of certain sugars and that, chemically, it was the same as the subject product. In a September 2019 update, however, the company noted on its website that it was closing down due to a lack of funding. https://greenbiologics.com/what-we-do/acetone/; retrieved March 9, 2019; https://greenbiologics.com/; retrieved October 1, 2019.

[21] Petition, 7; conference transcript, pp. 6, 7, and 10 (Grimson).

[22] Conference transcript, pp. 6, 7, and 10 (Grimson).

[23] Sasol, "Acetone," n.d. https://products.sasol.com/pic/products/home/grades/ZA/5acetone/index.html.

[24] Petition, p. 8.

[25] Petition, p. 8.

In the catalytic dehydrogenation of IPA, a catalyst such as brass or copper is used to convert isopropyl alcohol into acetone.[26] Use of isopropyl alcohol as an input results in production of benzene-free acetone.[27] Dow has traditionally been the sole U.S. company using this process.[28]

In the conversion of coal through the Fischer-Tropsch process, coal is gasified to form syngas. The syngas is then converted to numerous downstream chemicals, including acetone, through the Fischer-Tropsch synthesis; two chemical reactions—hydrogenation and polymerization--occur during the syngas conversion. The acetone is then separated from the resulting process stream.[29]

Acetone is very flammable and must be transported and stored accordingly. Welded carbon steel tanks with appropriate grounding and venting systems are recommended for storage. The tanks do not have to be lined except when high-purity acetone is stored; in such cases, use of an inorganic zinc lining is suggested. Also, it is recommended that the acetone be stored in the tank under an inert nitrogen pad/blanket.[30] The tanks should be kept in flammable storage areas away from oxidizers and fire sources in buildings that are cool and well-ventilated.[31] If stored correctly, acetone is said to have a long shelf life but petitioners stated that they generally keep only a few days of inventory ***.[32]

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[26] Petition, pp. 8-9.

[27] Conference transcript, p. 162 (Grimson).

[28] Altivia announced on August 13, 2019, that it had purchased Dow's Institute, WV, industrial site, including Dow's acetone derivatives production operations. Jeff Jenkins, "Chemical Industry Reacts to Purchase of Dow Institute Site," *MetroNews*, August 14, 2019 "http://wvmetronews.com/2019/08/14/chemical-industry-reacts-to-purchase-of-dow-institute-site/; "ALTIVIA Acquires Dow's Acetone Derivatives Business," press release, August 13, 2019 https://www.altivia.com/pressroom/altivia-acquires-dow-s-acetone-derivatives-business-1-1.

[29] Petition, p. 9.

[30] The information in this paragraph about tanks used to store acetone is obtained from "Appendix E: Dow Product Brochure, Acetone: The Versatile, High Solvency Intermediate," March 2000, 13 https://www.tera.org/Peer/VCCEP/Acetone/APP%20E%20Ace%20Dow%20Brochure.pdf (retrieved October 1, 2019).

[31] U.S. Chemical Storage, "Acetone Storage Requirements," July 8, 2013 https://www.uschemicalstorage.com/news/acetone-storage-requirements/; Scholar Chemistry, "Acetone," Material Safety Data Sheet, January 23, 2009 https://www.mccsd.net/cms/lib/NY02208580/Centricity/Shared/Material%20Safety%20Data%20Sheets%20_MSDS_/MSDS%20Sheets_Acetone_6_00.pdf.

[32] Petitioners noted that this short period was in an effort to match the selling price with the cost of manufacturing. Hearing transcript, p. 148. Also, Scholar Chemistry, "Acetone," Material Safety Data Sheet, January 23, 2009

Domestic like product issues

Petitioners contend that the Commission should find a single domestic like product, coextensive with Commerce's scope, as the Commission has in its prior investigations involving chemicals.[33] The petitioners urge the Commission to follow its past practices wherein it does not normally find separate like products based on different grades of chemicals or mineral products. Furthermore, petitioners assert that a single domestic like product finding is warranted as there is no clear dividing lines between the different grades of acetone.[34] They further contend that acetone produced in subject countries including *** is sold as standard grade through the same channels of distribution similar to other imports and domestic produced acetone.

In contrast, Sasol argues that the Commission should find two separate like products because there is a clear dividing line between benzene-free acetone and cumene-based acetone.[35] Unlike most U.S. producers, (except ***), Sasol asserts that it produces acetone differently (via the Fischer-Tropsch synthesis method, which starts with coal as the raw material instead of cumene). Subsequently, Sasol contends that its production process leads to a benzene-free acetone that has a low alcohol content, which makes it a separate and distinct product. Sasol argues that its acetone cannot be substituted for standard grade acetone, and that customers perceive its product as different because it's benzene-free acetone. Furthermore, Sasol contends that the difference between its acetone and standard grade acetone is reflected in the price of the two products, as the price of its benzene-free acetone is higher than that of standard grade acetone.

In its preliminary determinations, the Commission defined a single domestic like product consisting of all acetone coextensive with the scope.[36] The Commission stated that the record does not indicate any clear dividing lines between higher purity grades of acetone or benzene-free acetone and standard/technical grade acetone. Apart from the asserted difference in contaminant levels, there is no information in the record about any other differences in

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https://www.mccsd.net/cms/lib/NY02208580/Centricity/Shared/Material%20Safety%20Data%20Sheets%20_MSDS_/MSDS%20Sheets_Acetone_6_00.pdf; hearing transcript, p. 148 ***.

[33] Petitioner's post conference brief, p.2, petitioner's prehearing brief, p. 4.

[34] Petitioners stated that they are "not aware…of a customer who's insisted on a zero-benzene product. There is definitely a very tiny market for low-benzene, and that's largely pharmaceutical which we sell to." Hearing transcript, p. 152 (Sanders).

[35] Respondent Sasol's post conference brief, p. 3, respondent Sasol's prehearing brief, pp. 4-18, and hearing transcript, p. 194 (Harypursat).

[36] Acetone from Belgium, Korea, Saudi Arabia, Singapore, South Africa, and Spain, Inv. Nos. 731-TA-1435-1440 (Preliminary), USITC Pub. 4884 at pp. 10-11.

physical characteristics between technical grade and specialty grades of acetone. Moreover, both standard/technical grade and the specialty grades of acetone are used to produce downstream products, and technical grade acetone and specialty grades of acetone can be produced at the same facility with the same employees. In addition, the record does not indicate significant distinctions in channels of distribution or with respect to producers' and customers' perceptions.

In the final phase of these investigations, no party requested data or other information necessary for analysis of the domestic like product.

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

U.S. market characteristics

Acetone is most frequently produced using the cumene peroxidation method, which jointly produces both phenol and acetone in a fixed ratio of 0.61 pounds of acetone per pound of phenol produced.[1] The demand for phenol can differ from the demand for acetone since the two chemicals are mostly used in different applications (with the exception of bisphenol A ("BPA")).[2] Supply and demand trends for acetone and phenol in the U.S. market are shown in figure II-1. This data shows that the growth rate for U.S. demand for acetone was *** percent in 2016, *** percent in 2017, and *** percent in 2018, and growth was forecasted to decline by *** percent in 2019 and then increase by *** percent in 2020. U.S. demand for phenol declined in 2016 and 2017, by *** percent and *** percent, respectively, and increased in 2018, by *** percent. Phenol demand was forecasted to decline by *** percent in 2019 and then increase by *** percent in 2020.

Acetone is used in a variety of applications. Methyl methacrylate ("MMA") is the largest end use in the United States, accounting for *** percent of 2017 U.S. consumption of acetone, followed by solvents (*** percent), and BPA (*** percent).[3] MMA is typically used to produce acrylic sheet and molding, which is used in construction, transportation, and medical devices. Solvents are used in nail polish removers, cement, lacquer and finishers, cleaners, paint, coatings, films and adhesives, pharmaceuticals, and household and personal care products. BPA is used to produce polycarbonate resins used in optical media, electrical and electronic uses, and automotive uses.[4]

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[1] About *** percent of world production of acetone uses the cumene peroxidation method. Less than *** percent of U.S. production uses other methods, including IPA dehydrogenation, ***. The South African producer Sasol produces acetone using Fischer-Tropsch synthesis. Petition, pp. 7-9.

[2] *Chemical Economics Handbook: Acetone, IHS*, August 15, 2018, p. 15. BPA manufacturers use 0.3 pounds of acetone per one pound of phenol. Respondents' postconference brief on Common Issues, p. 8, and exh. 1, p. 4.

[3] *Chemical Economics Handbook: Acetone, IHS*, August 15, 2018, p. 32.

[4] *Chemical Economics Handbook: Acetone, IHS*, August 15, 2018, pp. 11, 20. Purchaser *** stated that BPA production requires twice as much phenol as acetone.

The vast majority of acetone sold in the U.S. market is produced and marketed as a standard grade product (also called technical grade).[5] Standard grade acetone may undergo further testing and certification, either at the production facility or at the customer's facility, to meet specialty grade requirements.

Figure II-1
Acetone and phenol: U.S. supply and demand, 2016-18 (actual) and 2019-20 (forecast)

* * * * * * *

[5] U.S. producer AdvanSix sells a National Formulary ("NF") grade and a low-water grade for pharmaceutical applications, ***. ***. Petition, pp. 5-6. U.S. producers Olin and Altivia do not produce specialty grade acetone. Conference transcript, p. 65 (Duhe and Safar). ***.

Among importers, specialty grade shipments were reported only by ***. Sasol stated that its benzene-free acetone is not a specialty grade but rather is a distinct product from acetone that is produced using cumene. Respondent Sasol's postconference brief, exh. 1, p. 2.

All responding U.S. producers and most responding importers (9 of 14) reported that there were not significant changes in the product mix or marketing for acetone since January 1, 2016. Five importers reported such changes, with four of these firms citing Shell's shutdown of one of its acetone/phenol lines in Deer Park, Texas in 2018. Importer *** stated that purchasers increased imports in anticipation of Shell's shutdown that was planned for January 2018, but was then delayed, which resulted in an oversupply of acetone in the Gulf region. It added that three other U.S. producers shut down production during 2014 to 2016 because of declining demand for phenol, but that as phenol prices increased, U.S. producers increased their production of phenol and acetone. Importer *** mentioned the shutdown of the Axiall plant in Louisiana.[6] Importer *** stated that acetone was in short supply in 2016 and 2017 because of reduced global phenol production, but that the global supply of acetone increased as a result of increased phenol demand in 2018. Importer *** stated that increased awareness of the negative health effects of benzene strengthened the market for benzene-free acetone.

Apparent U.S. consumption of acetone increased during 2016-18. Overall, apparent U.S. consumption in 2018 was 8.6 percent higher than in 2016. Apparent U.S. consumption in the first half of 2019 was 10.8 percent lower than during the first half of 2018.

U.S. purchasers

Among the largest U.S. purchasers of acetone are MMA producers Dow, Evonik, and Lucite.[7] As discussed in part V, these three purchasers along with U.S. producers INEOS and Shell determine the "large buyer price" ("LBP") for acetone.

[6] In September 2015, Axiall Corp. sold its aromatics business to INEOS. Axiall kept its phenol/acetone plant in Plaquemine, Louisiana, but shut down the plant at the end of 2015. *Chemical Economics Handbook: Acetone, IHS*, August 15, 2018, p. 21.

[7] Conference transcript, p. 33 (Duhe).

The Commission received 33 questionnaire responses from firms that have purchased acetone since January 1, 2016.[8] [9] Eighteen of the responding purchasers are end users of acetone, including three MMA producers (***), three BPA producers (***), and 15 other end users. Fourteen firms are distributors, and six identified themselves as "other" including packagers, traders, and wholesalers.[10] [11] In general, responding U.S. purchasers were located in Texas, Ohio, Pennsylvania, and Tennessee.

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

[9] Of the 33 responding purchasers, 29 purchased domestic acetone, 19 purchased acetone imported from subject countries (including 2 from Belgium, 9 from Korea, 5 from Singapore, 10 from South Africa, and 3 from Spain), and 4 purchased imports of acetone from other sources (including Finland, Saudi Arabia, and Taiwan). Fifteen firms reported purchases from unknown sources. Purchasers may not know the country of origin of acetone purchased from traders and distributors *** that source acetone from multiple countries, including the United States. In addition, U.S. producers also sell imported acetone, particularly INEOS, which commingles its domestic and Belgian production for sale to U.S. customers, ***.

[10] Some purchasers reported more than one role.

[11] ***. ***.

The largest U.S. acetone purchasers during January 2016-June 2019, based on purchaser questionnaire responses, were ***.[12]

Channels of distribution

U.S. producers of acetone sold mainly to end users, with almost three-quarters of their U.S. shipments going to this channel in 2018 (table II-1a). The majority of subject import shipments were also to end users, although the shares varied by country. More than *** percent of import shipments from Belgium went to end users. *** import shipments from South Africa went to end users. *** import shipments from Singapore went to end users in 2017 and 2018 ***. *** shipments of imports from Korea and Spain went to distributors in 2018, ***.

Large buyers of acetone are typically supplied by barge or vessel, whereas distribution customers are typically supplied by truck, container, or rail.[13] Table II-1b presents the unit values of U.S. shipments by channels of distribution.

Geographic distribution

U.S. producers reported shipping acetone to all U.S. regions, with at least five of the seven responding U.S. producers shipping to the Midwest, Southeast, Central Southwest, and Pacific Coast (table II-2). Subject imports were also shipped to all regions, with two of the five individual subject countries (***) reported to serve all contiguous U.S. regions. Imports from all subject countries except *** went to the Central Southwest region. Imports from *** went to the ***.

For U.S. producers, 48 percent of shipments were within 100 miles of their production facility, 35 percent were between 101 and 1,000 miles, and 17 percent were over 1,000 miles. Importers sold 47 percent within 100 miles of their U.S. point of shipment, 47 percent between 101 and 1,000 miles, and 6 percent over 1,000 miles.

[12] Shares based on purchases and imports reported in purchaser questionnaire responses only.
[13] Conference transcript, pp. 119-120 (Castro).

Table II-1a
Acetone: U.S. producers' and importers' U.S. shipments, share of quantity, by sources and channels of distribution, 2016-18, January-June 2018, January-June 2019

Item	Calendar year			January to June	
	2016	2017	2018	2018	2019
	Share of U.S. shipments (percent)				
U.S. producers: to Distributors	27.3	26.0	27.6	25.8	32.6
to End users	72.7	74.0	72.4	74.2	67.4
U.S. importers: Belgium to Distributors	***	***	***	***	***
to End users	***	***	***	***	***
U.S. importers: Korea to Distributors	***	***	***	***	***
to End users	***	***	***	***	***
U.S. importers: Singapore to Distributors	***	***	***	***	***
to End users	***	***	***	***	***
U.S. importers: South Africa to Distributors	***	***	***	***	***
to End users	***	***	***	***	***
U.S. importers: Spain to Distributors	***	***	***	***	***
to End users	***	***	***	***	***
U.S. importers: Subject to Distributors	***	***	***	***	***
to End users	***	***	***	***	***
U.S. importers: Nonsubject to Distributors	***	***	***	***	***
to End users	***	***	***	***	***
U.S. importers: All sources: to Distributors	***	***	***	***	***
to End users	***	***	***	***	***

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

Table II-1b
Acetone: U.S. producers' and importers' U.S. shipments, unit values, by sources and channels of distribution, 2016-18, January-June 2018, January-June 2019

Item	Calendar year			January to June	
	2016	2017	2018	2018	2019
	Unit value (dollars per short ton)				
U.S. producers: to Distributors	***	***	***	***	***
to End users	***	***	***	***	***
U.S. importers: Belgium to Distributors	***	***	***	***	***
to End users	***	***	***	***	***
U.S. importers: Korea to Distributors	***	***	***	***	***
to End users	***	***	***	***	***
U.S. importers: Singapore to Distributors	***	***	***	***	***
to End users	***	***	***	***	***
U.S. importers: South Africa to Distributors	***	***	***	***	***
to End users	***	***	***	***	***
U.S. importers: Spain to Distributors	***	***	***	***	***
to End users	***	***	***	***	***
U.S. importers: Subject to Distributors	***	***	***	***	***
to End users	***	***	***	***	***
U.S. importers: Nonsubject to Distributors	***	***	***	***	***
to End users	***	***	***	***	***
U.S. importers: All sources: to Distributors	***	***	***	***	***
to End users	***	***	***	***	***

Note.--***.

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

Table II-2
Acetone: Geographic market areas in the United States served by U.S. producers and importers

Region	U.S. producers	Belgium	Korea	Singapore	South Africa	Spain	Subject sources
Northeast	4	***	---	1	***	***	3
Midwest	7	***	1	1	***	***	5
Southeast	6	***	1	1	***	***	6
Central Southwest	7	***	4	3	***	***	8
Mountains	2	***	---	1	***	***	2
Pacific Coast	5	***	---	1	***	***	2
Other[1]	1	***	---	---	***	***	1
All regions (except Other)	2	***	---	1	***	***	2
Reporting firms	7	***	4	3	***	***	10

[1] All other U.S. markets, including AK, HI, PR, and VI.

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

Supply and demand considerations

U.S. supply

Because the vast majority of acetone produced worldwide also yields phenol, production decisions involve supply and demand considerations for both phenol and acetone since producers need to be able sell both products.[14] [15] The production process for acetone and phenol is capital intensive, with high fixed costs, and is most efficient to operate continuously.[16]

Table II-3 provides a summary of the supply factors regarding acetone from U.S. producers and from responding foreign producers from the subject countries.

[14] INEOS stated that producers typically set their production levels to meet the contractual demand for phenol. Conference transcript, p. 133 (Foster). On the other hand, U.S. producer *** reported that in 2018, it reduced its total phenol/acetone plant production because its ***.

[15] *** stated ***.

[16] The equipment is designed to run 24 hours a day, 7 days a week. Hearing transcript, p. 32 (Sanders).

Table II-3
Acetone: Supply factors that affect the ability to increase shipments to the U.S. market

Item	2016	2018	2016	2018	2016	2018	Shipments by market in 2018 (percent)		Able to shift to alternate products
	Capacity (1,000 short tons)		Capacity utilization (percent)		Inventories as a ratio to total shipments (percent)		Home market shipments	Exports to non-U.S. markets	No. of firms reporting "yes"
United States	1,628	1,578	84.5	84.5	4.0	4.4	94.8	5.2	*** of 8
Belgium	***	***	***	***	***	***	***	***	***
Korea	***	***	***	***	***	***	***	***	***
Singapore	***	***	***	***	***	***	***	***	***
South Africa	***	***	***	***	***	***	***	***	***
Spain	***	***	***	***	***	***	***	***	***
Subject sources	***	***	***	***	***	***	***	***	***

Note.--Responding U.S. producers accounted for the vast majority of U.S. production of acetone in 2018. Responding foreign producer/exporter firms accounted for nearly all of U.S. imports of acetone from subject countries during 2018. 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."

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

Domestic production

Based on available information, U.S. producers of acetone have the ability to respond to changes in demand with small-to-moderate changes in the quantity of shipments of U.S.-produced acetone to the U.S. market. The main contributing factors to this degree of responsiveness of supply is the availability of unused capacity. Factors mitigating responsiveness of supply include a limited ability to shift shipments from alternate markets, limited inventories, a lack of ability to shift production to or from alternate products, and the need to balance phenol production.

Three U.S. producers (***) reported that their production decisions for acetone are driven equally by acetone and phenol, two producers (***) reported that their production decisions are primarily driven by phenol, and one producer (***) reported that its production decisions are solely driven by phenol. No U.S. producer reported that acetone was the primary driver for production decisions.[17]

[17] However, Altivia reported that it curtailed production of phenol and acetone in 2018 and 2019 because it ran out of storage space for acetone. Hearing transcript, p. 48 (Duhe).

U.S. production of acetone declined by 3.1 percent from 2016 to 2018. U.S. producers' capacity increased by 6.3 percent from 2016 to 2017, and then decreased by 8.8 percent from 2017 to 2018. The capacity increase in 2017 was driven mainly ***. The capacity decrease in 2018 was driven by ***. U.S. producers' major export markets are Canada and Latin America (including Mexico, Argentina, and Brazil). U.S. producers reported that they cannot switch their production equipment from acetone and phenol to other products ***.

Twenty-four of 32 responding purchasers reported changes in the availability of U.S.-produced acetone since January 2016, with 13 firms reporting reduced supply. Seven purchasers reported reduced supply as a result of Shell's shutdown of its Phenol 3 site in early 2018, with purchaser *** stating that the shutdown was to balance an oversupplied and unprofitable U.S. phenol market. Purchasers also reported fewer U.S. suppliers, industry consolidation, and reduced production capacity. Some purchasers reported increased availability of domestic acetone, with *** stating that supply has increased in the past year. *** cited the restart of the Altivia plant in Haverhill, Ohio. *** stated that rising phenol demand in 2017 and 2018 put more domestic acetone on the market. *** stated that the market was very tight in 2016 and 2017 because of facility closures, but that in 2018 supply became more available. *** stated that acetone availability fluctuates and is driven by phenol demand and the acetone needs of MMA producers.

Subject imports

Based on available information, producers of acetone from subject countries have the ability to respond to changes in demand with moderate changes in the quantity of shipments of acetone to the U.S. market. The main contributing factors to this degree of responsiveness of supply are the availability of some unused capacity and the ability to shift shipments from alternate markets. Factors mitigating responsiveness of supply include limited availability of inventories and lack of ability to shift production to or from alternate products.

From 2016 to 2018, foreign producers reported that capacity declined in South Africa, did not change in Singapore and Spain, and increased in Belgium and Korea (by *** percent and *** percent, respectively). Reported capacity utilization in subject countries in 2018 ranged from ***.

A majority of acetone production in Korea and South Africa was shipped to their respective home markets in 2018, whereas the majority of acetone production in Belgium, Singapore, and Spain went to third-country markets. No foreign producer reported production of products other than phenol using the same equipment as acetone.

Fifteen of 24 responding purchasers reported changes in the availability of subject imports in the U.S. market, with most reporting increased availability. *** reported that increased phenol demand in 2018 in Asia created additional acetone supply globally, *** stated that subject import availability increased as a result of stronger global demand for phenol, and *** stated that imports from Asia have increased. *** stated that import availability varied during 2016-18. *** reported that subject imports have dropped significantly in the second half of 2019 due to the antidumping investigations. *** stated that subject imports have filled a U.S. shortage, and that the U.S market has been the highest-priced acetone market.[18] *** stated that imports rose from 2017 to 2018 following Shell's announcement of its idling of a phenol unit, but that imports are down in 2019. *** stated that more acetone was imported to offset a decline in U.S. capacity. *** cited Shell's shutdown announcement as a reason that acetone was imported, and stated that a three month delay of the shutdown, combined with Shell's building of inventory, caused U.S. acetone inventories to reach high levels. It added that a decrease in acetone demand in late 2018/early 2019 resulted in the inventory drawdown taking longer than anticipated. It stated that lower U.S. imports in 2019 has reduced acetone availability, and that ***. Lastly, *** stated that the U.S. producers will not increase acetone production because phenol demand drives operating rates.

Imports from nonsubject sources

Nonsubject imports accounted for 5.8 percent of total U.S. imports in 2018, down from 11.1 percent in 2016 and 15.9 percent in 2017. The largest source of nonsubject imports during 2016-18 was Saudi Arabia, followed by Finland and Italy.

[18] ***.

Seven of 17 responding purchasers reported changes in the availability of nonsubject imports, with most of these firms reporting increased supply, particularly as a result of increased phenol demand in 2018, which created additional acetone supply globally.

Supply constraints

The supply of acetone has been affected by several events since January 2016. In August 2017, Hurricane Harvey impacted acetone producers located on the Gulf Coast. This affected not only acetone production, but also the production of downstream products.[19] In October 2017, Shell issued a notice that in January 2018, it would idle its phenol 3 ("P3") line, one of its two acetone/phenol production lines at its Deer Park, Texas facility. The line has been idled since the end of February 2018.[20] Some events affecting acetone supply are listed in table II-4.

Table II-4
Acetone: Selected events affecting supply in the U.S. market

Dates	Events
2016 2nd quarter	Flooding in TX damaged the Matagorda locks in Texas, stranding cumene. *** impacted.
2017	Startup of Altivia production line in Haverhill, OH.
2017 3rd quarter	Hurricane Harvey and closure of Houston ship channel in August for 2-3 weeks. Force majeure at ***.
2017 October	Shell announced it would idle its P3 phenol/acetone production line in January 2018.
2018 February	Closure of Shell's P3 line.
2019 January	Shell force majeure.
2019 February	Altivia force majeure on phenol only *** due to Ohio River flooding.
2019 March	***. Olin month-long turnaround.
2019 March 17	Fire at Intercontinental Terminals Company (ITC) in Deer Park, Texas.
2019 June	Fire at the refinery of cumene supplier Philadelphia Energy Solutions ("PES") in Philadelphia, Pennsylvania.

Source: Compiled from data submitted in response to Commission questionnaires and hearing and conference transcripts.

Four of the seven U.S. producers reported that their firm refused, declined, or was unable to supply acetone since January 1, 2016. Three U.S. producers (***), which accounted for *** percent of reported U.S. production in 2017, reported declaring force majeures as a result of Hurricane Harvey in 2017. ***

[19] For example, Lucite shut down one of its two MMA plants for three and a half weeks because of flooding. Conference transcript, p. 175 (Connolly).

[20] Conference transcript, p. 37, 85, 93 (Safar, Duhe, and Sanders).

***. INEOS reported that its Mobile, Alabama facility declared a force majeure on *** because a 2- to 3-week closure of the Houston Ship Channel prevented it from obtaining cumene from its facility in Texas.[21] ***. *** during and shortly after Hurricane Harvey in 2017. In addition, ***. *** reported that it may restrict customers ***. ***. AdvanSix stated it will sometimes decline to supply distributors that are its competitors.[22]

Five of 13 importers reported that they had experienced supply constraints since January 1, 2016. *** stated that it declined to accept new acetone customers following Hurricane Harvey because of acetone shortages in the U.S. market (including four U.S. producers declaring force majeure), and that in 2018, it was unable to supply its customer ***. Spanish producer CEPSA (***) stated that it has historically supplied acetone to the U.S. market from imports from Spain, and through a swap agreement with U.S. producer ***, but that in 2018 *** was unwilling to continue the swap arrangement.[23] *** stated that occasionally it will ask customers to purchase acetone from

[21] Respondent INEOS's postconference brief, exh. 1, p. 5.
[22] Hearing transcript, p. 71 (Sanders).
[23] Hearing transcript, p. 186 (Castro). ***.

alternate sources when a ship is delayed. Importer *** reported several supply constraints for U.S.-produced acetone, including the following: (1) in early 2018, Altivia was running only one of its two phenol/acetone units in Haverhill, Ohio, and the second unit started up later in 2018; (2) the Shell shutdown in February 2018, which *** stated was driven by a desire to balance the oversupplied phenol market and reduced the U.S. -produced acetone supply by 147,700 short tons; and (3) in February 2019, both Shell and Altivia declared force majeure on phenol and acetone supply.[24] [25] Chemical manufacturer Monument stated that, in 2017, it was informed by its U.S. suppliers, including the three petitioners, that they would be restricting the supply of acetone to Monument in 2018, leaving a shortfall of 50 million pounds for its 2018 needs.[26] ***.[27]

Fourteen of 33 purchasers reported that a supplier was unable or unwilling to supply acetone since January 1, 2016. Explanations included supply issues related to Hurricane Harvey (***), plant product issues (***), supplier quality issues (***), the Shell P3 shutdown (***), Shell's force

[24] Press reports indicate that Shell shut down its phenol/acetone unit from January 17, 2019 to February 13, 2019 to repair equipment, and that the force majeure was in place on phenol but not acetone. In addition, in February 2019, Altivia's Haverhill, Ohio facility experienced disruptions in receiving raw materials and shipping finished product as a result of high water levels on the Ohio River.

ICIS News, "Plant status: Shell declares force majeure on U.S. phenol from Texas plant – sources," https://www. icis. com/explore/resources/news/2019/01/25/10311381/plant-status-shell-declares-force-majeure-on-us-phenol-from-texas-plant-sources/, January 25, 2019.

ICIS News, "Plant status: Shell restarts US phenol/acetone unit – sources," https://www. icis. com/explore/resources/news/2019/02/22/10323388/plant-status-shell-restarts-us-phenolacetone-unit-sources/, February 22, 2019. Altivia letter to customers, https://greenchemindustries. com/wp-content/uploads/2019/02/ALTIVIA-Petrochemicals-Occurrence-of-Force-Majeure-Event. pdf, February 22, 2019.

[25] ***.

[26] Conference transcript, pp. 115-116.

[27] ***.

majeure in the first quarter of 2019 (***), INEOS' force majeure (***), and INEOS' inability to supply in recent years (***). *** reported that in 2016 and 2017, U.S. producers *** informed it of limited supply for 2017 and 2018.[28] *** stated that *** held back volumes and were unwilling to contract their production with major buyers in 2018.[29] *** stated that *** will not supply it with acetone ***, and that *** will not ***. ***.[30] Lucite stated that Altivia said it did not have enough acetone to support the MMA market in 2018, and that "there was no discussion about price whatsoever."[31] Lucite also stated that

[28] ***.

[29] ***.

[30] ***.

[31] Hearing transcript, pp. 174, 212 (Frederic). ***. Lucite's Answers to Commissioner Questions, p. 4. ***. Petitioners' posthearing brief, exhibit 3.

three U.S. producers recently told it that they will be limiting the amount of acetone they can supply to Lucite for 2020.[32]

All responding U.S. producers reported that weather-related events or plant closures had affected supply of U.S.-produced acetone since January 1, 2016. ***.

Importers also reported that weather-related events or plant closures had affected the supply of U.S.-produced acetone since January 1, 2016, generally citing Hurricane Harvey and the Shell closure. ***. *** stated that the idling of the Shell plant in 2018 reduced U.S. acetone supply by 120,000 short tons, roughly 8.5 percent of U.S. production. *** stated that hurricanes Harvey and Michael disrupted acetone production in the Gulf, and that Shell's shutdown impacted the supply/demand balance such that the United States shifted from being an exporter of acetone to being a net importer. *** stated that the disruption in acetone supply from Hurricane Harvey slowed its ability to produce finished material. *** also cited industry consolidations (including INEOS purchasing and then shutting down the Axiall line), and stated that AdvanSix filed a few force majeures due to high river levels, which restricted the ability to deliver

[32] Hearing transcript, pp. 174, 212 (Frederic). Lucite provided additional details regarding responses it received to RFPs in 2018 and 2019 in Exhibits 1 and 2 of its Answers to Commissioner Questions. *** Lucite's Answers to Commissioner Questions, pp. 8-10.

materials. *** stated that the delay in Shell's actual closing resulted in oversupply of acetone in 2018, and that after Hurricane Harvey, importers anticipated that acetone plants would be shut down longer than they were, and thus imported more acetone, resulting in growing acetone inventories.

Twenty of 33 purchasers reported that weather or plant shutdowns had affected the supply of acetone. Many of these firms mentioned Hurricane Harvey and/or the Shell shutdown (and shutdown announcement). *** stated that it had to purchase higher-priced acetone on the spot market because Hurricane Harvey resulted in a very short market. *** reported a number of supply issues during August-September 2017 as a result of Hurricane Harvey.[33]

*** stated that the announcement of the Shell closure scheduled for the first week of January 2018 prompted spot traders to import acetone, but when Shell delayed the shut down until the end of February, extra imported product was stranded on barges on demurrage and was sold by traders at a considerable loss. *** stated that the closure announcement was at a time of year when purchasers seek to secure supply for the upcoming year, and that Shell informed *** that it would not provide any of its contracted volume to *** for 2018. *** also stated that other U.S. producers also would not commit volume. *** added that it generally purchases *** percent of its acetone needs from U.S. producers, but that the share declined to *** percent in 2018. *** stated that Hurricane Harvey caused force majeures at Shell, INEOS, and Olin.

In addition, *** reported that Altivia, AdvanSix, INEOS, and trader Mitsui had supply issues in 2019.[34] *** stated it purchased phenol from Altivia to obtain acetone to

[33] It stated that in 2017, Olin, INEOS, and Shell had plant closures or inability to obtain cumene; Olin and INEOS declared force majeure for acetone in August/September; Shell shut down its Deer Park plant from September 1-15; and four cumene units in the U.S. Gulf were shutdown until the first half of September 2017.

[34] ***.

mitigate supply interruption due to a hurricane in early 2016. *** stated that *** had an outage in early 2019 that did not affect *** supply. *** reported that Olin, SABIC, and INEOS were impacted by flooding in Texas which damaged the Matagorda locks and stranded cumene, that SABIC took a "planned" outage, and that in 2019 Altivia declared a force majeure due to Ohio River flooding. *** described numerous issues each year, and emphasized the need to have multiple suppliers of acetone. It stated that INEOS' supply issues with ***. *** stated that an incident at Altivia's Haverhill facility disrupted the market.

New suppliers

Fifteen of 32 purchasers indicated that new suppliers have entered the U.S. market since January 1, 2016. Purchasers named domestic producer Altivia; imports from Aramco and Petro Rabigh (Saudi Arabia), CNOOC (China), Deepak Phenol (India), LG and Kuhmo (Korea); and U.S. distributors Cellmark, Integra, and Matrix.

U.S. demand

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

End uses and cost share

U.S. demand for acetone depends on the demand for U.S.-produced downstream products. Uses include MMA, BPA, and solvents, which are in turn used in a wide variety of end-use products. Acetone can account for a moderate-to-large share of the cost of the intermediate chemical products in which it is used, but a small share of end-use products. Reported cost shares for MMA were 35 to 70 percent, for BPA were 15 to 30 percent, and for solvents were 40 to 100 percent.[35]

[35] Other cost shares reported included: acrylic resin (1 percent), adhesives (13 percent), brake parts cleaners (14 to 24 percent), derivatives (85 percent), diacetone alcohol (73 to 93 percent), isopropanol (68 to 95 percent), MAA (82 percent), methyl isobutyl ketone (70 to 89 percent), nail polish remover (40 percent), paints (24 to 70 percent), and thinners (10 to 80 percent).

Business cycles

One of six responding U.S. producers, 6 of 14 responding importers, and 13 of 33 responding purchasers indicated that the acetone market was subject to business cycles. Some firms reported seasonality in the U.S. market. U.S. producer *** reported higher demand for acetone used in coatings from spring to fall, importer *** stated that demand for acetone to make MMA is higher in the first and second quarters of the year, and importer *** reported that March/April and October/November are peak demand seasons. Purchaser *** stated that acetone prices tend to increase during April to September and decrease from October to March. Purchaser *** reported that acetone demand is seasonal with the automotive, paint/coatings, and construction industries. Purchasers at the staff conference stated that demand for acetone used for MMA for coatings is highest in the spring and summer, and that acetone demand tends to be lowest in the fourth quarter of the year.[36] Respondents stated that the acetone industry typically has 5- to 7-year cycles, depending on crude oil prices, propylene demand, phenol supply and demand, and acetone supply and demand.[37]

In addition, importers and purchasers *** stated that supply and demand for phenol affects the business cycle for acetone. *** stated that producers run their plants based on phenol demand, which has been strong for the last 2 years. In addition to phenol's effect on the business cycle, importer *** also stated that MMA production drives acetone demand and pricing, and that, in 2018, MMA producers had production turnarounds resulting in less acetone demand. Purchaser *** also stated that MMA producers are the main influencers of supply and demand for acetone. Purchaser *** stated that 70 percent of the U.S. acetone market is consumed internally or sold to one of the three large MMA producers under contract, and that the remaining truck and rail market is subject to production swings which can vary greatly during the year.

Four U.S. producers, seven importers, and 14 purchasers reported other conditions distinctive to the acetone market. U.S. producers *** reported that acetone production is highly capital-intensive with high fixed costs, requiring producers to operate at high capacity utilization rates to offset the large capital investment and significant ongoing

[36] Conference transcript, p. 165 (Connelly and Haug). Purchaser *** also reported increased demand for acetone used in paint during spring and summer. Purchaser *** reported low demand for acetone from November to March.

[37] Conference transcript, p. 146 (Duggan).

maintenance costs. U.S. producer *** reported competition from imports as a distinct condition of competition in the acetone market.

Importer *** reported the closures of two production sites in the last two years (Axiall (now INEOS)) in Plaquemine, Louisiana and Shell at Deer Park, Texas. Importer *** reported that phenol profitability impacts the production and prices of acetone.[38] Sasol stated that it is the only producer of benzene-free acetone in subject countries, and that only one U.S. producer, Dow, produces benzene-free acetone.[39]

Four U.S. producers, 10 importers, and 14 purchasers reported changes to business cycles or conditions of competition since January 1, 2016. U.S. producers *** reported that increased low-priced imports, particularly in 2018, have decreased the demand for domestic acetone and reduced the amount of acetone to which customers are willing to commit in long-term contracts. Importers *** stated that following low demand for phenol in 2016 and 2017, stronger than forecasted phenol demand in 2018 resulted in too much acetone being produced, which has depressed prices.[40] *** stated that propylene feedstock prices in the United States increased relative to other countries, that U.S. MMA production was low in 2018 due to turnarounds and major mechanical failures, that phenol supply is tight and U.S. manufacturers are increasing operation rates producing more acetone as a byproduct, and that many U.S. acetone plants have shut down operations so imports are needed to meet demand. *** reported that industry consolidation has reduced the available supply of U.S.-produced acetone. *** also stated that relatively new acetone/phenol producers AdvanSix, Altivia, and Olin "have chased profits on phenol without considering the effects of increased production of the acetone by-product," creating instability in 2017 and 2018 and uncertainty in 2018 and 2019.

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[38] *** stated "when acetone demand drops at a slower rate than phenol demand, acetone prices will increase. Conversely, when phenol demand growth outstrips acetone demand growth, acetone prices will fall."

[39] Conference transcript, pp. 136-137 (Thornlow). ***.

[40] *** stated that the phenol market was "extremely strong" in 2017 and 2018, with spot prices of phenol selling at a 10-15 cents per pound premium over contract prices. It added that overseas markets renegotiate phenol prices more frequently (monthly in Asia and quarterly in Europe) than does the U.S. market, which generally has multi-year contracts, although INEOS attempted to get the U.S. market to purchase on quarterly price negotiations for 2018. It reported that in 2018, many of the U.S. producers that did not have acetone contracted to the same extent as phenol "inflamed their own situation" by producing phenol in larger amounts than required by their contracts to try to exploit high spot market prices for phenol, and thereby producing even more acetone.

Among purchasers, *** cited the shutdown of Shell's P3 unit in early 2018, *** stated that imported acetone has moved prices below propylene values, *** cited low prices in the first half of 2019, and *** reported higher demand from MMA producers as a result of the strong economy. *** stated that U.S. producers have made large margins on phenol but have not balanced acetone production, and that U.S. acetone producers "***." *** stated that phenol capacity additions in Asia has decreased U.S. exports and lowered U.S. production and availability of acetone. *** stated that AdvanSix has offered below cost pricing to some potential truck and rail customers in new regions, adding that five years ago AdvanSix had no truck business in Chicago or Houston but now controls a large portion of these markets. Additionally, it stated that Sasol and other suppliers have tried to protect their market share in these markets, resulting in very low pricing for truck and rail sales in many areas. Lastly, it stated that, as a result, large contract barge buyers often pay much higher prices than small players pay on the spot market for truckload quantities.

Most responding firms (4 of 4 U.S. producers, 10 of 12 importers, and 16 of 22 purchasers) reported that business cycles or conditions of competition for phenol have affected the cycles or conditions for acetone. Among U.S. producers, *** stated that growth in Asia for BPA and nylon has driven phenol demand higher than acetone demand for MMA and solvents, and has led to increased volumes of acetone. *** stated that it seeks to maximize profitability across product lines, and that an oversupplied acetone market (as it has been for over a year) will ultimately will reach a point where the profitability on phenol does not make up for losses on acetone. *** reported that in 2017, U.S. phenol demand was flat to slightly down and thus, acetone supply was limited, but that in 2018, phenol demand and acetone supply both increased. It added that in 2017 and 2018, several U.S. producers were shipping phenol to Asia and selling the acetone into the U.S. market, but as new phenol capacity came on-line in Asia, U.S. producers decreased their phenol production, which resulted in a reduction in domestic acetone supply for the U.S. market. *** stated that foreign producers increased phenol and acetone production because of strong global demand for phenol and dumped the excess acetone into the United States.

Among importers reporting that conditions for phenol affected acetone, *** stated that low demand for phenol in 2016 and 2017 resulted in industry consolidations and closures of phenol production facilities; that in 2018, a dramatic increase in phenol demand led to an unanticipated increase in acetone production; and that the phenol cycle is now turning down, leading to a tight acetone market. *** stated that a weak phenol market in 2016 and

2017 led to acetone scarcity in the U.S. market, but that increased phenol demand in 2018 for the epoxy and nylon market and for export, led to excess acetone in the market. *** reported healthy demand for phenol in 2018, especially in Asia, and that U.S. phenol producers increased their phenol exports, and that when overseas phenol demand decreased in the first half of 2019, U.S. phenol producers were unable to maintain a high production rate, which reduced domestic acetone production. *** stated that high demand for phenol in 2018 caused acetone inventories to temporarily increase and drive pricing downward.

Among purchasers, many firms mentioned that phenol demand affected acetone supply, with fluctuations in demand for phenol, and thus supply for acetone. Firms stated that strong domestic and global demand for phenol in 2018 increased the supply of acetone. *** stated that demand fluctuations for phenol has created periods of long supply and short supply of acetone and volatile pricing. *** stated that there were antidumping duties in India and China for U.S. phenol. *** stated that its South African acetone supplier does not have a phenol by-product stream, but that it is pressured by competition to respond to lower priced U.S.-produced acetone that is manufactured as a by-product of phenol. *** stated that U.S. producers (particularly the petitioners, who are newer to the acetone/phenol market) have focused only on phenol production and not balancing the acetone output. It added that if tariffs are placed on acetone, U.S. producers of acetone derivatives will be at a disadvantage to other derivative producers around the world. *** stated that since phenol plants have been built in Asia, demand for U.S. phenol exports has declined, and that in turn, there has been a reduction in overall U.S. phenol/acetone capacity and an increased need for imports to meet U.S. acetone demand. It also stated that there are now only four U.S. producers actively selling acetone to the truck and rail market.

Demand trends

Most firms reported an increase in U.S. demand for acetone since January 1, 2016 (table II-5). U.S. producer *** described U.S. demand for acetone as relatively flat, stating that IHS cited MMA growth at -0.6 percent and BPA growth at 0.2 percent, and that global demand growth for acetone was 2.6 percent. *** stated that acetone demand increased mainly due to a strong economy led by a strong housing and construction market. Dow and Lucite, the two largest acetone purchasers, reported that U.S. acetone demand has dropped in 2019 because of operational issues at their MMA facilities.[41] Importer Plaza added that it is beginning to see a

[41] Lucite had an unplanned outage, lasting six months until September 2019, at one of its two U.S. plants. Dow had supply issues as a result of the ITC fire in March 2019, and because one of its suppliers

slight decline in acetone demand from its customers, related to a slowdown in the overall U.S. economy.[42]

Table II-5
Acetone: Firms' responses regarding U.S. demand and demand outside the United States

Item	Number of firms reporting			
	Increase	No change	Decrease	Fluctuate
Acetone demand inside the United States: U.S. producers	2	4	---	---
Importers	9	2	1	---
Purchasers	11	6	2	3
Acetone demand outside the United States: U.S. producers	5	1	---	---
Importers	8	3	1	---
Purchasers	10	2	2	1
Demand for end use products: Purchasers	6	7	2	8

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

Regarding demand outside of the United States, U.S. producer *** stated that growth has been driven by growing demand for BPA, and *** also stated that there was growth in demand for acetone in Asia, driven by demand for MMA and BPA. *** stated that there was a moderate increase in demand (lower than the rate of GDP growth), driven by continued growth in MMA and solvents, but flat demand for BPA. *** stated that increased BPA production in China drove growth. *** cited strong demand for solvents/coatings in Asia.

Among importers, four firms (*** stated that U.S. demand has generally followed GDP growth. *** stated that acetone tracks GDP, typically growing by 1 to 2 percent per year, but that demand was lower in 2018 and the first half of 2019, because several MMA producers had operational problems. *** stated that acetone demand typically grows faster than GDP (while phenol and phenol derivatives typically grow at GDP), and *** stated that U.S. demand for acetone grew by about 7 percent from 2016 to 2018. *** stated that increased U.S. demand for acetone was driven by growth in MMA and solvents. *** stated that acetone demand increased mainly due to a strong housing and construction market in the United States.

(of another chemical) was in force majeure. Hearing transcript, pp. 221-222, 268-269 (Frederic, Butcher, Connolly). Lucite provided additional information regarding production slowdowns of all three U.S. MMA producers in 2019 in its posthearing brief. Lucite's Answers to Commissioner Questions, p. 12.

[42] Hearing transcript, p. 222 (Velarde).

With respect to global demand, *** reported growth rates of 2 to 3 percent, particularly in Asia. *** stated acetone demand outside of the United States has grown by 7 to 10 percent by year. Firms cited increased global growth in acetone used in BPA, MMA, and solvents, and increased demand for acetone in Asia. *** stated that acetone follows global GDP, and also noted that U.S. producers generally supply acetone demand in Mexico and Latin America.

Purchasers reported that demand for acetone was directly related to demand for end use products. *** reported that MMA demand is cyclical. *** reported that it has seen a steady increase in demand for acetone due to acetone's zero VOC (volatile organic compound) score for use in many consumer products and that customers are continually reformulating products to use more acetone in order to meet more stringent environmental VOC regulations.

Firms were also asked about demand trends for phenol (table II-6). U.S. producer *** reported that U.S. demand for phenol has increased as a result of moderate growth in some phenol uses (phenolic resins, alkyl phenol and nylon) while demand for BPA has been flat. *** reported that U.S. phenol demand has been flat or gone down, and is forecasted to remain flat, because any new capacity to produce downstream products that use phenol has been installed outside of the United States. Among importers, *** stated that U.S. demand for phenol derivatives has been growing faster than GDP. *** stated that phenol demand was weak in 2016 and 2017, but that phenol demand growth outpaced acetone demand in 2018 and 2019. It added that growing demand for phenol in Asia in 2018 drove increased exports to that region, and that demand increased for phenol used in nylon and epoxy production. *** stated that there was a surge in phenol demand in the United States in early 2018, and although demand remains strong, it has been tapering off. *** reported a limited growth rate for phenol in the United States because of decreased growth in the production of phenol derivatives. *** stated that the largest end use for phenol is BPA, which grows globally at about 4 percent. *** stated that U.S. phenol demand has increased at a higher rate than U.S. acetone demand. *** reported stable U.S. demand in phenol downstream industries and *** stated that phenol demand usually grows with GDP. Lucite stated that phenol demand has declined in 2019.[43]

The vast majority of responding firms reported increased demand for phenol outside of the United States. Firms stated that this growth is a result of increased production of BPA, nylon, and polycarbonates outside of the United States, including Asia. U.S. producer ***

[43] Hearing transcript, pp. 223-224 (Frederic).

and importers *** reported that overall phenol demand growth has exceeded the demand growth for acetone. Importer *** reported a global growth rate of more than 3 percent for phenol, especially in Asia. Importer *** stated that the largest end use for phenol is BPA, which has a global growth rate of about 4 percent. Importer *** stated that regional imbalances have occurred as a result of differing demand for phenol and acetone, and that Asia and Europe are producing excess acetone.

Table II-6
Phenol: Firms' responses regarding U.S. demand and demand outside the United States

Item	Number of firms reporting			
	Increase	No change	Decrease	Fluctuate
Phenol demand inside the United States: U.S. producers	1	3	---	---
Importers	8	2	1	---
Purchasers	5	6	2	2
Phenol demand outside the United States: U.S. producers	4	---	---	---
Importers	11	---	1	---
Purchasers	11	---	1	2

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

Substitute products

Substitutes for acetone are limited. Most responding firms (4 of 6 U.S. producers, 11 of 13 importers, and 23 of 31 purchasers) reported that there were no substitutes. One U.S. producer stated that IPA can be produced from propylene instead of acetone. Two importers listed methyl ethyl ketone ("MEK") and ethyl acetate as substitutes for acetone as a solvent in paints and coatings. Two purchasers reported substituting other inputs for acetone in their downstream production. *** stated that it has replaced acetone with inert ingredients to offset costs and *** stated that has been trying to get many of its customers to switch from acetone to methyl acetate. ***.

***.

MMA can also be produced using two other production methods that do not use acetone, including ethylene-based production (C2 route) and isobutylene or MTBE-based production (C4 route). There is currently no ethylene-based production of MMA in the United

States or Europe, but there is such production in Asia and the Middle East.[44] Dow stated that ethylene-based MMA production is more cost-effective than acetone-based production and that worldwide, acetone-based MMA production has begun to decline.[45] ***.

Substitutability issues

The degree of substitution between domestic and imported acetone depends upon such factors as relative prices, quality (e.g., grade standards, defect rates, etc.), and conditions of sale (e.g., price discounts/rebates, lead times between order and delivery dates, reliability of supply, product services, etc.). Based on available data, staff believes that there is a high degree of substitutability between domestically produced acetone and acetone imported from subject sources.

Lead times

Acetone is primarily sold from inventory. U.S. producers reported that 75 percent of their commercial shipments were from inventories in 2018, with lead times averaging 14 days. The remaining 25 percent of their commercial shipments were produced-to-order, with lead times averaging 30 days. Subject importers reported that 59 percent of their commercial shipments were from U.S. inventories, 23 percent were produced-to-order, and 18 percent were from foreign inventories. Six importers (***) reported selling mainly from U.S. inventories, three (***), reported selling mainly from foreign inventories, and one (***) reported selling mainly produced-to-order acetone. Importers reported lead times of 2 to 30 days from U.S. inventories, 22 to 90 days from foreign inventories, and 30 days for produced-to-order acetone.

U.S. producers and most importers have their own storage tanks dedicated to acetone, but may also lease additional storage.[46] These storage tanks are expensive to lease and

[44] ***.

[45] Hearing transcript, pp. 166-167 (Knaub).

[46] Altivia stated than in 2018 it ran out of on-site storage, and therefore arranged to store its excess acetone on fleeting barges on the Ohio River. Hearing transcript, pp. 148-149 (Hayes). See Parts III and IV for information regarding U.S. producers' and importers' acetone storage.

maintain.[47] Tanks storing acetone are dedicated for this use only; in order to prepare them to store other substances, an extensive cleaning process must be undertaken.[48] Many of the large end users, including MMA producers, also have their own storage tanks for acetone.[49] Acetone suppliers in Texas may seek to reduce their inventories at the end of the year to avoid end of year state taxes on the inventories.[50]

Knowledge of country sources

Thirty-one purchasers indicated they had marketing/pricing knowledge of domestic product, 8 of product from Belgium, 11 of product from Korea, 7 of product from Singapore, 9 of product from South Africa, 7 of product from Spain, and 10 of product from nonsubject countries (Brazil, China, Finland, Germany, Japan, Russia, Saudi Arabia, and Taiwan).

As shown in table II-7, most responding purchasers reported that they and their customers "sometimes" or "never" make purchasing decisions based on the producer or country of origin. Reasons reported for purchasing based on the producer included: AdvanSix produced material required for one *** site that requires tighter specs; approved suppliers; diversification/risk mitigation; and strategic partners. *** stated that it prefers to purchase domestic product where most of its business is located but imports ***, even at a higher cost, for supply security. *** stated that at the end of 2017, U.S. producers would not commit to its 2018 supply needs because of the tight market anticipated as a result of Shell closure, and so it obtained commitments for imports to make up for the supply shortfall. Some purchasers reported that their customers may specify the supplier or have approved vendors. Purchasers *** stated that they look at cost, freight, and duties, with *** stating that Korea is a preferred country over other imports because it is duty-free compared to imports from Europe, which have import duties as well as volatile pricing and supply. *** stated that logistics and timing of delivery are factors. *** stated that it mainly purchases from U.S. producers, but will occasionally purchase imports when there are domestic supply shortages.

[47] Conference transcript, pp. 75-76 (Anderson).
[48] Conference transcript, p. 178 (Haug).
[49] Conference transcript, p. 80 (Duhe).
[50] Hearing transcript, p. 137 (Sanders).

Table II-7
Acetone: Purchasing decisions based on producer and country of origin

Purchaser/customer decision	Always	Usually	Sometimes	Never
Purchaser makes decision based on producer	3	6	13	11
Purchaser's customers make decision based on producer	---	1	9	18
Purchaser makes decision based on country	2	4	7	20
Purchaser's customers make decision based on country	---	1	5	22

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

Most purchasers (24 of 31 responding firms) reported that there were not certain types of acetone that were only available from particular sources. Of the seven firms that reported that there were, three purchasers stated that certain types of product were only available from domestic producers, including AdvanSix's lower water content grade, NF or USP Grade, and low methanol acetone. Two purchasers stated that South Africa was the only source for non-detectable benzene or coal-based acetone. One purchaser stated that acetone is a commodity but that there can be restrictions on timing of deliveries and vessel and barge sizes. *** stated that most imported product is of a quality suitable for MMA, but that it requires higher quality product for some end uses. Purchaser *** stated that domestic producers can provide special customer requirements such as high purity, low water, and low DAA acetone. In addition, *** stated that some of its customers request benzene-free acetone, which it stated is made by several acetone production processes including phenol, IPA, and coal.

Most responding purchasers (28 of 33) reported no country-specific preferences for acetone. Three firms reported that domestic product is preferred because of lower logistics costs or for end use products which require tighter acetone specifications, and one firm (***) reported that South Africa is the only source for non-detectable benzene acetone, which is approved for specific FDA-regulated production. *** stated that its purchase decisions are mostly cost based, and that Korea and Singapore were duty-free and thus preferred over imports from other countries, unless another source of imports had a lower delivered price. *** stated that it sometimes needs domestic acetone for low-water applications.

Factors affecting purchasing decisions

The most often cited top three factors firms consider in their purchasing decisions for acetone were price (29 firms), availability (25 firms), and quality (14 firms), as shown in table II-8. Price was the most frequently cited first-most and third-most important factor (cited by 11 firms and 13 firms, respectively). Availability was the second-most commonly reported first-most important factor (cited by 10 firms), and the most frequently reported second-most important factor (cited by 13 firms). Among the largest purchasers, ***.

***.

Table II-8
Acetone: Ranking of factors used in purchasing decisions as reported by U.S. purchasers, by factor

Factor	First	Second	Third	Total
Price/cost	11	7	11	29
Availability/supply	10	13	6	25
Quality	5	3	6	14
Other	7	10	9	---

Note.--Other factors include mode of delivery, supplier location, and logistics.

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

Purchasers' responses were nearly equally divided between "usually" (15 of 33 firms) and "sometimes" (14 firms) purchasing the lowest-priced product. Three firms "always" purchase the lowest-price product, and 1 reported it "never" does.

Importance of specified purchase factors

Purchasers were asked to rate the importance of 16 factors in their purchasing decisions (table II-9). The factors rated as very important by more than half of responding purchasers were availability (32 firms), reliability of supply (31), product consistency (28), quality meets industry standards (26), price (25), purity level/benzene content (20), delivery time (18), and delivery terms (17). A plurality of firms rated four factors as not important: minimum quantity requirements, product range, quality exceeds industry standards, and technical support/service.

Supplier certification

Most responding purchasers (28 of 33) require their suppliers to become certified or qualified to sell acetone to their firm. Most responding purchasers (23) reported that the time to qualify a new supplier was 90 days or fewer, with 15 of these firms reporting 30 days or less. Three firms (***) reported 180 days. Two purchasers reported that a supplier had failed in its attempt to qualify acetone, or had lost its approved status since 2016: one firm (***) stated that AdvanSix failed to qualify based on quality at one account, and the other purchaser (***) stated that Altivia failed to qualify.

Table II-9
Acetone: Importance of purchase factors, as reported by U.S. purchasers

Factor	Very important	Somewhat important	Not important
Availability	32	---	---
Delivery terms	17	13	1
Delivery time	18	13	---
Discounts offered	11	14	7
Extension of credit	12	17	2
Minimum quantity requirements	6	13	11
Packaging	10	8	13
Price	25	6	1
Product consistency	28	3	---
Product range	7	11	13
Purity level/benzene content	20	8	3
Quality meets industry standards	26	4	1
Quality exceeds industry standards	8	7	16
Reliability of supply	31	---	---
Technical support/service	4	13	14
U.S. transportation costs	16	7	9

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

Changes in purchasing patterns

Purchasers were asked about changes in their purchasing patterns from different sources since January 1, 2016 (table II-10). Six firms reported decreased purchases of domestic acetone. Reasons cited were the following: bid outcome (***); purchaser lost business (***); Shell shut down phenol unit (***); U.S. suppliers placed purchaser on allocation (***);[51] purchaser lost business to a company selling imported product at a fixed price (***); and product readily available, pricing typically competitive with global marketplace, and loss of large corporate account volumes (***). ***. *** added that U.S. acetone production was low in the earlier part of the period of investigation, as a result of industry consolidations, weak phenol demand, production issues from maintenance, and weather issues, and that acetone production increased in 2018 as a result of higher phenol demand. *** reported fluctuating domestic purchases, with an increase in 2018 because of an increase in its overall acetone needs, and a decrease in 2019 ***.

[51] ***.

Among firms reporting increased purchases of subject imports, *** reported increased purchases of Korean acetone in 2019 "to explore competitive pricing;" *** reported increased purchases from Korea and Singapore to diversify its supply sources and to insulate it from domestic supply disruptions and allocations, as well as ***; *** reported increased purchases from Korea in 2017 and 2018 because U.S. producers *** refused to sell to it; and *** reported increased purchases from Korea to assure reliable supply and product availability, and to maintain supplier diversity. *** reported increased and fluctuating purchases from U.S. producers and South Africa based on customer demand. *** reported increased imports from Spain ***.[52]

Twenty-one of 33 purchasers reported that they had changed suppliers since January 1, 2016. Reasons for adding suppliers included supply diversification and better logistics. *** stated that its major supplier has not changed, but that additional suppliers change annually based on the price and on its demand for acetone. *** had added imports from *** to meet supply needs, but recently dropped these sources due to the antidumping investigations. Four purchasers (***) reported that they stopped purchases from Shell because it exited the market and discontinued truck and rail sales of acetone in 2018. In addition, two firms (***) dropped Altivia in 2017 because it could not commit to supply acetone in 2018.

[52] ***.

Table II-10
Acetone: Changes in purchase patterns from U.S., subject, and nonsubject countries

Source of purchases	Did not purchase	Decreased	Increased	Constant	Fluctuated
United States	---	6	6	11	10
Belgium	14	---	1	---	---
Korea	10	1	5	---	3
Singapore	11	2	1	---	2
South Africa	10	2	1	5	3
Spain	12	1	1	---	2
All other sources	10	3	1	---	1
Sources unknown	9	3	2	4	2

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

***.

Importance of purchasing domestic product

Most purchasers (24 of 32) reported that none of their 2018 purchases required U.S.-produced acetone, and another six purchasers reported that 80 percent of their purchases did not require U.S.-produced product. Of the remaining three purchasers, *** reported that it requires domestic product for about *** percent of its purchases for other reasons, including ***, and that the remaining *** percent of its purchases ***. *** reported that *** percent of its purchases are required by its customers and *** percent are required by law to be domestic product. *** reported that *** percent of its 2018 purchases were required to be domestic because of its contract obligations. *** reported that *** percent of its purchases are required to be domestic because of its tighter internal specifications for a particular end use.

Comparisons of domestic products, subject imports, and nonsubject imports

Purchasers were asked a number of questions comparing acetone produced in the United States, subject countries, and nonsubject countries. First, purchasers were asked for a country-by-country comparison on the same 16 factors (table II-11) for which they were asked to rate the importance. Most purchasers reported that U.S. and imported acetone were comparable on almost all factors except delivery time, extension of credit, and U.S. transportation costs for some country pairs (Korea, Singapore, and Spain). Almost all firms reported that domestic and imported acetone were comparable with respect to price.

Comparison of U.S. -produced and imported acetone

In order to determine whether U.S. -produced acetone can generally be used in the same applications as imports from subject and nonsubject sources, U.S. producers, importers, and purchasers were asked whether the products can always, frequently, sometimes, or never be used interchangeably. As shown in table II-12, all responding U.S. producers and most responding importers and purchasers reported that domestic acetone can always or frequently be used interchangeably with acetone imported from subject countries.

A few firms provided additional comments regarding interchangeability. Three firms provided responses regarding the interchangeability of acetone from South Africa. Sasol stated that its acetone produced in South Africa is benzene-free and that customers requiring benzene-free acetone cannot substitute "standard" acetone in applications that require benzene-free product.[53] Purchaser *** stated that U.S. produced acetone has a detectable benzene content that cannot be substituted when non-detectable acetone is required.[54] On the other hand, importer *** stated that Sasol's acetone is almost always interchangeable with U.S.-produced acetone, with the exception of one of *** customers that prefers not to use Sasol product because of the different production process, although *** states that it does not believe the Sasol product is inferior in any way.[55]

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[53] ***. Respondent Sasol's postconference brief, p. 10 and exh. 1, pp. 4-5. Ten responding purchasers reported purchases of South African acetone, all ten of which also purchased acetone from other sources, including nine from U.S. producers.

[54] ***.

[55] ***.

Table II-11
Acetone: Purchasers' comparisons between U.S. -produced and imported product

Factor	U.S. vs. Belgium			U.S. vs. Korea			U.S. vs. Singapore		
	S	C	I	S	C	I	S	C	I
Availability	2	5	---	4	8	2	2	5	---
Delivery terms	2	4	---	3	9	---	2	4	---
Delivery time	2	4	---	6	4	2	3	2	1
Discounts offered	1	5	---	1	10	1	1	5	---
Extension of credit	1	5	---	4	8	---	3	3	---
Minimum quantity requirements	2	4	---	2	10	---	2	4	---
Packaging	1	5	---	2	11	---	2	4	---
Price[1]	---	6	---	---	11	1	---	6	---
Product consistency	---	6	---	---	12	---	---	6	---
Product range	1	5	---	1	11	---	1	5	---
Purity level/benzene content	1	4	---	---	11	---	1	4	---
Quality meets industry standards	---	6	---	---	12	---	---	6	---
Quality exceeds industry standards	1	5	---	---	12	---	1	5	---
Reliability of supply	1	5	---	2	7	2	1	5	---
Technical support/service	1	5	---	2	9	1	2	4	---
U.S. transportation costs[1]	1	5	---	3	8	1	3	3	---
Factor	**U.S. vs. South Africa**			**U.S. vs. Spain**			**U.S. vs. nonsubject**		
	S	C	I	S	C	I	S	C	I
Availability	2	10	1	2	6	---	2	3	1
Delivery terms	1	11	---	3	4	---	1	4	---
Delivery time	1	11	---	3	3	1	2	2	1
Discounts offered	---	11	1	---	6	1	1	4	---
Extension of credit	1	11	---	1	6	---	1	4	---
Minimum quantity requirements	1	11	---	2	5	---	1	4	---
Packaging	---	12	---	---	7	---	1	4	---
Price[1]	---	11	1	---	6	1	1	4	---
Product consistency	---	12	---	---	7	---	1	4	---
Product range	1	10	1	1	6	---	---	4	---
Purity level/benzene content	1	10	1	1	5	---	1	4	---
Quality meets industry standards	---	12	---	---	7	---	1	4	---
Quality exceeds industry standards	1	10	1	1	6	---	1	4	---
Reliability of supply	2	10	---	2	3	2	---	4	1
Technical support/service	2	10	---	1	5	1	1	3	1
U.S. transportation costs[1]	---	10	2	1	4	2	2	3	1

[1] A rating of superior means that price/U.S. transportation cost is generally lower. For example, if a firm reported "U.S. superior," it meant that the U.S. product was generally priced lower than the imported product.

Note.--S=first listed country's product is superior; C=both countries' products are comparable; I=first list country's product is inferior.

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

Table II-12
Acetone: Interchangeability between acetone produced in the United States and in other countries, by country pair

Country pair	U.S. producers				U.S. importers				U.S. purchasers			
	A	F	S	N	A	F	S	N	A	F	S	N
United States vs. Belgium	5	1	---	---	7	---	---	---	7	8	---	---
United States vs. Korea	5	1	---	---	8	1	1	---	7	10	1	---
United States vs. Singapore	5	1	---	---	9	1	---	---	6	9	---	---
United States vs. South Africa	4	1	---	---	2	2	2	---	11	7	2	---
United States vs. Spain	5	1	---	---	6	1	---	---	6	7	---	---
Belgium vs. Korea	4	---	---	---	3	1	1	---	3	6	1	---
Belgium vs. Singapore	4	---	---	---	4	---	---	---	4	5	---	1
Belgium vs. South Africa	4	---	---	---	1	1	2	---	2	4	1	---
Belgium vs. Spain	4	---	---	---	4	---	---	---	4	4	---	---
Korea vs. Singapore	4	---	---	---	5	2	---	---	5	5	---	---
Korea vs. South Africa	4	---	---	---	1	2	2	---	2	4	1	---
Korea vs. Spain	4	---	---	---	4	1	---	---	4	4	---	---
Singapore vs. South Africa	4	---	---	---	1	1	2	---	2	4	1	---
Singapore vs. Spain	4	---	---	---	4	---	---	---	4	4	---	---
South Africa vs. Spain	4	---	---	---	3	---	---	---	3	4	---	---
United States vs. Other	4	1	---	---	3	2	---	---	3	7	1	---
Belgium vs. Other	4	---	---	---	1	1	---	---	1	4	1	---
Korea vs. Other	4	---	---	---	1	2	---	---	1	5	1	---
Singapore vs. Other	4	---	---	---	1	2	---	---	1	5	1	---
South Africa vs. Other	4	---	---	---	1	1	---	---	1	4	1	---
Spain vs. Other	4	---	---	---	1	1	---	---	1	4	1	---

Note.--A=Always, F=Frequently, S=Sometimes, N=Never.

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

In other comments regarding interchangeability, purchaser *** reported that acetone from all sources is always interchangeable, and that the technical grade acetone that it purchases from its suppliers has met its specifications and is often blended. *** stated that interchangeability is not an issue, but rather ***.[56] Importer *** stated that some Korean acetone has had a DAA content that is too high for some of its customers.

[56] ***.

As can be seen from table II-13, almost all responding purchasers reported that U.S.-produced acetone and that imported from subject and nonsubject countries always or usually meets minimum quality specifications.

Table II-13
Acetone: Ability to meet minimum quality specifications, by source[1]

Source	Always	Usually	Sometimes	Rarely or never
United States	21	7	1	1
Belgium	4	3	---	---
Korea	8	3	1	---
Singapore	6	3	---	---
South Africa	11	2	1	---
Spain	3	4	---	---
Other countries	2	2	---	---

[1] Purchasers were asked how often domestically produced or imported acetone meets minimum quality specifications for their own or their customers' uses.

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

In addition, U.S. producers, importers, and purchasers were asked to assess how often differences other than price were significant in sales of acetone from the United States, subject, or nonsubject countries. As seen in table II-14, all responding U.S. producers and a majority of responding importers reported that such differences were sometimes or never significant in their sales of acetone in comparing domestic acetone to imports from each subject country. Purchaser responses were more divided with a slight majority of firms reporting that such differences were sometimes or never significant in their purchase decisions between U.S.-product and imported product from Belgium and from Korea, equal numbers of firms reporting always or frequently and sometimes or never with respect to Singapore and South Africa, and a slight majority of firms reporting always or frequently with respect to Spain.

Importer *** stated that it needs to keep inventory in a storage tank *** to compete with the domestic suppliers' transportation network. *** stated that it seeks to purchase *** of its needs by contract, which required *** to purchase imports, regardless of whether the import price was higher or lower than U.S. prices. *** stated that the transportation network for subject imports from *** is more complicated than purchasing domestically and the total cost is higher. *** reported that it buys much more U.S.-produced acetone than imported acetone because of product availability, proven reliability, proximity, lower logistic costs, vessel timing, and long-term relationships. *** reported that ***, that some Korean material had high DAA content, and that South African material was coal-

based. *** stated that U.S. producers offer a very limited range of oxygenated solvents, with most producers offering no other solvents, ***.

Table II-14
Acetone: Significance of differences other than price between acetone produced in the United States and in other countries, by country pair

Country pair	U.S. producers				U.S. importers				U.S. purchasers			
	A	F	S	N	A	F	S	N	A	F	S	N
United States vs. Belgium	---	---	3	3	---	2	---	5	2	3	3	5
United States vs. Korea	---	---	3	3	1	2	2	4	3	4	5	4
United States vs. Singapore	---	---	3	3	1	2	2	5	3	3	2	4
United States vs. South Africa	---	---	3	2	---	3	1	2	3	6	5	4
United States vs. Spain	---	---	3	3	---	3	---	4	2	4	2	3
Belgium vs. Korea	---	---	2	2	---	---	1	3	---	1	3	3
Belgium vs. Singapore	---	---	2	2	---	---	---	4	---	1	1	4
Belgium vs. South Africa	---	---	2	2	---	1	1	2	---	1	2	2
Belgium vs. Spain	---	---	2	2	---	---	---	4	---	1	2	4
Korea vs. Singapore	---	---	2	2	1	---	1	3	---	1	2	3
Korea vs. South Africa	---	---	2	2	---	1	1	2	---	1	2	2
Korea vs. Spain	---	---	2	2	---	---	1	3	---	1	3	3
Singapore vs. South Africa	---	---	2	2	---	1	1	2	---	1	2	2
Singapore vs. Spain	---	---	2	2	---	---	---	4	---	1	2	4
South Africa vs. Spain	---	---	2	2	---	---	1	2	---	1	3	2
United States vs. Other	---	---	3	2	1	2	---	2	2	3	2	1
Belgium vs. Other	---	---	2	2	---	---	---	2	---	1	2	1
Korea vs. Other	---	---	2	2	---	---	---	2	---	1	2	1
Singapore vs. Other	---	---	2	2	---	---	---	2	---	1	2	1
South Africa vs. Other	---	---	2	2	---	---	---	2	---	1	2	1
Spain vs. Other	---	---	2	2	---	---	---	2	---	1	2	1

Note. --A = Always, F = Frequently, S = Sometimes, N = Never.

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

Among purchasers, *** reported that the product it receives from INEOS and Mitsui can be blended product. *** stated that if the quality of acetone does not consistently meet standards, its entire production is negatively impacted. *** stated that South African material is tested to a non-detectable benzene content, and that the South African material of a single production lot is stored in a large dedicated storage tank which minimizes the number of times material has to be tested. *** stated that domestic producers are preferred for easier logistics. *** stated that supply diversity and supply

assurance are important factors other than price. *** reported that the advantages of domestic product are the need for less working capital, reduced infrastructure cost (renting a large storage tank to receive imports is extremely expensive), and lower transportation costs from major import ports to customers in the Midwest, but that having reliable consistent supply makes it necessary to import some supply, regardless of cost. ***.

Elasticity estimates

This section discusses elasticity estimates. No parties provided comments on these estimates in their prehearing or posthearing briefs.

U.S. supply elasticity

The domestic supply elasticity[57] for acetone measures the sensitivity of the quantity supplied by U.S. producers to changes in the U.S. market price of acetone. The elasticity of domestic supply depends on several factors including the level of excess capacity, the ease with which producers can alter capacity, producers' ability to shift to production of other products, the existence of inventories, and the availability of alternate markets for U.S.-produced acetone. Analysis of these factors above indicates that the U.S. industry has a limited ability to increase or decrease shipments to the U.S. market; an estimate in the range of 1 to 3 is suggested.

U.S. demand elasticity

The U.S. demand elasticity for acetone measures the sensitivity of the overall quantity demanded to a change in the U.S. market price of acetone. This estimate depends on factors discussed above such as the existence, availability, and commercial viability of substitute products, as well as the component share of the acetone in the production of any downstream products. Based on the available information, the aggregate demand for acetone is likely to be inelastic; a range of -0.50 to -0.75 is suggested.

[57] A supply function is not defined in the case of a non-competitive market.

Substitution elasticity

The elasticity of substitution depends upon the extent of product differentiation between the domestic and imported products.[58] Product differentiation, in turn, depends upon such factors as quality (e.g., chemistry, appearance, etc.) and conditions of sale (e.g., availability, sales terms/discounts/promotions, etc.). Based on available information, the elasticity of substitution between U.S.-produced acetone and imported acetone is likely to be in the range of 4 to 6.

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

Part 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 eight firms that accounted for the vast majority of U.S. production of acetone during 2018.

U.S. producers

The Commission issued a U.S. producer questionnaire to eleven firms based on information contained in the petition, and staff's research. Eight firms provided usable data on their productive operations. Staff believes that these responses represent the vast majority of U.S. production of acetone.

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

Table III-1
Acetone: U.S. producers, their position on the petition, production locations, and shares of reported production, 2018

Firm	Position on petition	Production location(s)	Share of production (percent)
AdvanSix	Petitioner	Parsippany, NJ Philadelphia, PA	***
Altivia	Petitioner	Haverhill, OH	***
Dow	***	Institute, WV	***
Goodyear	***	Pasadena, TX	***
INEOS	***	Theodore, AL	***
Olin	Petitioner	Freeport, Texas	***
SABIC	***	Mt. Vernon, IN	***
Shell	***	Deer Park, TX Tehodore, AL	***
Total			***

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

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

Table III-2 presents information on U.S. producers' ownership, related and/or affiliated firms of acetone. Three U.S. producers *** are related to foreign producers of acetone in nonsubject countries; however, *** has an affiliate in subject country (***). Also two U.S. producers (***) are related to U.S. importers of the subject merchandise.

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

Item / Firm	Firm Name	Affiliated/Ownership
Ownership:		
***	***	***
***	***	***
***	***	***
***	***	***
***	***	***
***	***	***
***	***	***
Related importers/exporters:		
***	***	***
***	***	***
***	***	***
Related producers:		
***	***	***
***	***	***
***	***	***
***	***	***
***	***	***
***	***	***

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

Table III-3 presents U.S. producers' reported changes in operations since January 1, 2016. In the aggregate, the following operational changes were reported by the six responding U.S. producers: one plant closure, one expansion, one acquisition, five prolonged shutdowns and four force majeure events.

Table III-3
Acetone: U.S. producers' reported changes in operations, since January 1, 2016

Item / Firm	Reported changed in operations
Plant closings:	
***	***
Expansions:	
***	***
Acquisitions:	
***	***
Prolonged shutdowns or curtailments:	
***	***
***	***
***	***
***	***
***	***
Weather related event(s) / force majeure event(s):	
***	***
***	***
***	***
***	***

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

U.S. production, capacity, and capacity utilization

Table III-4 and figure III-1 present U.S. producers' production, capacity, and capacity utilization. From 2016 to 2018, U.S. producers' total capacity decreased by 3.1 percent. Specifically, four U.S. producers' total capacity remained constant; two U.S producers, ***, increased their capacity by ***; while two U.S. producers, ***, decreased their capacity by *** percent and *** percent, respectively. Total U.S. production fluctuated throughout the period of investigation, it increased by 1.4 percent from 2016 to 2017, but declined by 4.9 percent from 2017 to 2018. U.S. producers reported an overall net decline in production and in capacity utilization from 2016 to 2018.

From January-June 2018 to January-June 2019, domestic capacity decreased by 0.1 percent. During this same period, total production decreased by 4.6 percent leading capacity utilization to decrease by 3.8 percentage points.

Table III-4
Acetone: U.S. producers' production, capacity, and capacity utilization, 2016-18, January to June 2018, and January to June 2019

Item	Calendar year			January to June	
	2016	2017	2018	2018	2019
	Capacity (short tons)				
AdvanSix	***	***	***	***	***
Altivia	***	***	***	***	***
Dow	***	***	***	***	***
Goodyear	***	***	***	***	***
INEOS	***	***	***	***	***
Olin	***	***	***	***	***
SABIC	***	***	***	***	***
Shell	***	***	***	***	***
Total capacity	1,627,678	1,730,248	1,578,008	790,022	789,105
	Production (short tons)				
AdvanSix	***	***	***	***	***
Altivia	***	***	***	***	***
Dow	***	***	***	***	***
Goodyear	***	***	***	***	***
INEOS	***	***	***	***	***
Olin	***	***	***	***	***
SABIC	***	***	***	***	***
Shell	***	***	***	***	***
Total production	1,374,809	1,398,299	1,332,796	683,566	649,591

Table continued on the next page.

Table III-4--Continued
Acetone: U.S. producers' production, capacity, and capacity utilization, 2016-18, January to June 2018, and January to June 2019

Item	Calendar year			January to June	
	2016	2017	2018	2018	2019
AdvanSix	***	***	***	***	***
Altivia	***	***	***	***	***
Dow	***	***	***	***	***
Goodyear	***	***	***	***	***
INEOS	***	***	***	***	***
Olin	***	***	***	***	***
SABIC	***	***	***	***	***
Shell	***	***	***	***	***
Average capacity utilization	84.5	80.8	84.5	86.5	82.3
	Share of production (percent)				
AdvanSix	***	***	***	***	***
Altivia	***	***	***	***	***
Dow	***	***	***	***	***
Goodyear	***	***	***	***	***
INEOS	***	***	***	***	***
Olin	***	***	***	***	***
SABIC	***	***	***	***	***
Shell	***	***	***	***	***
Average capacity utilization	100.0	100.0	100.0	100.0	100.0

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

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

Figure III-1
Acetone: U.S. producers' production, capacity, and capacity utilization, 2016-18, January to June 2018, and January to June 2019

* * * * * * *

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

Alternative products

Table III-5 presents data on U.S. producers' capacity and production of other products using the same equipment and machinery as acetone. As shown in table III-5, *** percent of the product produced during 2018 by U.S. producers was acetone. One firm *** reported producing 100 percent acetone due to its utilization of the ***. Besides Dow, all other known domestic producers produce acetone using the cumene based process.[1]

*** produced other products on the same equipment, specifically ***. *** reported that ***.

Table III-5
Acetone: U.S. producers' overall plant capacity and production on the same equipment as subject production, 2016-18, January to June 2018, and January to June 2019

Item	Calendar year			January to June	
	2016	2017	2018	2018	2019
	Quantity (short tons)				
Overall capacity	4,282,620	4,575,097	4,235,899	2,455,411	2,327,915
Production:					
Acetone	1,374,809	1,398,299	1,332,796	683,566	649,591
Co- or by-products	2,336,058	2,424,225	2,288,722	1,085,630	974,255
Other, alternative products	***	***	***	***	***
Total production on same machinery	***	***	***	***	***
	Ratios and shares (percent)				
Overall capacity utilization	***	***	***	***	***
Share of production:					
Acetone	***	***	***	***	***
Co- or by-products	***	***	***	***	***
Other, alternative products	***	***	***	***	***
Total production on same machinery	***	***	***	***	***

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

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

[1] Conference transcript, p. 162 (Grimson).

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

Table III-6 presents U.S. producers' U.S. shipments, export shipments, and total shipments. U.S. producers' U.S. shipments consistently accounted for the overwhelming majority of all shipments. From 2016 to 2018, the quantity of U.S. shipments decreased by 1.9 percent while the value increased by 39.6 percent. The unit value for U.S. producers' U.S. shipments increased by 42.2 percent from 2016 to 2018.

During the interim periods from January-June 2018 to January-June 2019, the quantity, value, and unit value of U.S. shipments decreased by 6.9 percent, 33.0 percent, and 28.0 respectively.

Table III-6
Acetone: U.S. producers' U.S. shipments, exports shipments, and total shipments, 2016-18, January to June 2018, and January to June 2019

Item	Calendar year			January to June	
	2016	2017	2018	2018	2019
	Quantity (short tons)				
U.S. shipments	1,294,400	1,263,434	1,270,187	639,311	594,979
Export shipments	97,709	123,517	70,335	42,191	35,880
Total shipments	1,392,109	1,386,951	1,340,522	681,502	630,859
	Value (1,000 dollars)				
U.S. shipments	724,399	950,056	1,011,047	494,845	331,496
Export shipments	51,691	85,549	53,352	32,032	17,597
Total shipments	776,090	1,035,605	1,064,399	526,877	349,093
	Unit value (dollars per short ton)				
U.S. shipments	560	752	796	774	557
Export shipments	529	693	759	759	490
Total shipments	557	747	794	773	553
	Share of quantity (percent)				
U.S. shipments	93.0	91.1	94.8	93.8	94.3
Export shipments	7.0	8.9	5.2	6.2	5.7
Total shipments	100.0	100.0	100.0	100.0	100.0
	Share of value (percent)				
U.S. shipments	93.3	91.7	95.0	93.9	95.0
Export shipments	6.7	8.3	5.0	6.1	5.0
Total shipments	100.0	100.0	100.0	100.0	100.0

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

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

U.S. producers' inventories

Table III-7 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**.** From 2016 to 2018, end-of-period inventories held by U.S. producers decreased by 6.0 percent. The ratio of inventories to production, U.S. shipments, and total shipments each fluctuated from 2016 to 2018. However, during the interim periods January-June 2018 to January-June 2019, end-of-period inventories held by U.S. producers increased by 3.7 percent.

Four firms' (***) inventories increased between 2016 and 2018, while three firms' (***) inventories decreased. *** accounted for the majority of the increase in inventories and had the greatest increase (other than ***) in the ratio of imports to production, to U.S. shipments, and to total shipments, while *** accounted for the majority of the decline and the greatest decline in the aforementioned ratios.

Table III-7
Acetone: U.S. producers' inventories, 2016-18, January to June 2018, and January to June 2019

Item	Calendar year			January to June	
	2016	2017	2018	2018	2019
	Quantity (short tons)				
U.S. producers' end-of-period inventories	55,102	67,788	58,410	73,726	76,436
	Ratio (percent)				
Ratio of inventories to.--					
U.S. production	4.0	4.8	4.4	5.4	5.9
U.S. shipments	4.3	5.4	4.6	5.8	6.4
Total shipments	4.0	4.9	4.4	5.4	6.1

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

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

U.S. producers' storage capacity

U.S. producers' acetone operations storage are presented in table III-8. In aggregate storage of acetone was stable from 2016 to 2017 and increased by *** percent from 2017 to 2018. The quantity of acetone stored in facilities owned by domestic producers remained unchanged; however, acetone stored in facilities leased by domestic producers increased by *** from 2017 to 2018, due to increases by ***. From 2016 to 2018, the number of days inventories exceeded 90 percent of storage increased by 50 percentage points. In 2016 and 2017, two firms' (***) inventories exceeded 90 percent of storage, while in 2018, five firms (***) exceeded 90 percent of storage. ***.

***.

Table III-8
Acetone: U.S. producers' storage capacity, 2016-18

Item	Calendar year ending Dec. 31		
	2016	2017	2018
	Quantity (short tons)		
Acetone: Owned storage	***	***	***
Acetone: Leased storage	***	***	***
Total, acetone storage	***	***	***
	Share of quantity (percent)		
Acetone: Owned storage	***	***	***
Acetone: Leased storage	***	***	***
Total, acetone storage	***	***	***
	Ratio (percent)		
Acetone storage utilization rate	***	***	***
Acetone to phenol storage ratio	***	***	***
	Inventory exceeded 90 percent of storage capacity		
Days inventories > 90 % capacity	***	***	***
# firms inventories > 90 % capacity	***	***	***
Share of year inventories > 90 % capacity	***	***	***

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

U.S. producers' imports and purchases

U.S. producers' imports of acetone are presented in table III-9. Two U.S. producers reported directly importing acetone. *** imported acetone from subject countries *** and *** imported acetone from its affiliated producer in Belgium. From 2016 to 2018, ***.

One firm (***) purchased subject imports from Korea, representing less than *** percent of its production in any year during 2016-18.[2] Four producers

[2] ***.

(***) purchased acetone from other domestic producers. All but ***, increased purchases between 2016 and 2018, while all U.S. producers had lower purchases in January-June 2019 compared to January-June 2018.

Table III-9
Acetone: U.S. producers' imports, 2016-18, January to June 2018, and January to June 2019

Item	Calendar year			January to June	
	2016	2017	2018	2018	2019
	Quantity (short tons)				
***	***	***	***	***	***
*** .-- ***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
	Ratio (percent)				
***.-- ***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
	Narrative				
***	***				
	Quantity (short tons)				
***	***	***	***	***	***
***	***	***	***	***	***
	Ratio (percent)				
***	***	***	***	***	***
	Narrative				
***	***				

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

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

U.S. employment, wages, and productivity

Table III-10 shows U.S. producers' employment-related data. From 2016 to 2018, the number of production and related workers ("PRWs") fluctuated slightly. Over the same period, both the total hours worked and hours worked per PRW declined by 5.7 percent and 3.8 percent respectively. Wages paid increased slightly each year throughout the period as unit labor costs fluctuated due to varying productivity.

Table III-10
Acetone: U.S. producers' employment related data, 2016-18, January to June 2018, and January to June 2019

Item	Calendar year			January to June	
	2016	2017	2018	2018	2019
Production and related workers (PRWs) (number)	620	593	608	621	620
Total hours worked (1,000 hours)	1,480	1,393	1,396	681	678
Hours worked per PRW (hours)	2,387	2,349	2,296	1,097	1,094
Wages paid ($1,000)	71,173	69,280	70,253	35,284	33,470
Hourly wages (dollars per hour)	$48.09	$49.73	$50.32	$51.81	$49.37
Productivity (short tons per 1,000 hour)	928.9	1,003.8	954.7	1,003.8	958.1
Unit labor costs (dollars per short ton)	$52	$50	$53	$52	$52

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

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

U.S. importers

The Commission issued importer questionnaires to 21 firms believed to be importers of acetone, as well as to all U.S. producers of acetone.[1] Usable questionnaire responses were received from 14 companies, representing 71.5 percent of U.S. imports from Belgium, 79.8 percent of U.S. imports from Korea, 129.3 percent of U.S. imports from Singapore, 92.3 percent of U.S. imports from South Africa, and 78.6 percent of U.S. imports from Spain under HTS subheadings 2914.11.10 and 2914.11.50. Table IV-1 lists all responding U.S. importers of acetone from Belgium, Korea, Singapore, South Africa, Spain, and other sources, their locations, and their shares of U.S. imports, in 2018.

Table IV-1
Acetone: U.S. importers, their headquarters, and share of total imports by source, 2018

Firm	Headquarters	Share of imports by source (percent)			
		Belgium	Korea	Singapore	South Africa
Dow	Deer Park, TX	***	***	***	***
INEOS	Theodore, AL	***	***	***	***
Integra	Houston, TX	***	***	***	***
KH Chemicals	Hamilton, NJ	***	***	***	***
KMG	Forth Worth, TX	***	***	***	***
LG Chem	Atlanta, GA	***	***	***	***
Lucite	Cordova, TN	***	***	***	***
Mitsui	New York, NY	***	***	***	***
Monument	Houston, TX	***	***	***	***
Oxyde Chemicals	Houston, TX	***	***	***	***
Plaza	Houston, TX	***	***	***	***
Sasol	Houston, TX	***	***	***	***
Sumitomo	Houston, TX	***	***	***	***
Transchem	Carlsbad, CA	***	***	***	***
Total		***	***	***	***

Table continued on the next page.

[1] The Commission issued questionnaires to those firms identified in the petition, along with firms that, based on a review of data provided by U.S. Customs and Border Protection ("Customs"), may have accounted for more than one percent of total imports under HTS subheadings 2914.11.10 and 2914.11.50 in 2018.

Table IV-1--Continued
Acetone: U.S. importers, their headquarters, and share of total imports by source, 2018

Firm	Headquarters	Share of imports by source (percent)			
		Spain	Subject sources	Nonsubject sources	All import sources
Dow	Deer Park,, TX	***	***	***	***
INEOS	Theodore, AL	***	***	***	***
Integra	Houston, TX	***	***	***	***
KH Chemicals	Hamilton, NJ	***	***	***	***
KMG	Forth Worth, TX	***	***	***	***
LG Chem	Atlanta, GA	***	***	***	***
Lucite	Cordova, TN	***	***	***	***
Mitsui	New York, NY	***	***	***	***
Monument	Houston, TX	***	***	***	***
Oxyde Chemicals	Houston, TX	***	***	***	***
Plaza	Houston, TX	***	***	***	***
Sasol	Houston, TX	***	***	***	***
Sumitomo	Houston, TX	***	***	***	***
Transchem	Carlsbad, CA	***	***	***	***
Total		***	***	***	***

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

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

U.S. imports

Table IV-2 and figure IV-1 present data for U.S. imports of acetone from Belgium, Korea, Singapore, South Africa, Spain, and all other sources. Between 2016 and 2018, the quantity of acetone imports from all subject countries increased by 144.8 percent; specifically it increased by 51.1 percent from 2016 to 2017 and by 62.1 percent from 2017 to 2018. However, imports were 27.4 percent lower in interim 2019 than in interim 2018. During 2016-18, imports increased in each year for each subject country, except from South Africa in 2017. Korea accounted for the greatest increase by quantity, while Singapore accounted for the largest percentage increase.

Imports of acetone from nonsubject countries fluctuated during 2016-18; more than doubling from 2016 to 2017, but decreased between 2017 and 2018, ending 21.6 percent higher in 2018 than in 2016. As a share of total imports, imports from the subject countries increased by 5.3 percentage points from 2016 to 2018 and was 2.9 percentage points higher in interim 2019 than in interim 2018.

The value of imports from subject countries more than tripled between 2016 and 2018. The average unit values of imports from aggregate subject and nonsubject countries increased from 2016 to 2018 by 42.0 percent and 3.0 percent respectively, and were 27.9 and 8.4 percent lower in interim 2019 than in interim 2018.

Table IV-2
Acetone: U.S. imports by source, 2016-18, January to June 2018, and January to June 2019

Item	Calendar year			January to June	
	2016	2017	2018	2018	2019
	Quantity (short tons)				
U.S. imports from.--					
Belgium	33,670	49,626	69,176	31,959	16,553
Korea	25,944	55,688	99,334	53,943	34,543
Singapore	2,761	4,403	13,546	8,306	7,862
South Africa	28,601	26,761	30,000	15,424	13,493
Spain	6,834	11,308	27,431	12,595	16,344
Subject sources	97,811	147,786	239,487	122,226	88,795
Nonsubject sources	12,236	28,036	14,875	8,094	3,058
All import sources	110,047	175,822	254,362	130,319	91,853
	Value (1,000 dollars)				
U.S. imports from.--					
Belgium	17,197	35,249	56,832	24,745	10,108
Korea	13,992	40,815	67,820	40,050	18,904
Singapore	1,669	3,057	9,590	6,518	3,872
South Africa	14,675	19,414	24,032	12,820	7,984
Spain	3,319	7,762	18,576	8,798	7,817
Subject sources	50,853	106,297	176,850	92,932	48,684
Nonsubject sources	8,847	21,969	11,075	5,921	2,048
All import sources	59,700	128,266	187,925	98,853	50,733
	Unit value (dollars per short ton)				
U.S. imports from.--					
Belgium	511	710	822	774	611
Korea	539	733	683	742	547
Singapore	605	694	708	785	492
South Africa	513	725	801	831	592
Spain	486	686	677	699	478
Subject sources	520	719	738	760	548
Nonsubject sources	723	784	745	732	670
All import sources	542	730	739	759	552
	Share of quantity (percent)				
U.S. imports from.--					
Belgium	30.6	28.2	27.2	24.5	18.0
Korea	23.6	31.7	39.1	41.4	37.6
Singapore	2.5	2.5	5.3	6.4	8.6
South Africa	26.0	15.2	11.8	11.8	14.7
Spain	6.2	6.4	10.8	9.7	17.8
Subject sources	88.9	84.1	94.2	93.8	96.7
Nonsubject sources	11.1	15.9	5.8	6.2	3.3
All import sources	100.0	100.0	100.0	100.0	100.0

Table continued on the next page.

Table IV-2—Continued
Acetone: U.S. imports by source, 2016-18, January to June 2018, and January to June 2019

Item	Calendar year			January to June	
	2016	2017	2018	2018	2019
	Share of value (percent)				
U.S. imports from.--					
Belgium	28.8	27.5	30.2	25.0	19.9
Korea	23.4	31.8	36.1	40.5	37.3
Singapore	2.8	2.4	5.1	6.6	7.6
South Africa	24.6	15.1	12.8	13.0	15.7
Spain	5.6	6.1	9.9	8.9	15.4
Subject sources	85.2	82.9	94.1	94.0	96.0
Nonsubject sources	14.8	17.1	5.9	6.0	4.0
All import sources	100.0	100.0	100.0	100.0	100.0
	Ratio to U.S. production				
U.S. imports from.--					
Belgium	2.4	3.5	5.2	4.7	2.5
Korea	1.9	4.0	7.5	7.9	5.3
Singapore	0.2	0.3	1.0	1.2	1.2
South Africa	2.1	1.9	2.3	2.3	2.1
Spain	0.5	0.8	2.1	1.8	2.5
Subject sources	7.1	10.6	18.0	17.9	13.7
Nonsubject sources	0.9	2.0	1.1	1.2	0.5
All import sources	8.0	12.6	19.1	19.1	14.1

Note.--Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Spain data was adjusted to correct some quantity being reporting thousands of short tons instead of actual short tons.

Source: Compiled from official U.S. import statistics using HTS statistical reporting numbers 2914.11.1000 and 2914.11.5000, accessed September 4, 2019.

Figure IV-I
Acetone: U.S. imports by source, 2016-18, January to June 2018, and January to June 2019

* * * * * * *

U.S. importers' storage capacity

U.S. importers' U.S. storage capacity is presented in table IV-3. While owned storage capacity remained level during 2016-18, the capacity of leased storage increased *** percent between 2017 and 2018, as ending inventories increased over *** percent between 2016 and 2018. The number of days inventory exceeded 90 percent of storage capacity increased from *** days in 2016 (*** reporting) to average of *** days in 2018 (*** reporting), with share of inventories exceeding 90 percent increasing from *** percent to *** percent.[2]

[2] *** reported inventories exceeding 90 percent of storage in 2016 and 2017, while *** also reported in 2018.

Table IV-3
Acetone: U.S. importers' storage capacity, 2016-18

	Calendar year ending Dec. 31		
	2016	2017	2018
	Quantity (short tons)		
Owned storage	***	***	***
Leased storage	***	***	***
Total storage	***	***	***
	Share of quantity (percent)		
Owned storage	***	***	***
Leased storage	***	***	***
Total storage	***	***	***
	Quantity (short tons)		
Ending inventories Q	***	***	***
	Ratio (percent)		
Acetone storage utilization rate	***	***	***
	Inventory exceeded 90 percent of storage capacity		
Days inventories > 90 % capacity	***	***	***
# firms inventories > 90 % capacity	***	***	***
Share of year inventories > 90 % capacity	***	***	***

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

Negligibility

The statute requires that an investigation be terminated without an injury determination if imports of the subject merchandise are found to be negligible.[3] 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.[4]

Table IV-4 presents the quantity of U.S. imports in the twelve-month period preceding the filing of the petitions (February 2018 through January 2019) and the share of quantity of total

[3] 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)).

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

U.S. imports for each subject country and nonsubject sources. U.S. imports from Belgium, Korea, Singapore, South Africa, and Spain accounted for 28.2 percent, 37.8 percent, 3.9 percent, 11.3 percent, and 12.7 percent, respectively, of total imports of acetone by quantity from February 2018 to January 2019.

Table IV-4
Acetone: U.S. imports in the twelve month period preceding the filing of the petition, official statistics February 2018 through January 2019

Item	February 2018 through January 2019	
	Quantity (short tons)	Share quantity (percent)
U.S. imports from.--		
Belgium	68,757	28.2
Korea	92,133	37.8
Singapore	9,437	3.9
South Africa	27,439	11.3
Spain	31,045	12.7
Subject sources	228,811	93.9
Nonsubject sources	14,896	6.1
All import sources	243,707	100.0

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

Source: Compiled from official U.S. import statistics using HTS statistical reporting numbers 2914.11.1000 and 2914.11.5000, accessed September 4, 2019.

Cumulation considerations

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

Fungibility

Petitioners asserted that that the vast majority of acetone sold in the U.S. market is produced and marketed as a standard grade.[5] Standard grade acetone may undergo further

[5] Conference transcript, p. 22 (Stephenson) and hearing transcript, p. 32 (Sanders)

testing and certification, either at the production facility or at the customer's facility, to meet specialty grade requirements.[6] However, petitioners stated that the market for specialty grade acetone is small, accounting for approximately less than 2 percent of the total U.S. acetone market.[7] Both petitioners and respondents, except Sasol, contend that acetone is fungible regardless of source. Sasol contends that benzene-free acetone is different from specialty grade acetone because specialty grade acetone may have lower benzene levels that technical grade acetone but is not benzene-free.[8]

Table IV- 5, figure IV-2 and IV-3 present data for U.S. producers' and U.S. importers' U.S. shipment by product type for 2018. U.S. shipments by product type data are categorized by standard/technical grade and specialty grade acetone, and by benzene free and other acetone. U.S. producers and U.S. imports from each source, except for Spain, had U.S. shipments of benzene free acetone, although U.S. producers and imports from Belgium and nonsubject sources only had U.S. shipments of benzene free standard/technical grade, while the remaining sources also had U.S. shipments of benzene free specialty grade acetone.[9] All sources but South Africa had U.S. shipments of other acetone of standard/technical grade, while only U.S. producers had U.S. shipments of other acetone of specialty grade.

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[6] U.S. producer AdvanSix sells a National Formulary ("NF") grade and a low water grade for pharmaceutical applications, ***. ***. Petition, pp. 5-6 and hearing transcript pp.150-151. U.S. producers Olin and Altivia do not produce specialty grade acetone. Conference transcript, p. 65 (Duhe and Safar). ***.

Among importers, specialty grade shipments were reported only for imports from Korea. The South African producer Sasol stated that its benzene-free acetone is not a specialty grade but rather is a distinct product from acetone that is produced using cumene. Respondent Sasol's postconference brief, exh. 1, p. 2.

[7] Conference transcript, p. 27 (Stephenson).

[8] Sasol's posthearing brief, p.8.

[9] *** represented the *** of U.S. shipments of benzene free acetone, with *** accounting for the remainder. One firm, *** did not provide a response. ***.

Table IV-5
Acetone: U.S. producers' and U.S. importers' U.S. shipment by product type, 2018

	Quantity (short tons)				
	Benzene free acetone: Standard / technical grade	Benzene free acetone: Specialty grades	Other acetone: Standard / technical grade	Other acetone: Specialty grades	Total acetone
U.S. producers	***	***	***	***	***
U.S. importers U.S. imports from.--					
Belgium	***	***	***	***	***
Korea	***	***	***	***	***
Sinagpore	***	***	***	***	***
South Africa	***	***	***	***	***
Spain	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject source	***	***	***	***	***
All import sources	***	***	***	***	***
U.S. producers and U.S. importers	***	***	***	***	***
	Share across (percent)				
U.S. producers	***	***	***	***	***
U.S. importers U.S. imports from.--					
Belgium	***	***	***	***	***
Korea	***	***	***	***	***
Sinagpore	***	***	***	***	***
South Africa	***	***	***	***	***
Spain	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject source	***	***	***	***	***
All import sources	***	***	***	***	***
U.S. producers and U.S. importers	***	***	***	***	***
	Share down (percent)				
U.S. producers	***	***	***	***	***
U.S. importers U.S. imports from.--					
Belgium	***	***	***	***	***
Korea	***	***	***	***	***
Sinagpore	***	***	***	***	***
South Africa	***	***	***	***	***
Spain	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject source	***	***	***	***	***
All import sources	***	***	***	***	***
U.S. producers and U.S. importers	***	***	***	***	***

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

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

Figure IV-2
Acetone: U.S. producers' and U.S. importers' U.S. shipments by grade, 2018

* * * * * * *

Figure IV-3
Acetone: U.S. producers' and U.S. importers' U.S. shipments of specialty grade versus technical grade, 2018

* * * * * * *

Geographical markets

As illustrated in table IV-6, U.S. Customs districts located in the South[10] accounted for (by share of quantity) the largest share of the imports of acetone from the subject countries (87.4 percent) during 2018, followed by districts located in the East[11] accounting for 12.3 percent and then districts in the West[12] accounting for 0.3 percent based on quantities of imports. No imports of acetone from subject countries entered through the districts located in the North.[13] The overwhelming majority of subject imports from Belgium (100 percent), Korea (99.4 percent), Singapore (99.7 percent) and Spain (99.9 percent) arrived through ports of entry in the South, while the vast majority of imports from South Africa (98.3 percent) entered through ports of entry in the East.

Table IV-6
Acetone: U.S. imports by Customs district port of entry, 2018

Item	Border of entry				
	East	North	South	West	All borders
	Quantity (short tons)				
U.S. imports from.--					
Belgium	14	---	69,148	14	69,176
Korea	---	---	98,778	556	99,334
Singapore	---	---	13,506	40	13,546
South Africa	29,494	---	478	28	30,000
Spain	40	---	27,391	---	27,431
Subject sources	29,548	---	209,301	638	239,487
Nonsubject sources	351	25	13,350	1,149	14,875
All import sources	29,899	25	222,650	1,787	254,362

Table continued on the next page.

[10] The "South" includes the following Customs entry districts: Dallas-Fort Worth, Texas; El Paso, Texas; Houston-Galveston, Texas; Laredo, Texas; Miami, Florida; Mobile, Alabama; New Orleans, Louisiana; and Tampa, Florida.

[11] The "East" includes the following Customs entry districts: Baltimore, Maryland; Boston, Massachusetts; Buffalo, New York; Charleston, South Carolina; Charlotte, North Carolina; New York, New York; Norfolk, Virginia; Ogdensburg, New York; Philadelphia, Pennsylvania; Portland, Maine; San Juan, Puerto Rico; Savannah, Georgia; St. Albans, Vermont; and Washington, District of Columbia.

[12] The "West" includes the following Customs entry districts: Columbia-Snake, Oregon; Honolulu, Hawaii; Los Angeles, California; Nogales, Arizona; San Diego, California; San Francisco, California; and Seattle, Washington.

[13] The "North" includes the following Customs entry districts: Chicago, Illinois; Cleveland, Ohio; Detroit, Michigan; Duluth, Minnesota; Great Falls, Montana; Milwaukee, Wisconsin; Minneapolis, Minnesota; and Pembina, North Dakota.

Table IV-6--Continued
Acetone: U.S. imports by Customs district port of entry, 2018

Item	Border of entry				
	East	North	South	West	All borders
	Share across (percent)				
U.S. imports from.--					
Belgium	0.0	---	100.0	0.0	100.0
Korea	---	---	99.4	0.6	100.0
Singapore	---	---	99.7	0.3	100.0
South Africa	98.3	---	1.6	0.1	100.0
Spain	0.1	---	99.9	---	100.0
Subject sources	12.3	---	87.4	0.3	100.0
Nonsubject sources	2.4	0.2	89.7	7.7	100.0
All import sources	11.8	0.0	87.5	0.7	100.0
	Share down (percent)				
U.S. imports from.--					
Belgium	0.0	---	31.1	0.8	27.2
Korea	---	---	44.4	31.1	39.1
Singapore	---	---	6.1	2.3	5.3
South Africa	98.6	---	0.2	1.6	11.8
Spain	0.1	---	12.3	---	10.8
Subject sources	98.8	---	94.0	35.7	94.2
Nonsubject sources	1.2	100.0	6.0	64.3	5.8
All import sources	100.0	100.0	100.0	100.0	100.0

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

Source: Compiled from official U.S. import statistics using HTS statistical reporting numbers 2914.11.1000 and 2914.11.5000, accessed September 4, 2019.

Presence in the market

Table IV-7, figure IV-4 and IV-5 present monthly import statistics for acetone from January 2016 through June 2019. Subject imports from South Africa were present in the U.S. market in 41 of 42 months during January 2016-June 2019. Subject imports from Korea were present in 36 months; subject imports from Belgium were present in 32 months; subject imports from Spain were present in 18 months; subject imports from Singapore were present in 14 months.

Table IV-7
Acetone: Monthly U.S. imports, January 2016 through June 2019

U.S. imports	Belgium	Korea	Singapore	South Africa	Spain	Subject sources	Nonsubject sources	All import sources
	Quantity (short tons)							
2016: January	5,652	6,811	---	1,984	2,316	16,763	39	16,801
2016: February	3,471	3,915	---	1,012	---	8,398	34	8,431
2016: March	---	3,214	---	2,656	2,314	8,184	145	8,329
2016: April	3,840	---	---	2,953	---	6,793	50	6,843
2016: May	5,514	---	---	2,333	---	7,847	30	7,877
2016: June	---	3,166	---	2,434	---	5,600	16	5,616
2016: July	2,700	1,657	---	2,477	---	6,834	93	6,927
2016: August	3,098	548	2,761	2,466	2,205	11,077	1,740	12,817
2016: September	---	---	---	2,206	---	2,206	9,752	11,958
2016: October	3,369	3,307	---	2,548	---	9,223	37	9,260
2016: November	3,705	3,327	---	2,550	---	9,582	142	9,724
2016: December	2,321	---	---	2,982	---	5,303	159	5,462
2017: January	---	3,302	---	1,987	2,317	7,607	5,692	13,299
2017: February	2,724	1,654	---	2,318	---	6,696	3	6,700
2017: March	2,961	3,322	---	3,210	---	9,493	44	9,537
2017: April	2,755	---	---	2,052	2,204	7,011	2,277	9,288
2017: May	3,307	8,967	---	2,330	---	14,605	32	14,637
2017: June	7,027	28	---	1,663	---	8,719	6,804	15,523
2017: July	4,298	4,976	---	1,580	2,314	13,168	2,339	15,507
2017: August	4,293	4,967	---	2,266	---	11,527	62	11,589
2017: September	8,631	5,794	---	2,730	2,269	19,424	64	19,488
2017: October	4,902	6,713	---	3,756	---	15,371	463	15,834
2017: November	---	8,190	2,206	2,868	---	13,264	4,608	17,872
2017: December	8,727	7,773	2,197	---	2,205	20,901	5,647	26,548

Table continues on the next page.

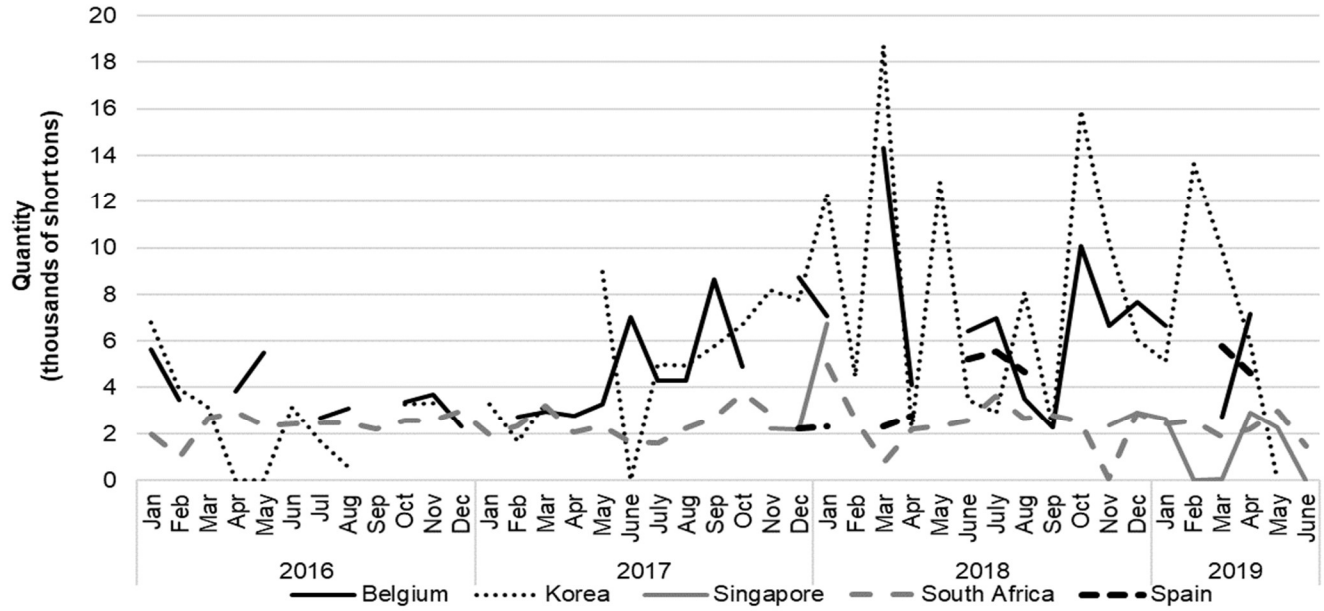
Table IV-7--Continued
Acetone: Monthly U.S. imports, January 2016 through June 2019

U.S. imports	Belgium	Korea	Singapore	South Africa	Spain	Subject sources	Nonsubject sources	All import sources
	Quantity (short tons)							
2018: January	7,053	12,323	6,728	4,980	2,315	33,398	170	33,569
2018: February	---	4,476	---	2,546	---	7,022	88	7,110
2018: March	14,333	18,691	---	783	2,314	36,121	115	36,236
2018: April	4,133	2,127	1,574	2,220	2,756	12,809	4,565	17,374
2018: May	---	12,841	---	2,325	---	15,166	107	15,272
2018: June	6,439	3,484	5	2,571	5,210	17,709	3,050	20,759
2018: July	6,999	2,892	---	3,636	5,551	19,078	3,660	22,737
2018: August	3,526	8,088	---	2,660	4,656	18,931	208	19,139
2018: September	2,271	2,203	---	2,800	---	7,274	2,405	9,679
2018: October	10,087	15,924	---	2,539	4,629	33,179	131	33,310
2018: November	6,671	10,212	2,346	63	---	19,293	76	19,369
2018: December	7,663	6,072	2,894	2,879	---	19,508	300	19,809
2019: January	6,634	5,122	2,618	2,419	5,929	22,722	192	22,914
2019: February	---	13,636	29	2,547	---	16,212	118	16,330
2019: March	2,751	9,864	58	1,894	5,786	20,354	2,409	22,763
2019: April	7,168	5,918	2,903	2,205	4,629	22,822	74	22,896
2019: May	---	3	2,246	2,987	---	5,237	165	5,402
2019: June	---	---	7	1,442	---	1,449	100	1,549

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

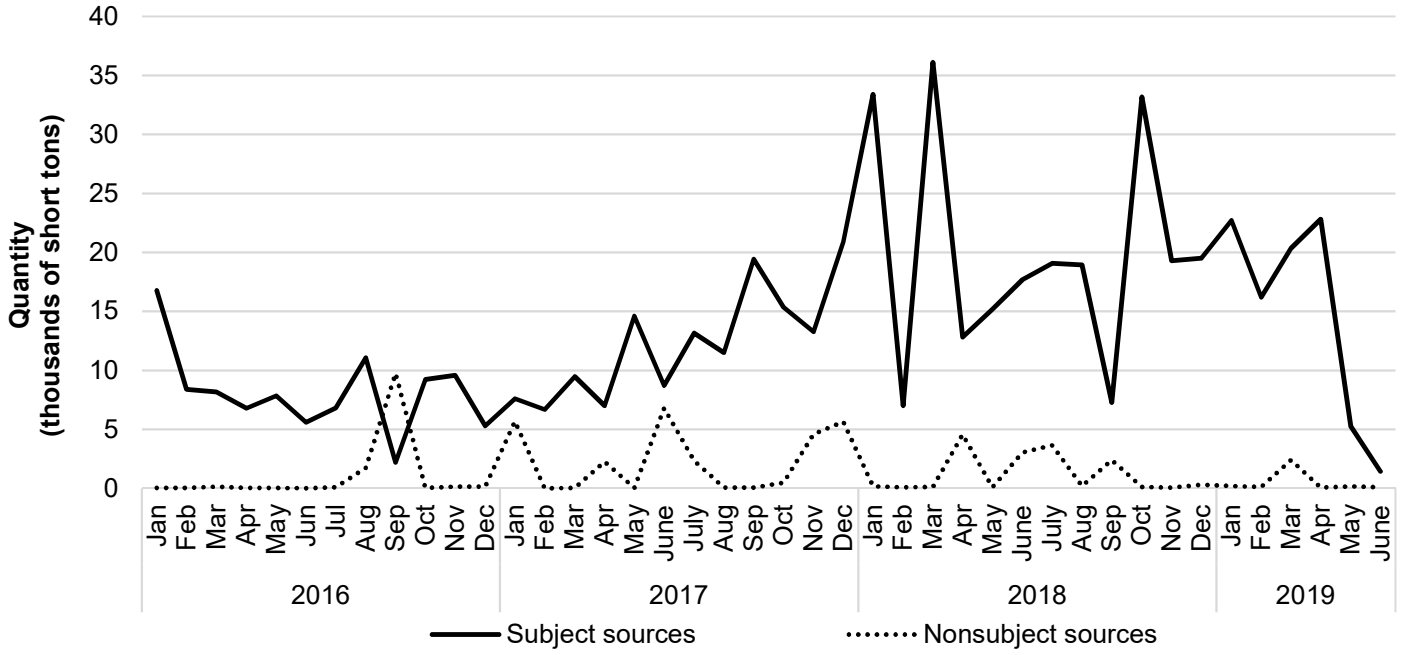
Source: Compiled from official U.S. import statistics using HTS statistical reporting numbers 2914.11.1000 and 2914.11.5000, accessed September 4, 2019.

Figure IV-4
Acetone: U.S. imports from subject countries by month, January 2016 through June 2019



Source: Compiled from Census import data under HTS numbers 2914.11.1000 and 2914.11.5000.

Figure IV-5
Acetone: U.S. imports from subject countries by month, January 2016 through June 2019



Source: Compiled from Census import data under HTS numbers 2914.11.1000 and 2914.11.5000

Apparent U.S. consumption

Table IV-8 and figure IV-6 present data on apparent U.S. consumption for acetone. Apparent U.S. consumption based on quantity increased by 2.5 percent from 2016 to 2017 and continued to increase by 5.9 percent from 2017 to 2018, for an overall increase of 8.6 percent during 2016 to 2018. U.S. producers' shipments decreased by 1.9 percent over 2016 to 2018. U.S. imports from subject sources based on quantity increased by 51.1 percent from 2016 to 2017, and further increased by 62.1 percent from 2017 to 2018 for an overall increase of 144.8 percent. Due to generally rising average unit values, apparent consumption based on value increased by 52.9 percent from 2016 to 2018.

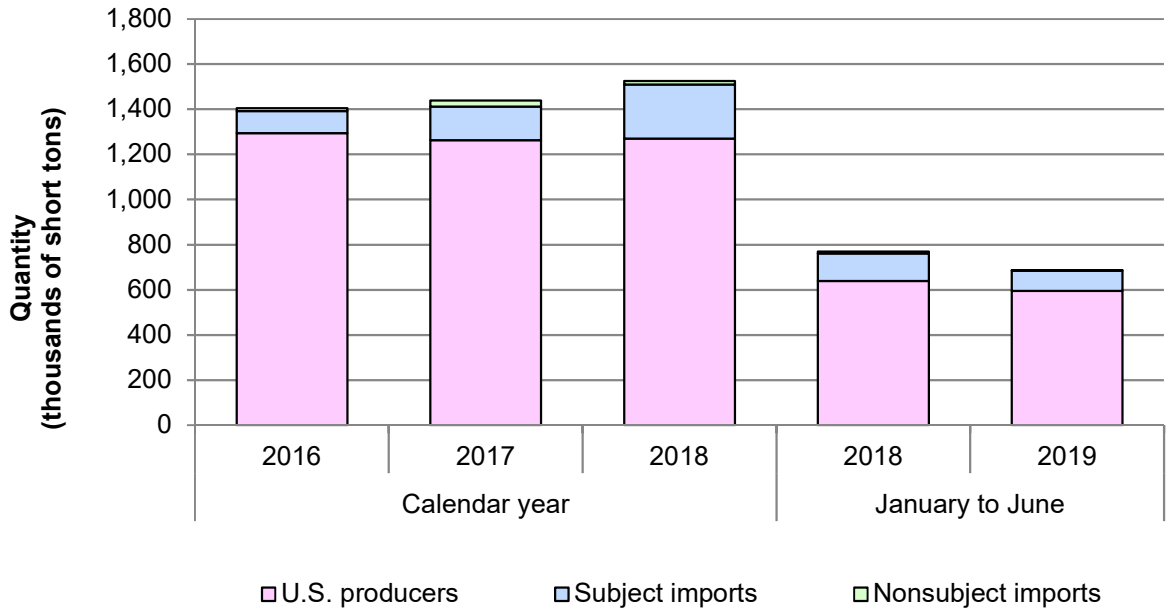
Table IV-8
Acetone: Apparent U.S. consumption, 2016-18, January to June 2018, and January to June 2019

Item	Calendar year			January to June	
	2016	2017	2018	2018	2019
	Quantity (short tons)				
U.S. producers' U.S. shipments	1,294,400	1,263,434	1,270,187	639,311	594,979
U.S. imports from.--					
Belgium	33,670	49,626	69,176	31,959	16,553
Korea	25,944	55,688	99,334	53,943	34,543
Singapore	2,761	4,403	13,546	8,306	7,862
South Africa	28,601	26,761	30,000	15,424	13,493
Spain	6,834	11,308	27,431	12,595	16,344
Subject sources	97,811	147,786	239,487	122,226	88,795
Nonsubject sources	12,236	28,036	14,875	8,094	3,058
All import sources	110,047	175,822	254,362	130,319	91,853
Apparent U.S. consumption	1,404,447	1,439,256	1,524,549	769,630	686,832
	Value (1,000 dollars)				
U.S. producers' U.S. shipments	724,399	950,056	1,011,047	494,845	331,496
U.S. imports from.--					
Belgium	17,197	35,249	56,832	24,745	10,108
Korea	13,992	40,815	67,820	40,050	18,904
Singapore	1,669	3,057	9,590	6,518	3,872
South Africa	14,675	19,414	24,032	12,820	7,984
Spain	3,319	7,762	18,576	8,798	7,817
Subject sources	50,853	106,297	176,850	92,932	48,684
Nonsubject sources	8,847	21,969	11,075	5,921	2,048
All import sources	59,700	128,266	187,925	98,853	50,733
Apparent U.S. consumption	784,099	1,078,322	1,198,972	593,698	382,229

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

Source: Compiled from data submitted in response to Commission questionnaires and official U.S. import statistics using HTS statistical reporting numbers 2914.11.1000 and 2914.11.5000, accessed September 4, 2019.

Figure IV-6
Acetone: Apparent U.S. consumption, 2016-18, January to June 2018 and January to June 2019



Source: Compiled from data submitted in response to Commission questionnaires from Census import data under HTS numbers 2914.11.1000 and 2914.11.5000.

U.S. market shares

U.S. market share data are presented in table IV-9. These data show that U.S. producers' market share, based on quantity, decreased by 8.8 percentage points from 2016 to 2018. U.S. producer's market share based on value, decreased by 8.1 percentage points from 2016 to 2018. During this period, the market share based on quantity of imports of acetone from subject countries increased by 8.7 percentage points. Similarly, subject countries market share based on value increased by 8.3 percentage points from 2016 to 2018. From 2016 to 2018, the market share based on quantity and value for nonsubject sources increased by 0.1 and decreased by 0.2 percentage points, respectively.

U.S. producers' market share was higher in interim 2019 than in interim 2018, while the market share of other sources, except Singapore and Spain, were lower.

Table IV-9
Acetone: U.S. consumption and market shares, 2016-18, January to June 2018, and January to June 2019

Item	Calendar year			January to June	
	2016	2017	2018	2018	2019
	Quantity (short tons)				
Apparent U.S. consumption	1,404,447	1,439,256	1,524,549	769,630	686,832
	Share of quantity (percent)				
U.S. producers' U.S. shipments	92.2	87.8	83.3	83.1	86.6
U.S. imports from.--					
Belgium	2.4	3.4	4.5	4.2	2.4
Korea	1.8	3.9	6.5	7.0	5.0
Singapore	0.2	0.3	0.9	1.1	1.1
South Africa	2.0	1.9	2.0	2.0	2.0
Spain	0.5	0.8	1.8	1.6	2.4
Subject sources	7.0	10.3	15.7	15.9	12.9
Nonsubject sources	0.9	1.9	1.0	1.1	0.4
All import sources	7.8	12.2	16.7	16.9	13.4
	Value (1,000 dollars)				
Apparent U.S. consumption	784,099	1,078,322	1,198,972	593,698	382,229
	Share of value (percent)				
U.S. producers' U.S. shipments	92.4	88.1	84.3	83.3	86.7
U.S. imports from.--					
Belgium	2.2	3.3	4.7	4.2	2.6
Korea	1.8	3.8	5.7	6.7	4.9
Singapore	0.2	0.3	0.8	1.1	1.0
South Africa	1.9	1.8	2.0	2.2	2.1
Spain	0.4	0.7	1.5	1.5	2.0
Subject sources	6.5	9.9	14.8	15.7	12.7
Nonsubject sources	1.1	2.0	0.9	1.0	0.5
All import sources	7.6	11.9	15.7	16.7	13.3

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

Source: Compiled from data submitted in response to Commission questionnaires from official U.S. import statistics using HTS statistical reporting numbers 2914.11.1000 and 2914.11.5000, accessed September 4, 2019.

Part V: Pricing data

Factors affecting prices

Raw material costs

During 2016-18, U.S. producers' raw materials' share of the cost of goods sold increased from *** percent to *** percent. During January-June 2018 and January-June 2019, the shares were *** percent and *** percent, respectively. Cumene, which is formed from benzene and propylene, is the main input in the vast majority of acetone production in the United States.[1] Seven responding U.S. producers reported purchasing cumene as an input to their acetone production, and three of these U.S. producers (***) also reported producing cumene.[2]

The cumene peroxidation process produces acetone, as well as another chemical, phenol. Benchmark prices of acetone are based on the contained propylene, whereas benchmark prices of phenol are based on the contained benzene.[3] Refinery grade propylene ("RGP") is the basis for acetone benchmark prices.[4] *** stated that acetone prices are targeted to have a certain margin range over raw material costs. As can be seen in figure V-1, RGP and cumene prices experienced large fluctuations over the period of investigation but trended upwards during 2016, 2017, and most of 2018, before declining in the fourth quarter of 2018 and the first quarter of 2019. RGP price increases in 2018 were driven by propylene production issues, but prices have come down recently as propylene production facilities have come back online.[5]

As shown in figure V-2, phenol and benzene prices increased, with some fluctuations, in 2016 and 2017, declined in 2018, and then recovered somewhat in the first half of 2019.

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[1] As discussed in Part I, acetone is also produced using other methods. The vast majority of U.S. production, including *** responding U.S. producers ***, uses the cumene peroxidation method. Approximately *** percent of U.S. acetone capacity is allocated to the IPA hydrogenation method and *** percent is allocated to other production methods. Petition, p. 7.

[2] ***. Altivia stated that its purchase price for cumene varies monthly based upon the price of benzene and RGP. Hearing transcript, p. 113 (Hayes).

[3] Petition, pp. 16-17.

[4] Conference transcript, p. 34 (Duhe).

[5] Conference transcript, p. 81 (Duhe).

Figure V-1
Raw materials: Prices for RGP and cumene, monthly, January 2016-June 2019

* * * * * * *

Figure V-2
Phenol and benzene: Prices for phenol and benzene, monthly, January 2016-June 2019

* * * * * * *

Two U.S. producers reported that acetone raw material prices have increased since January 1, 2016, and four reported that they have fluctuated. *** reported that increased raw material costs combined with increased low-priced imports have led customers to place more spot sales orders instead of entering into contracts. *** reported a steady increase in propylene costs from 2016 to 2018, and that propylene prices fell back to 2017 levels in the fourth quarter of 2018 and in 2019. *** reported that acetone prices fluctuate based on RGP prices, and that in 2018, acetone prices were at a peak due to high U.S. RGP prices.

Seven importers reported fluctuating raw material prices, five reported decreases, two reported increases, and one reported no change. Many importers noted the impact of RGP prices on acetone prices. *** stated that the Large Buyer Price ("LBP") - a metric for measuring acetone prices discussed later in this section - is a function of RGP, and that the distribution and solvent markets for acetone follows the LBP trend. It added that the acetone market does not have much of an effect on RGP prices because only a small portion of RGP goes to produce cumene (and then acetone). *** stated that RGP prices fluctuate based on supply/demand dynamics, and ***. *** stated that RGP prices are currently very low, but that they were extremely high during 2016-18, which put U.S. producers at a cost disadvantage. *** stated that the published RGP monthly price, an average of reported spot transactions, increased in 2018.[6] *** reported decreasing benzene and propylene prices in 2019 because of oversupply and high inventory. *** stated that propylene prices have fluctuated nearly 100 percent from the low to the high over the last 3 years. *** stated that benzene prices increased greatly in 2017, but have decreased since early 2018 to below the early 2016 levels. It further stated that U.S. RGP prices experienced large fluctuations, but increased overall from 2016 to the third quarter of 2018, becoming more expensive than the rest of the world, but have since returned to 2016 levels.

Most purchasers (24 of 33) reported that they were familiar with raw material prices for acetone. Fourteen firms reported that raw material prices had affected their negotiations or contracts to purchase acetone. Purchasers stated that acetone prices are correlated with RGP prices and that RGP prices affect acetone price negotiations. *** stated that acetone prices have generally changed at the same rate as RGP prices, although the spread between RGP and

[6] *** stated that in 2018, a large volume of low-priced RGP transactions were not included in the published RGP price, causing a large increase in the published RGP price. It explained that, in 2018, about 40 percent of RGP purchases were made by contract by a large buyer that had previously made spot purchases. Since contract purchases are not included in the published RGP price, this large buyer's low-priced transactions were not included in the RGP benchmark price in 2018.

the LBP can decrease when acetone inventories increase. It added that, in 2017 and 2018, U.S. producers pushed to increase the price spread between LBP and RGP, with some producers stating that they needed to increase their profit margins on acetone to make up for lost profits on phenol. *** stated that the U.S. LBP for acetone has been much higher than international acetone prices, especially in 2018, due to high U.S. RGP prices.

Thirteen purchasers reported that phenol prices had affected their negotiations or contracts to purchase acetone. *** stated that producers operate their units based on the total margin from benzene and propylene, *** stated that phenol prices affect the overall price, and *** stated that acetone value influences phenol prices. ***, a purchaser of South African acetone, stated that acetone pricing is driven by U.S. producers and has been negatively affected by phenol production, and that its customers have pressured it to lower pricing to maintain their contracts. *** stated that strong phenol prices result in lower acetone prices. *** stated that U.S. producers may not have a plan for the acetone by-product when they increase phenol production. *** stated that the price of acetone compared to RGP increased in 2016 and 2017 when U.S. producers cut production because of low phenol prices, and that when phenol became globally short in 2018 and 2019, U.S. producers increased production, resulting in excess acetone, decreasing the spread of RGP, and resulting in larger discounts off the LBP. *** stated that increased availability of acetone resulting from strong phenol demand resulted in lower acetone prices, and that when phenol demand is strong and prices/profits are high, U.S. producers will accept lower prices for acetone to reduce acetone inventory levels. It added that in 2018 and 2019, U.S. producers drastically reduced prices on acetone barges in the Gulf region.

Transportation costs to the U.S. market

Transportation costs for acetone shipped from subject countries to the United States averaged 8.5 percent during 2018. These estimates were derived from official import data and represent the transportation and other charges on imports.[7]

U.S. inland transportation costs

Four of 7 responding U.S. producers and 9 of 11 responding importers reported that they typically arrange transportation to their customers. Most U.S. producers reported that

[7] Such costs were 5.7 percent for Belgium, 10.7 percent for Korea, 13.2 percent for Singapore, 10.2 percent for South Africa, and 1.5 percent for Spain. The estimated transportation costs were obtained by subtracting the customs value from the c.i.f. value of the imports for 2018 and then dividing by the customs value based on the HTS subheadings 2914.11.1000 and 2914.11.5000.

their U.S. inland transportation costs ranged from 2 to 5 percent, although *** reported costs of *** percent. Importers reported more varied costs, with two firms (***) reporting 3 percent or less, one (***) reporting 6 percent, one (***) reporting 10 percent, and one (***) reporting 13 percent.

Four of six responding producers (***) and 5 of 10 importers (***) reported that they generally recover transportation costs through additives to the acetone price (known as "prepaid and add").

Pricing practices

Pricing methods

Prices for most acetone sales in the U.S. market, both contract sales and spot sales, are based on a negotiated discount off the LBP, a published index.[8] For acetone contracts, the discount rate from the LBP is typically negotiated annually.[9] Another method of setting prices starts with the price of RGP plus adjustments for the amount of acetone produced, conversion costs, and profit.[10] Industry publications also publish other acetone pricing indices, such as a small buyer price, which are less commonly used to set acetone prices.[11] Small buyers typically purchase truckloads or smaller quantities compared to large buyers that typically purchase barge loads.[12]

The LBP is negotiated monthly by three purchasers that produce MMA (Dow, Lucite, and Evonik) and two U.S. producers of acetone (INEOS and Shell).[13] The LBP is not the actual price

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[8] ICIS publishes monthly contract and weekly spot prices for acetone. For contract prices, these include an MMA barge price, U.S. Gulf truck price, and Midwest truck price. Spot prices are for CFR Houston. ICIS Acetone Methodology, https://s3-eu-west-1.amazonaws.com/cjp-rbi-icis-compliance/wp-content/uploads/2018/06/29134207/Acetone-Methodology-29-June-2018.pdf, June 29, 2018.

[9] Hearing transcript, pp. 62-63 (Sanders, Duhe, Safar). AdvanSix stated that in 2018, some of its customers requested deeper discounts within the contracting period, and Altivia added that some of its customers broke contracts during this time period. Hearing transcript, pp. 64-68 (Sanders and Duhe).

[10] Petitioners' postconference brief, p. 18; petition, p. 21, footnote 52; hearing transcript, p. 34 (Sanders).

[11] Conference transcript, pp. 80-81 (Sanders, Duhe, Safar).

[12] Conference transcript, pp. 73 (Duhe).

[13] These parties begin separate discussions in the third week of the month and negotiate prices based on raw materials and market conditions, and then when a price is agreed upon, typically in the fourth week of the month, the large buyers each report a price to IHS and ICIS. Respondent INEOS' postconference brief, p. exhibit 1, p. 3. The three large buyers individually negotiate prices with the two producers, ***. Joint Respondents' posthearing brief, pp. 21-22 and exhibit 2.

paid by these purchasers, but a starting point for price negotiations.[14] RGP prices are a significant factor in the LBP negotiations but supply and demand conditions for acetone also play a role.[15] Petitioners stated that short-term spikes in RGP prices will typically be reflected in the LBP within a month of the RGP price increase.[16]

Petitioners stated that discounts off the LBP increased in 2018 and 2019 for both spot and contract sales.[17] All 7 responding U.S. producers and 4 of 9 importers indicated that the discount from published acetone prices had changed since January 1, 2016. U.S. producer *** stated that prior to 2016, "the price was negotiated as a discount from the large buyer. At that time, the spot prices were equal to, or slightly higher than, contract prices. Once the import acetone price dropped below MMA buyer discounts and below propylene cost, spot price negotiations changed to be based on meeting low import prices. This forced U.S. producers to significantly lower acetone spot prices in order to keep the acetone moving, resulting in significant financial losses but avoiding shutting down production." ***. ***. *** also reported that discounts have increased. *** stated that since January 1, 2016, its discounts to MMA customers have increased from an average of *** percent to *** percent. In contrast, *** stated that there has not been a significant change in discounts since 2016.

***. Respondent Lucite's postconference brief, p. 4. ***. Answers to Commissioner Questions, pp. 2-3.

[14] Hearing transcript, p. 34 (Sanders) and p. 46 (Duhe).

[15] Hearing transcript, pp. 33-34 (Sanders) and p. 47 (Duhe).

[16] Hearing transcript, p. 69 (Sanders).

[17] In addition, the "adder" over RGP has declined in 2018 and 2019. Hearing transcript, p. 47 (Duhe). ***. Petitioners' posthearing brief, exhibit 2, pp. 5-6, and exhibit 3, p. 3.

Among importers, *** stated that the discount from the LBP changes based on competition and on the phenol market. It stated that in 2017, when phenol production was higher, acetone discounts increased to move acetone and compete with spot pricing for acetone. It stated that U.S. producers introduced the discount LBP benchmark formulas for distribution sales, and although the benchmark does not follow supply/demand and thus is a faulty price benchmark, customers are accustomed to this method of price setting, which must be offered by suppliers to compete in the U.S. market. ***. *** stated that the LBP has been much higher than the global acetone price because of high U.S. RGP costs, and that in 2019, the discount from the LBP increased by 1 to 2 percent. *** stated that over the last 18 months, discounts have been higher than historical levels, ***. Dow stated that in 2018, a surplus of acetone in the U.S. market led to spot prices for acetone that were lower than Dow's contracted price for acetone.[18]

Purchasers were asked to describe factors that have influenced the spread between RGP and the LBP since January 1, 2016. *** reported that supply and demand balance are important factors, *** stated that supply and demand for acetone are the driving factors but that RGP cost plays a role, and *** stated that RGP and LBP do not represent the supply/demand value of acetone. *** stated that supply/demand of acetone has impacted LBP negotiations, with the supply side outweighing demand over the last 3 years. *** stated that if acetone is short in demand, prices may increase, leading to a greater spread between RGP and acetone pricing. *** stated that the LBP to RGP ratio has dramatically increased, benefiting domestic suppliers. *** stated that low acetone prices can result in a negative spread to RGP. *** stated that the spread between RGP and LBP changes based on the supply of acetone. *** stated that its agreements are based on the monthly change in the LBP price for acetone, but that in 2017, it had to reset its pricing to a lower base formula price because of competition from a large national distributor supported by a U.S. acetone producer. *** stated that large MMA buyers set the price and spread, and also benefit the most from low-priced imports. *** stated that in 2018, RGP became a more favorable index than the LBP index. *** stated that factors include RGP availability, refinery schedule maintenance, and supply/demand. *** stated that in a balanced market, the spread between acetone

[18] Hearing transcript, p. 168 (Knaub).

and RGP is 10 to 11 cents per pound but can increase to 15 cents per pound when acetone is "short" and decrease to 8 cents per pound when acetone is "long." *** reported that traditional price changes between LBP and RGP no longer apply. *** stated that historically acetone pricing has been tied to RGP prices even though most acetone is a by-product of phenol production and the cost is a combination of feedstock. It added that there is no contract price for RGP, which is traded by a relatively small number of firms, and that RGP pricing for acetone contracts uses an average of spot RGP trades in the previous 30 to 45 days.

It further explained that in early 2018, propylene producer Enterprise stopped reporting its pipeline RGP trades, and that RGP published prices were thus based on a few railcar trades, which artificially increased published RGP prices and caused an increase in the acetone LBP contract barge price. *** stated that acetone prices usually follow RGP prices, although there can be a spread between RGP prices and the LBP. It added that phenol profitability also affects acetone pricing since producers can tolerate lower prices on acetone that are a result of increased production of phenol. It stated that since early 2018, high phenol profits have made up for small (and at times, inverted) spreads between RPG and the LBP. *** stated that the LBP is negotiated between the major players based on RGP value and acetone supply/demand, and that the spread between RGP and LBP increased in 2016 and 2017, returning to previous levels at the end of 2018. It stated that most suppliers focus not just on the acetone margin but also on the phenol margin. *** stated that factors affecting U.S. RGP prices include supply, demand, crude cost, production capacity, and RGP derivative demand and return.

Figure V-3 presents published prices for the LBP, small buyer price ("SBP"), RGP, LBP less RGP, and LBP less contained RGP.[19] [20]

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[19] Since the LBP does not reflect the actual price paid by the large buyers, the gap between the published LBP and small buyer price is not reflective of actual prices paid. The small buyer price is reflective of actual market prices for these buyers since it is obtained from the publications calling market participants and asking for transaction prices. Conference transcript, pp. 73-74 (Duhe, Szamosszegi, Anderson).

[20] It takes 0.78 of a pound of RGP to produce one pound of acetone, and therefore the LBP less contained RGP is calculated using LBP – (RGP * 0.78). Petitioners stated that because firms do not actually pay the LBP, a better measure of the spread would be to subtract RGP*0.78 from the actual sales price. Email from Andrew Szamosszegi, consultant to petitioners, October 24, 2019.

Respondents stated that calculating the spread using the "un-discounted" LBP and the contained RGP, risks potentially overstating the margin, and does not take into account fluctuations in the discounted LBP over time as the discount varies from producer to producer and from customer to customer. Therefore, the spread between the LBP and the "simple" RGP price would be more "widely

Figure V-3
Acetone: LBP, SBP, RGP, LBP less RGP, and LBP less contained RGP, monthly, January 2016-June 2019

* * * * * * *

U.S. producers and importers reported using both transaction-by-transaction negotiations and contracts to set acetone prices (table V-1). U.S. producers and importers reported selling most of their acetone under annual and long-term contracts (table V-2). U.S. producers' spot sales' share increased in 2018 and January-June 2019, although the share remained under 20 percent of U.S. producers' total sales in the first half of 2019.[21]

applicable considering the data that are currently on the record." Email from Jim Dougan, consultant to respondents, October 25, 2019.

[21] ***. Petitioners' posthearing brief, exhibit 3. ***.

Table V-1
Acetone: U.S. producers' and importers' reported price setting methods, by number of responding firms[1]

Method	U.S. producers	Importers
Transaction-by-transaction	5	11
Contract	5	5
Set price list	---	---
Benchmark[2]	3	3
Other	2	1
Responding firms	7	11

[1] 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.
[2] Published benchmark/price (e.g. large buyer price, RGP).

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

All seven responding U.S. producers reported that long-term contracts accounted for the majority of their sales in 2018, ranging from 53 to 100 percent of their sales in that year. Among importers, one firm (***) reported that *** of its sales were on a long-term contract basis in 2018, three firms (***) reported mainly annual-contract sales, and seven firms reported mainly spot or short-term contract sales.[22]

Five U.S. producers reported that their long-term contracts averaged two years in duration and one producer (***) reported a duration of *** years. Contract prices for acetone vary based on an index of the LBP or RGP pricing, and specify minimum and maximum volumes.[23] ***.[24]

[22] Among importers that do not resell acetone, ***.
[23] Hearing transcript, p. 33 (Sanders).
[24] Joint Respondents' posthearing brief, exhibit 2.

Table V-2
Acetone: U.S. producers' and importers' shares of U.S. commercial shipments by type of sale, 2016-2018, and January-June 2019

Item	Calendar year			January to June
	2016	2017	2018	2019
	Quantity (short tons)			
U.S. producers: Long-term contracts	***	***	***	***
Annual contracts	***	***	***	***
Short-term contracts	***	***	***	***
Spot sales	***	***	***	***
Total	***	***	***	***
	Share of quantity (percent)			
U.S. producers: Long-term contracts	***	***	***	***
Annual contracts	***	***	***	***
Short-term contracts	***	***	***	***
Spot sales	***	***	***	***
Total	***	***	***	***
	Quantity (short tons)			
Importers: Long-term contracts	***	***	***	***
Annual contracts	***	***	***	***
Short-term contracts	***	***	***	***
Spot sales	***	***	***	***
Total	***	***	***	***
	Share of quantity (percent)			
Importers: Long-term contracts	***	***	***	***
Annual contracts	***	***	***	***
Short-term contracts	***	***	***	***
Spot sales	***	***	***	***
Total	***	***	***	***

Note.--Because of rounding, figures may not add to the totals shown. Firms reported data in percentages, which were then applied to firms' reported U.S. shipments in each period to calculate the volumes.

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

Five importers reported selling acetone through annual or longer-term contracts. Two importers (***) reported long-term contracts averaging two years in duration. Contract negotiations typically occur annually, during the fourth quarter of the year, and include negotiations of the percent discount from the LBP.[25] INEOS stated that acetone from any source can be delivered under the same contract at the same price to its customers, and

[25] Conference transcript, pp. 60-62 (Anderson, Duhe).

that it sells its U.S.-produced acetone and acetone imported from its related firm in Belgium at the same price.[26]

Sixteen purchasers reported that they enter into supply agreements for acetone annually, two quarterly, three monthly, two weekly, and one daily. Eleven firms indicated other frequencies, with six of these firms reporting agreements that last longer than one year.

Seven of 33 responding purchasers reported that their purchasing frequency had changed since 2016. Reasons for changes included: scheduling changes related to production and customer plant shutdowns (***); being "saddled with high priced inventory that we cannot resell due to low-cost imports eroding the market pricing" (***); being a new purchaser of acetone (***); ending of a 3-year arrangement (***); and a change from mostly contract purchases to spot purchases because U.S. producers would not renew contracts (***). Two firms reported fluctuations to their purchase frequencies depending on demand (***) or contract versus spot purchases depending on acetone supply (***).

Purchasers typically source acetone from multiple suppliers. Purchasers reported, on average, contacting a minimum of two suppliers and a maximum of five suppliers before making a purchase. The largest purchasers, ***, reported contacting *** purchasers.

Sales terms and discounts

Most U.S. producers typically quote prices on an f.o.b. basis, while most importers typically quote prices on a delivered basis. Five U.S. producers reported using quantity and/or total volume discounts. Eight importers reported no discount policy and three importers reported volume or other discounts.

In describing discounts, U.S. producer *** reported that its prices are set monthly based on a formula linked to the LBP price with a one month lag. *** stated that its prices are based on a discount to the LBP index. *** reported that its pricing depends on customer size, competitive dynamics, and import prices. *** stated that its annual contracts are based on a price formula using an index and that its spot sales are negotiated monthly based on market forces. It added that subject import prices can affect the index, the discount, and the spot market price. *** stated that it negotiates prices annually. *** stated that discounts/multipliers/adders are negotiated at the time a contract is agreed to based on

[26] Conference transcript, p. 134 (Foster).

market conditions, and that the frequency of change to the discount (if any) is also negotiated at that time. It added that its discounts differ by sector, customer, and contract term.

Among importers, *** stated that its prices to contract customers are based on a discount to LBP prices. *** stated that some of its contracts are based on LBP, with a discount negotiated based on the acetone supply/demand balance every year. *** stated that competitive offers dictate the percent discount it applies to the LBP benchmark. *** stated that it determines the price by negotiation with its customers.

Price leadership

Nineteen purchasers listed one or more price leaders for acetone in the U.S. market. Firms listed included U.S. producers AdvanSix (named by 13 purchasers), INEOS (11), Shell (8), Altivia (5), and Olin (4), and South African producer Sasol (2). The three MMA producers (Dow, Evonik, and Lucite) that are part of the LBP negotiations (along with U.S. producers INEOS and Shell) were also named as price leaders by some purchasers. In addition, one purchaser stated that importers are leading the pricing downward.

In describing how these firms led price changes, *** stated that AdvanSix is the price leader in the Northeastern region and that Korean imports lead prices in the Gulf of Mexico/Houston area. *** stated that AdvanSix has consistent low pricing and strong delivery. *** stated that AdvanSix is the most aggressive and "poor" market steward in the United States, that Sasol often follows AdvanSix pricing downwards, and that AdvanSix and Sasol engage in price wars. It added that in 2018 Olin's epoxy resins business (which uses phenol) became very strong, that Olin raised its operating rates to produce more phenol, and to clear the acetone, Olin sold it at prices 25 percent below the going market rate. *** stated that AdvanSix and Altivia have been "aggressive" players in the spot market. Three purchasers (***) stated that INEOS leads the market with price increases, including having the highest pricing in the U.S. market and being first to initiate price increases. *** stated that AdvanSix and Sasol are the first to lower prices, and that when these suppliers do announce an increase, they often delay the increase to see if the market will hold. *** stated that in October 2018 Altivia led the market by decreasing acetone prices, and that in June/July 2019 Altivia led the market by increasing distribution/truck pricing. *** stated that AdvanSix, INEOS, Olin, and Shell have increased prices when raw material prices increase and when acetone demand begins to outpace supply.

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 acetone products shipped to unrelated U.S. customers during January 2016-June 2019.

Product 1.--Standard grade acetone, sold in bulk to distributors, spot/short-term contract sales.

Product 2.--Standard grade acetone, sold in bulk to distributors, annual/long-term contract sales.

Product 3.--Standard grade acetone, sold in bulk to end users, spot/short-term contract sales.

Product 4.--Standard grade acetone, sold in bulk to end users, annual/long-term contract sales.

Seven U.S. producers and eight importers provided usable pricing data for sales of the requested products, although not all firms reported pricing for all products for all quarters.[27] [28] Pricing data reported by these firms accounted for 99 percent of U.S. producers' reported commercial shipments and at least 99 percent of reported commercial shipments of imports from each subject country in 2018. Price data also accounted for 70 percent or more of reported U.S. shipments from each subject country in 2018, with the exception of ***

[27] Useable price data were reported by U.S. producers *** and importers ***. U.S. producer ***. Importers *** did not report price data since they do not sell acetone but rather use it for internal production of downstream chemicals. Importer *** did not report pricing data since ***.

*** reported that ***.

[28] 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.

***. Price data for products 1-4 are presented in tables V-3 to V-6 and figures V-4 to V-7.

Table V-3
Acetone: Weighted-average f.o.b. prices and quantities of domestic and imported product 1[1] and margins of underselling/(overselling), by quarter, January 2016-June 2019

Period	United States		Belgium			Korea		
	Price (dollars per short ton)	Quantity (short tons)	Price (dollars per short ton)	Quantity (short tons)	Margin (percent)	Price (dollars per short ton)	Quantity (short tons)	Margin (percent)
2016: Jan.-Mar.	***	***	***	***	***	***	***	***
Apr.-Jun.	***	***	***	***	***	***	***	***
Jul.-Sep.	***	***	***	***	***	***	***	***
Oct.-Dec.	***	***	***	***	***	***	***	***
2017: Jan.-Mar.	***	***	***	***	***	***	***	***
Apr.-Jun.	***	***	***	***	***	***	***	***
Jul.-Sep.	***	***	***	***	***	***	***	***
Oct.-Dec.	***	***	***	***	***	***	***	***
2018: Jan.-Mar.	***	***	***	***	***	***	***	***
Apr.-Jun.	***	***	***	***	***	***	***	***
Jul.-Sep.	***	***	***	***	***	***	***	***
Oct.-Dec.	***	***	***	***	***	***	***	***
2019: Jan.-Mar.	***	***	***	***	***	***	***	***
Apr.-Jun.	***	***	***	***	***	***	***	***

Period	Singapore			South Africa			Spain		
	Price (dollars per short ton)	Quantity (short tons)	Margin (percent)	Price (dollars per short ton)	Quantity (short tons)	Margin (percent)	Price (dollars per short ton)	Quantity (short tons)	Margin (percent)
2016: Jan.-Mar.	***	***	***	***	***	***	***	***	***
Apr.-Jun.	***	***	***	***	***	***	***	***	***
Jul.-Sep.	***	***	***	***	***	***	***	***	***
Oct.-Dec.	***	***	***	***	***	***	***	***	***
2017: Jan.-Mar.	***	***	***	***	***	***	***	***	***
Apr.-Jun.	***	***	***	***	***	***	***	***	***
Jul.-Sep.	***	***	***	***	***	***	***	***	***
Oct.-Dec.	***	***	***	***	***	***	***	***	***
2018: Jan.-Mar.	***	***	***	***	***	***	***	***	***
Apr.-Jun.	***	***	***	***	***	***	***	***	***
Jul.-Sep.	***	***	***	***	***	***	***	***	***
Oct.-Dec.	***	***	***	***	***	***	***	***	***
2019: Jan.-Mar.	***	***	***	***	***	***	***	***	***
Apr.-Jun.	***	***	***	***	***	***	***	***	***

[1] Product 1: Standard grade acetone, sold in bulk to distributors, spot/short-term contract sales.

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

Table V-4
Acetone: Weighted-average f.o.b. prices and quantities of domestic and imported product 2[1] and margins of underselling/(overselling), by quarter, January 2016-June 2019

Period	United States		Belgium			Korea		
	Price (dollars per short ton)	Quantity (short tons)	Price (dollars per short ton)	Quantity (short tons)	Margin (percent)	Price (dollars per short ton)	Quantity (short tons)	Margin (percent)
2016: Jan.-Mar.	***	***	***	***	***	***	***	***
Apr.-Jun.	***	***	***	***	***	***	***	***
Jul.-Sep.	***	***	***	***	***	***	***	***
Oct.-Dec.	***	***	***	***	***	***	***	***
2017: Jan.-Mar.	***	***	***	***	***	***	***	***
Apr.-Jun.	***	***	***	***	***	***	***	***
Jul.-Sep.	***	***	***	***	***	***	***	***
Oct.-Dec.	***	***	***	***	***	***	***	***
2018: Jan.-Mar.	***	***	***	***	***	***	***	***
Apr.-Jun.	***	***	***	***	***	***	***	***
Jul.-Sep.	***	***	***	***	***	***	***	***
Oct.-Dec.	***	***	***	***	***	***	***	***
2019: Jan.-Mar.	***	***	***	***	***	***	***	***
Apr.-Jun.	***	***	***	***	***	***	***	***

Period	Singapore			South Africa			Spain		
	Price (dollars per short ton)	Quantity (short tons)	Margin (percent)	Price (dollars per short ton)	Quantity (short tons)	Margin (percent)	Price (dollars per short ton)	Quantity (short tons)	Margin (percent)
2016: Jan.-Mar.	***	***	***	***	***	***	***	***	***
Apr.-Jun.	***	***	***	***	***	***	***	***	***
Jul.-Sep.	***	***	***	***	***	***	***	***	***
Oct.-Dec.	***	***	***	***	***	***	***	***	***
2017: Jan.-Mar.	***	***	***	***	***	***	***	***	***
Apr.-Jun.	***	***	***	***	***	***	***	***	***
Jul.-Sep.	***	***	***	***	***	***	***	***	***
Oct.-Dec.	***	***	***	***	***	***	***	***	***
2018: Jan.-Mar.	***	***	***	***	***	***	***	***	***
Apr.-Jun.	***	***	***	***	***	***	***	***	***
Jul.-Sep.	***	***	***	***	***	***	***	***	***
Oct.-Dec.	***	***	***	***	***	***	***	***	***
2019: Jan.-Mar.	***	***	***	***	***	***	***	***	***
Apr.-Jun.	***	***	***	***	***	***	***	***	***

[1] Product 2: Standard grade acetone, sold in bulk to distributors, annual/long-term contract sales.

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

Table V-5
Acetone: Weighted-average f.o.b. prices and quantities of domestic and imported product 3[1] and margins of underselling/(overselling), by quarter, January 2016-June 2019

Period	United States		Belgium			Korea		
	Price (dollars per short ton)	Quantity (short tons)	Price (dollars per short ton)	Quantity (short tons)	Margin (percent)	Price (dollars per short ton)	Quantity (short tons)	Margin (percent)
2016: Jan.-Mar.	***	***	***	***	***	***	***	***
Apr.-Jun.	***	***	***	***	***	***	***	***
Jul.-Sep.	***	***	***	***	***	***	***	***
Oct.-Dec.	***	***	***	***	***	***	***	***
2017: Jan.-Mar.	***	***	***	***	***	***	***	***
Apr.-Jun.	***	***	***	***	***	***	***	***
Jul.-Sep.	***	***	***	***	***	***	***	***
Oct.-Dec.	***	***	***	***	***	***	***	***
2018: Jan.-Mar.	***	***	***	***	***	***	***	***
Apr.-Jun.	***	***	***	***	***	***	***	***
Jul.-Sep.	***	***	***	***	***	***	***	***
Oct.-Dec.	***	***	***	***	***	***	***	***
2019: Jan.-Mar.	***	***	***	***	***	***	***	***
Apr.-Jun.	***	***	***	***	***	***	***	***

Period	Singapore			South Africa			Spain		
	Price (dollars per short ton)	Quantity (short tons)	Margin (percent)	Price (dollars per short ton)	Quantity (short tons)	Margin (percent)	Price (dollars per short ton)	Quantity (short tons)	Margin (percent)
2016: Jan.-Mar.	***	***	***	***	***	***	***	***	***
Apr.-Jun.	***	***	***	***	***	***	***	***	***
Jul.-Sep.	***	***	***	***	***	***	***	***	***
Oct.-Dec.	***	***	***	***	***	***	***	***	***
2017: Jan.-Mar.	***	***	***	***	***	***	***	***	***
Apr.-Jun.	***	***	***	***	***	***	***	***	***
Jul.-Sep.	***	***	***	***	***	***	***	***	***
Oct.-Dec.	***	***	***	***	***	***	***	***	***
2018: Jan.-Mar.	***	***	***	***	***	***	***	***	***
Apr.-Jun.	***	***	***	***	***	***	***	***	***
Jul.-Sep.	***	***	***	***	***	***	***	***	***
Oct.-Dec.	***	***	***	***	***	***	***	***	***
2019: Jan.-Mar.	***	***	***	***	***	***	***	***	***
Apr.-Jun.	***	***	***	***	***	***	***	***	***

[1] Product 3: Standard grade acetone, sold in bulk to end users, spot/short-term contract sales.

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

Table V-6
Acetone: Weighted-average f.o.b. prices and quantities of domestic and imported product 4[1] and margins of underselling/(overselling), by quarter, January 2016-June 2019

Period	United States		Belgium			Korea		
	Price (dollars per short ton)	Quantity (short tons)	Price (dollars per short ton)	Quantity (short tons)	Margin (percent)	Price (dollars per short ton)	Quantity (short tons)	Margin (percent)
2016:								
Jan.-Mar.	466	191,776	***	***	***	***	***	***
Apr.-Jun.	502	206,685	***	***	***	***	***	***
Jul.-Sep.	583	211,028	***	***	***	***	***	***
Oct.-Dec.	608	167,913	***	***	***	***	***	***
2017:								
Jan.-Mar.	764	212,152	***	***	***	***	***	***
Apr.-Jun.	736	199,330	***	***	***	***	***	***
Jul.-Sep.	704	188,514	***	***	***	***	***	***
Oct.-Dec.	834	197,721	***	***	***	***	***	***
2018:								
Jan.-Mar.	776	194,369	***	***	***	***	***	***
Apr.-Jun.	805	202,486	***	***	***	***	***	***
Jul.-Sep.	896	200,561	***	***	***	***	***	***
Oct.-Dec.	753	173,928	***	***	***	***	***	***
2019:								
Jan.-Mar.	568	173,741	***	***	***	***	***	***
Apr.-Jun.	569	164,426	***	***	***	***	***	***

Period	Singapore			South Africa			Spain		
	Price (dollars per short ton)	Quantity (short tons)	Margin (percent)	Price (dollars per short ton)	Quantity (short tons)	Margin (percent)	Price (dollars per short ton)	Quantity (short tons)	Margin (percent)
2016:									
Jan.-Mar.	***	***	***	***	***	***	***	***	***
Apr.-Jun.	***	***	***	***	***	***	***	***	***
Jul.-Sep.	***	***	***	***	***	***	***	***	***
Oct.-Dec.	***	***	***	***	***	***	***	***	***
2017:									
Jan.-Mar.	***	***	***	***	***	***	***	***	***
Apr.-Jun.	***	***	***	***	***	***	***	***	***
Jul.-Sep.	***	***	***	***	***	***	***	***	***
Oct.-Dec.	***	***	***	***	***	***	***	***	***
2018:									
Jan.-Mar.	***	***	***	***	***	***	***	***	***
Apr.-Jun.	***	***	***	***	***	***	***	***	***
Jul.-Sep.	***	***	***	***	***	***	***	***	***
Oct.-Dec.	***	***	***	***	***	***	***	***	***
2019:									
Jan.-Mar.	***	***	***	***	***	***	***	***	***
Apr.-Jun.	***	***	***	***	***	***	***	***	***

[1] Product 4: Standard grade acetone, sold in bulk to end users, annual/long-term contract sales.

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

Figure V-4
Acetone: Weighted-average prices and quantities of domestic and imported product 1, by quarter, January 2016-June 2019

* * * * * * *

Figure V-5
Acetone: Weighted-average prices and quantities of domestic and imported product 2, by quarter, January 2016-June 2019

* * * * * * *

Figure V-6
Acetone: Weighted-average prices and quantities of domestic and imported product 3, by quarter, January 2016-June 2019

* * * * * * *

Figure V-7
Acetone: Weighted-average prices and quantities of domestic and imported product 4, by quarter, January 2016-June 2019

* * * * * * *

Price trends

U.S. producers' prices generally increased in 2016 and 2017 (except for a decline in third quarter 2017), and then decreased in January-March 2018. In the second quarter of 2018, U.S. producers' spot and contract prices diverged, with spot/short-term contract prices (products 1 and 3) continuing to decline and annual/long-term contract prices increasing. The pricing products generally showed price increases in third quarter 2018 (except for product 1) and decreases in the fourth quarter of 2018 into the first quarter of 2019. Prices of products 1, 2, and 3 continued to decline in the second quarter of 2019, while product 4 prices were almost the same in the second quarter as they were in the first quarter of 2019. Most of U.S. producers' pricing data (68 percent) were reported as product 4 (annual/long term contract sales to end users), as were most data for Belgium (*** percent) and a majority for South Africa (*** percent). However, product 4 represented a smaller share of pricing product volumes for Korea (*** percent), Singapore (*** percent), and Spain (*** percent).

Table V-7 summarizes the price trends, by country and by product. As shown in the table, during January 2016-June 2019, domestic price decreases for products 1 and 3 (spot/short-term contract sales) were 13.8 percent and 8.8 percent, respectively, while prices of products 2 and 4 (annual/long-term contract sales) increased by 2.8 percent and 22.1 percent, respectively. Indexed price data compares how prices of products 1-4 trended for U.S. producers and for subject importers (figure V-8).

As discussed earlier, RGP pricing is a major factor in acetone pricing. Indices of combined prices for all four pricing products reported by U.S. producers and by subject importers are shown together with an index of RGP prices in figure V-9.[29] Combined U.S. prices for the four pricing products less contained RGP and combined import prices less contained RGP are shown in figure V-10. As shown in the figure, U.S. producer prices less contained RGP increased from *** per pound in first quarter 2016 to a period high of *** per pound in second quarter of 2017, and then declined to a period low of *** per pound during the second half of 2018 and first half of 2019.[30]

[29] Staff estimates that the correlation coefficients were 0.97 between U.S. producer prices and importer prices, 0.92 between U.S. producer prices and RGP prices, and 0.82 between importer prices and RGP prices.

[30] In figure V-10, pricing data were converted from short tons to pounds to compare with RGP pricing, which was reported in dollars per pound.

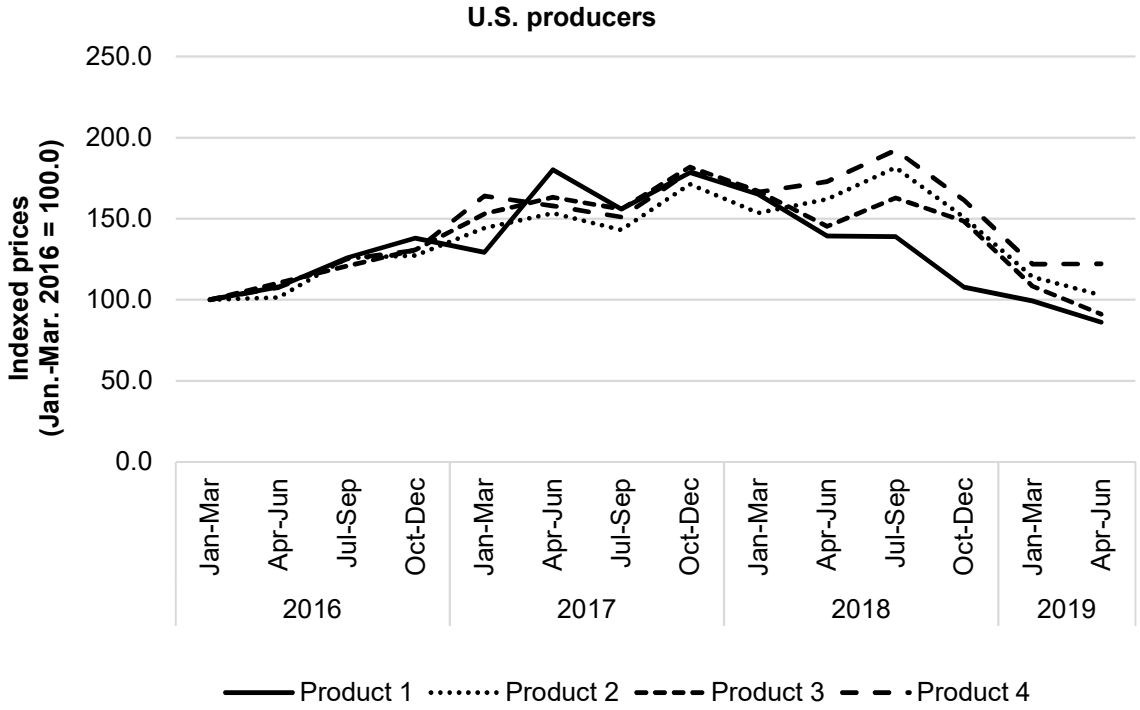
Table V-7
Acetone: Summary of weighted-average f.o.b. prices for products 1-4 from the United States and subject countries

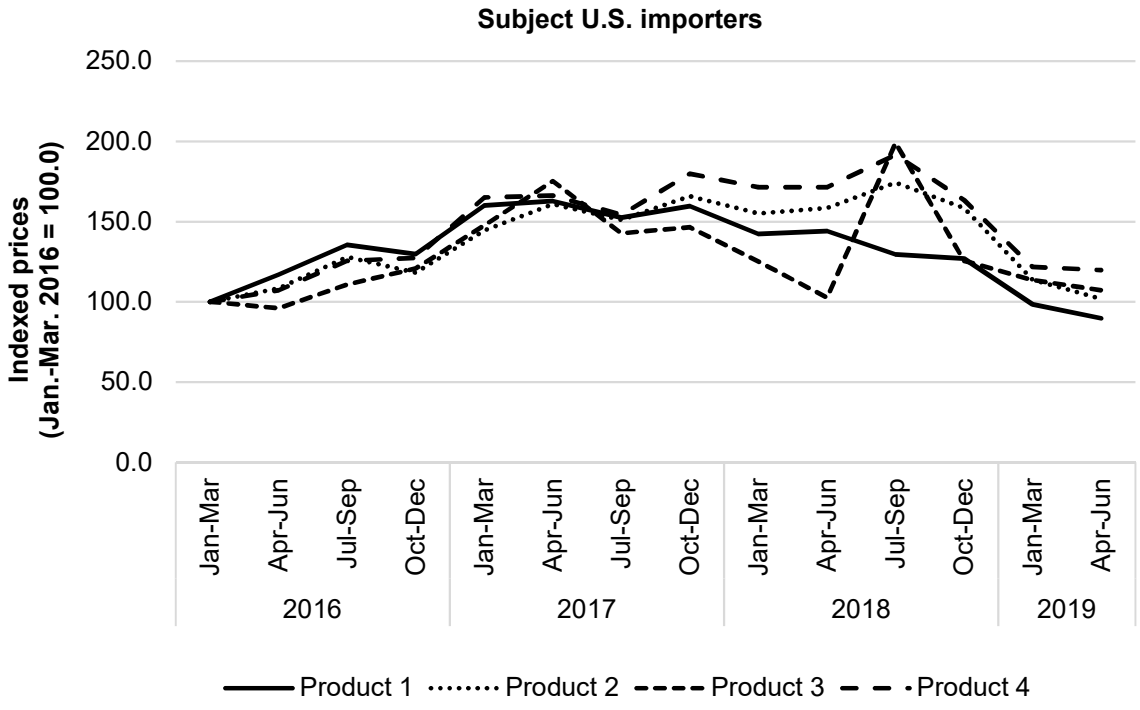
Item	Number of quarters	Low price (dollars per short ton)	High price (dollars per short ton)	Change in price over period[1] (percent)
Product 1:				
United States	14	***	***	(13.8)
Belgium	***	***	***	***
Korea	14	***	***	***
Singapore	***	***	***	***
South Africa	***	***	***	***
Spain	***	***	***	***
Product 2:				
United States	14	***	***	2.8
Belgium	***	***	***	***
Korea	14	***	***	***
Singapore	***	***	***	***
South Africa	***	***	***	***
Spain	***	***	***	***
Product 3:				
United States	14	***	***	(8.8)
Belgium	***	***	***	***
Korea	11	***	***	***
Singapore	***	***	***	***
South Africa	***	***	***	***
Spain	***	***	***	***
Product 4:				
United States	14	***	***	22.1
Belgium	***	***	***	***
Korea	11	***	***	***
Singapore	***	***	***	***
South Africa	***	***	***	***
Spain	***	***	***	***

[1] Percentage change from the first quarter in which data were available to the last quarter in which price data were available.

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

Figure V-8
Acetone: Indexed prices, January 2016-June 2019





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

Figure V-9
Acetone: Indexed aggregated U.S. producer and subject importer prices, and RGP prices, January 2016-June 2019

* * * * * * *

Figure V-10
Acetone: Aggregated U.S. producer and subject importer prices less contained RGP, January 2016-June 2019

* * * * * * *

Price comparisons

Table V-8 shows price comparisons by product, by subject country, and by time period. As shown in the table, prices for acetone imported from subject countries were below those for U.S.-produced product in 64 of 172 instances (215,557 short tons); margins of underselling ranged from 0.2 to 36.7 percent. In the remaining 108 instances (227,198 short tons), prices for acetone from subject countries were between 0.0[31] and 61.2 percent above prices for the domestic product. Underselling patterns varied by subject country, with Korea having more instances of underselling than overselling and a higher volume of underselling compared to overselling. Belgium, Singapore, South Africa, and Spain had more instances and higher volumes of overselling than underselling.

By pricing product, products 2 and 4 (acetone sold via annual or long-term contracts), showed more instances and a higher quantity of overselling than underselling. Product 3 (spot/short-term contract sales to end users) showed more instances and a higher quantity of underselling than overselling. Product 1 (spot/short-term contract sales to distributors) showed more instances of overselling but a higher quantity of underselling.

By year, there were more instances of overselling than of underselling during each calendar year of 2016, 2017, and 2018, as well as during the first half of 2019, and higher volumes of overselling in 2016 and 2017, but higher volumes of underselling in 2018 and interim 2019.

Lost sales and lost revenue

In the preliminary phase of the investigations, the Commission requested that U.S. producers of acetone report purchasers with which they experienced instances of lost sales or revenue due to competition from subject imports during 2016-2018. *** petitioning U.S. producers submitted lost sales and lost revenue ("LSLR") allegations, identifying 20 firms with which they lost sales or revenue (two consisting of lost sales allegations, four consisting of lost revenue allegations, and 23 consisting of both types of allegations).[32] Each subject country was identified in at least one allegation.

[31] Unrounded margin was 0.047 percent.

[32] Several of the firms were listed by more than one U.S. producer, hence the greater number of allegations than the number of firms.

Table V-8
Acetone: Instances of underselling/overselling and the range and average of margins, by country, January 2016-June 2019

Source	Underselling				
	Number of quarters	Quantity (short tons)	Average margin (percent)	Margin Range (percent)	
				Min	Max
Product 1	***	***	***	***	***
Product 2	***	***	***	***	***
Product 3	***	***	***	***	***
Product 4	***	***	***	***	***
Total, underselling	64	215,557	7.9	0.2	36.7
Belgium	***	***	***	***	***
Korea	***	***	***	***	***
Singapore	***	***	***	***	***
South Africa	***	***	***	***	***
Spain	***	***	***	***	***
Total, underselling	64	215,557	7.9	0.2	36.7
2016	***	***	***	***	***
2017	***	***	***	***	***
2018	***	***	***	***	***
Jan-Jun 2019	***	***	***	***	***
Total, underselling	64	215,557	7.9	0.2	36.7
Source	(Overselling)				
	Number of quarters	Quantity (short tons)	Average margin (percent)	Margin Range (percent)	
				Min	Max
Product 1	***	***	***	***	***
Product 2	***	***	***	***	***
Product 3	***	***	***	***	***
Product 4	***	***	***	***	***
Total, overselling	108	227,198	(12.5)	(0.0)	(61.2)
Belgium	***	***	***	***	***
Korea	***	***	***	***	***
Singapore	***	***	***	***	***
South Africa	***	***	***	***	***
Spain	***	***	***	***	***
Total, overselling	108	227,198	(12.5)	(0.0)	(61.2)
2016	***	***	***	***	***
2017	***	***	***	***	***
2018	***	***	***	***	***
Jan-Jun 2019	***	***	***	***	***
Total, overselling	108	227,198	(12.5)	(0.0)	(61.2)

[1] These data include only quarters in which there is a comparison between the U.S. and subject product.

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

In the final phase of the investigations, of the seven responding U.S. producers, five reported that they had to reduce prices, two reported that they had to roll back announced price increases, and three reported that they had lost sales.

Thirty-three firms provided purchaser questionnaire responses.[33] Responding purchasers reported purchasing and importing a combined 4.8 million short tons of acetone during January 2016-June 2019 (table V-9).

Of the 33 responding purchasers, 16 reported that, since 2016, they had purchased imported acetone from one or more subject countries instead of U.S.-produced product. Eight of these purchasers reported that prices of imports from at least one subject country were lower than U.S.-produced product, and six of these purchasers reported that price was a primary reason for the decision to purchase imported product rather than U.S.-produced product (table V-10a). Four purchasers estimated the quantity of acetone from subject countries purchased instead of domestic product; quantities ranged from *** short tons to *** short tons (tables V-10a and V-10b). Purchasers identified a number of non-price reasons for purchasing imported rather than U.S.-produced product, including the following: multi-supplier global strategy, refusal of domestic firms to sell, supply security, diversification of supply base, and flexibility to supply on short notice.

Of the 33 responding purchasers, four reported that U.S. producers had reduced prices in order to compete with lower-priced imports from one or more subject countries; 24 reported that they did not know (tables V-11a and V-11b). The reported estimated price reductions ranged from 8 to 40 percent.

[33] Two purchasers (***) submitted lost sales lost revenue survey responses in the preliminary phase, but did not submit purchaser questionnaire responses in the final phase. ***.

Table V-9
Acetone: Purchasers' reported purchases and imports

Purchaser	Purchases and imports in January 2016-June 2019 (short tons)			Change in domestic share[2] (pp, 2016-18)	Change in subject country share[2] (pp, 2016-18)
	Domestic	Subject	All other[1]		
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
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***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
Total	4,004,655	451,344	331,945	(3.9)	6.1

[1] Includes all other sources and unknown sources.
[2] Percentage points (pp) change: Change in the share of the firm's total purchases of domestic and/or subject country imports between first and last years.

Note.--*** reported that it did not have data available for 2016.

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

Table V-10a
Acetone: Purchasers' responses to purchasing subject imports instead of domestic product, by firm[1]

Purchaser	Subject imports purchased instead of domestic (Y/N)	Imports priced lower (Y/N)	If purchased subject imports instead of domestic, was price a primary reason?		
			Y/N[2]	If Yes, quantity (short tons)	If No, non-price reason
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***

Table continued.

Table V-10a—Continued.
Acetone: Purchasers' responses to purchasing subject imports instead of domestic product, by firm[1]

Purchaser	Subject imports purchased instead of domestic (Y/N)	Imports priced lower (Y/N)	If purchased subject imports instead of domestic, was price a primary reason?		
			Y/N[2]	If Yes, quantity (short tons)	If No, non-price reason
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
Total	Yes--16; No--16	Yes--8; No--8	Yes--6; No--9	69,270	

Footnotes on following page.

[1] Columns indicate “yes” if firm checked the “yes” box for at least one of the subject countries.
[2] Five firms responded “yes” to purchasing imports from at least one subject country instead of domestic product and that price was the primary reason. The following provides additional information regarding these firms’ overall purchase patterns and the subject countries from which they purchased: ***.

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

Table V-10b
Acetone: Purchasers’ responses to purchasing subject imports instead of domestic product, by country

Source	Count of purchasers reporting subject instead of domestic	Count of purchasers reported that imports were priced lower	Count of purchasers reporting that price was a primary reason for shift	Quantity subject purchased (short tons)
Belgium	1	1	1	***
Korea	9	6	5	***
Singapore	5	4	3	***
South Africa	7	3	2	***
Spain	3	2	2	***
Any subject source	16	8	6	69,270

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

Table V-11a
Acetone: Purchasers' responses to U.S. producer price reductions, by firm

Purchaser	Producers reduced price (Y/N)	If producer reduced prices: Country/ estimated U.S. price reduction (percent)	If producer reduced prices: Additional information, if available
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
Total / average	Yes--4; No--5	20.8	---

Note.--The table only shows the responses of firms that answered "yes" or "no" to at least one subject country, or provided additional information. The following firms that answered "don't know" are not shown in the table: ***.

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

Table V-11b
Acetone: Purchasers' responses to U.S. producer price reductions, by country

Source	Count of purchasers reporting U.S. producers reduced prices	Simple average of estimated U.S. price reduction (percent)	Range of estimated U.S. price reductions (percent)	Count of purchasers reporting U.S. producers did not reduce prices	Count of purchasers reporting "don't know"
Belgium	1	20.0	***	5	26
Korea	4	16.8	***	6	23
Singapore	4	14.3	***	5	23
South Africa	3	21.0	***	8	20
Spain	3	22.7	***	4	24
All subject sources	4	20.8	8.0 - 40.0	5	24

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

Part VI: Financial experience of U.S. producers

Background

The financial results of five U.S. producers of acetone are presented in this section of the report.[1] [2] [3] With the exception of *** and ***, which reported on the basis of International Financial Reporting Standards ("IFRS"), the responding U.S. producers reported their financial results on the basis of Generally Accepted Accounting Principles ("GAAP"). All firms reported their financial results on a calendar-year basis. As previously discussed in this report, all U.S. producers reported that their acetone is produced jointly with ***.

Operations on Acetone

Table VI-1 presents aggregated data on U.S. producers' operations with respect to acetone in 2016-2018, January to June 2018, and January to June 2019. Table VI-2 presents changes in average unit value ("AUV") data between periods and table VI-3 presents selected company-specific financial data.

Staff verified the results of *** with its company records. The verification adjustments were incorporated into this report. ***.[4]

[1] *** provided a U.S. producers' questionnaire but did not report usable financial data. Based on reported shipment data, *** represented *** percent of total net sales quantity in 2018.

[2] *** provided a U.S. producers' questionnaire that did not contain financial data; it accounted for *** percent of the U.S. acetone industry's total net sales quantity in 2018.

[3] *** provided a U.S. producers' questionnaire but has not resolved several material issues related to its reported financial data. Thus, the firm's data are not included in this section of the report. Based on reported shipment data, *** represented *** percent of total net sales quantity in 2018.

[4] The changes affected ***.

Figure VI-1
Acetone: Share of net sales quantity by firm, 2018

* * * * * * *

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

Table VI-1
Acetone: Results of operations of U.S. producers, 2016-18, January to June 2018, and January to June 2019

Item	Fiscal year			January to June	
	2016	2017	2018	2018	2019
	Quantity (short tons)				
Total net sales	1,180,939	1,174,614	1,148,654	564,396	535,706
	Value (1,000 dollars)				
Total net sales	659,911	913,253	912,532	447,817	292,061
Cost of goods sold.-- Raw materials	***	***	***	***	***
Direct labor	***	***	***	***	***
Other factory costs	***	***	***	***	***
Less: By-product revenue[1]	***	***	***	***	***
Total COGS	594,981	787,837	860,033	413,514	286,719
Gross profit	64,930	125,416	52,499	34,303	5,342
SG&A expense	23,576	37,443	35,673	16,453	14,586
Operating income or (loss)	41,354	87,973	16,826	17,850	(9,244)
Interest expense	***	***	***	***	***
All other expenses	***	***	***	***	***
All other income	***	***	***	***	***
Net income or (loss)	38,324	83,638	(3,105)	16,054	(20,766)
Depreciation/amortization	***	***	***	***	***
Cash flow	***	***	***	***	***
	Ratio to net sales (percent)				
Cost of goods sold.-- Raw materials	70.3	70.8	81.0	77.8	78.4
Direct labor	4.2	2.9	3.0	3.0	4.5
Other factory costs	16.1	13.0	10.9	12.2	16.3
Less: By-product revenue[1]	***	***	***	***	***
Average COGS	90.2	86.3	94.2	92.3	98.2
Gross profit	9.8	13.7	5.8	7.7	1.8
SG&A expense	3.6	4.1	3.9	3.7	5.0
Operating income or (loss)	6.3	9.6	1.8	4.0	(3.2)
Net income or (loss)	5.8	9.2	(0.3)	3.6	(7.1)

Table continued.

Table VI-1--Continued
Acetone: Results of operations of U.S. producers, 2016-18, January to June 2018, and January to June 2019

Item	Fiscal year			January to June	
	2016	2017	2018	2018	2019
	Ratio to total COGS before by-product offset (percent)				
Cost of goods sold before offset.--					
Raw materials	***	***	***	***	***
Direct labor	***	***	***	***	***
Other factory costs	***	***	***	***	***
Average COGS	***	***	***	***	***
	Unit value (dollars per short ton)				
Total net sales	559	777	794	793	545
Cost of goods sold.--					
Raw materials	393	551	643	617	427
Direct labor	23	22	24	24	24
Other factory costs	90	101	87	97	89
Less: By-product revenue[1]	***	***	***	***	***
Average COGS	504	671	749	733	535
Gross profit	55	107	46	61	10
SG&A expense	20	32	31	29	27
Operating income or (loss)	35	75	15	32	(17)
Net income or (loss)	32	71	(3)	28	(39)
	Number of firms reporting				
Operating losses	***	***	***	***	***
Net losses	***	***	***	***	***
Data	***	***	***	***	***

[1]By-product revenues include sales of ***.

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

Table VI-2
Acetone: Changes in AUVs, between fiscal years and between partial year periods

Item	Between fiscal years			Between partial year period
	2016-18	2016-17	2017-18	2018-19
	Change in AUVs (dollars per short ton)			
Total net sales	***	***	***	***
Cost of goods sold.-- Raw materials	***	***	***	***
Direct labor	***	***	***	***
Other factory costs	***	***	***	***
Less: By-product revenue[1]	***	***	***	***
Average COGS	***	***	***	***
Gross profit	***	***	***	***
SG&A expense	***	***	***	***
Operating income or (loss)	***	***	***	***
Net income or (loss)	***	***	***	***

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

Table VI-3
Acetone: Select results of operations of U.S. producers, by company, 2016-18, January to June 2018, and January to June 2019

Item	Fiscal year			January to June	
	2016	2017	2018	2018	2019
	Total net sales (short tons)				
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
Total net sales quantity	1,180,939	1,174,614	1,148,654	564,396	535,706
	Total net sales (1,000 dollars)				
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
Total net sales value	659,911	913,253	912,532	447,817	292,061
	Cost of goods sold (1,000 dollars)				
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
Total COGS	594,981	787,837	860,033	413,514	286,719

Table continued.

Table VI-3--Continued
Acetone: Select results of operations of U.S. producers, by company, 2016-18, January to June 2018, and January to June 2019

Item	Fiscal year			January to June	
	2016	2017	2018	2018	2019
	Gross profit or (loss) (1,000 dollars)				
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
Total gross profit or (loss)	64,930	125,416	52,499	34,303	5,342
	SG&A expenses (1,000 dollars)				
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
Total SG&A expenses	23,576	37,443	35,673	16,453	14,586
	Operating income or (loss) (1,000 dollars)				
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
Total operating income or (loss)	41,354	87,973	16,826	17,850	(9,244)

Table continued.

Table VI-3--Continued
Acetone: Select results of operations of U.S. producers, by company, 2016-18, January to June 2018, and January to June 2019

Item	Fiscal year			January to June	
	2016	2017	2018	2018	2019
	Net income or (loss) (1,000 dollars)				
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
Total net income or (loss)	38,324	83,638	(3,105)	16,054	(20,766)
	COGS to net sales ratio (percent)				
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
Average COGS to net sales ratio	90.2	86.3	94.2	92.3	98.2
	Gross profit or (loss) to net sales ratio (percent)				
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
Average gross profit or (loss) to net sales ratio	9.8	13.7	5.8	7.7	1.8

Table continued.

Table VI-3--Continued
Acetone: Select results of operations of U.S. producers, by company, 2016-18, January to June 2018, and January to June 2019

Item	Fiscal year			January to June	
	2016	2017	2018	2018	2019
	SG&A expense to net sales ratio (percent)				
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
Average SG&A expense to net sales ratio	3.6	4.1	3.9	3.7	5.0
	Operating income or (loss) to net sales ratio (percent)				
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
Average operating income or (loss) to net sales ratio	6.3	9.6	1.8	4.0	(3.2)
	Net income or (loss) to net sales ratio (percent)				
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
Average net income or (loss) to net sales ratio	5.8	9.2	(0.3)	3.6	(7.1)

Table continued.

Table VI-3--Continued
Acetone: Select results of operations of U.S. producers, by company, 2016-18, January to June 2018, and January to June 2019

Item	Fiscal year			January to June	
	2016	2017	2018	2018	2019
	Unit net sales value (dollars per short ton)				
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
Average unit net sales value	559	777	794	793	545
	Unit raw materials (dollars per short ton)				
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
Average unit raw materials	393	551	643	617	427
	Unit direct labor (dollars per short ton)				
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
Average unit direct labor	23	22	24	24	24
	Unit other factory costs (dollars per short ton)				
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
Average unit other factory costs	90	101	87	97	89

Table continued.

Table VI-3--Continued
Acetone: Select results of operations of U.S. producers, by company, 2016-18, January to June 2018, and January to June 2019

Item	Fiscal year			January to June	
	2016	2017	2018	2018	2019
	By-product revenue offsets (dollars per short ton)[1]				
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
Average unit by-product revenue offset	***	***	***	***	***
	Unit COGS (dollars per short ton)				
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
Average unit COGS	504	671	749	733	535
	Unit gross profit or (loss) (dollars per short ton)				
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
Average unit gross profit or (loss)	55	107	46	61	10

Table continued

Table VI-3--Continued
Acetone: Select results of operations of U.S. producers, by company, 2016-18, January to June 2018, and January to June 2019

Item	Fiscal year			January to June	
	2016	2017	2018	2018	2019
	Unit SG&A expenses (dollars per short ton)				
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
Average unit SG&A expense	20	32	31	29	27
	Unit operating income or (loss) (dollars per short ton)				
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
Average unit operating income or (loss)	35	75	15	32	(17)
	Unit net income or (loss) (dollars per short ton)				
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
Average unit net income or (loss)	32	71	(3)	28	(39)

[1]By-product revenues include sales of ***.

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

Net sales quantity and value

Net sales of acetone, shown in table VI-1, consist primarily of commercial sales and a small amount of internal consumption, which is included but not shown separately in this section of the report.[5] Commercial sales accounted for *** percent of net sales by volume and value during the period examined. From 2016 to 2018, net sales volume decreased by 2.7 percent and net sales revenue increased by 38.3 percent. Net sales volume and revenue were both lower in January to June 2019 (5.1 and 34.8 percent, respectively) when compared to January to June 2018. The average net sales unit value (per-short ton) increased from 2016 to 2018, from $559 in 2016 to $794 in 2018, and was lower in January to June 2019 at $545 than in January to June 2018 at 793.[6] On a company-specific basis, *** companies reported higher net sales AUVs in 2018 than in 2016, and *** companies reported lower net sales AUVs in January to June 2019 than in January to June 2016.[7]

[5]Among producers reporting financial data, internal consumption was only reported by U.S. producer ***, and represented *** percent of net sales by both volume and value for the industry during the period examined. In response to questions by staff, ***. Email from ***.

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

[7]*** were the only firms to report lower net sales AUVs from 2017 to 2018 (*** percent, respectively). The company specific increase from 2017 to 2018 ranged between *** percent, with *** having the largest increase at *** percent. The industry average net sales AUV was lower in January to June 2019 when compared to January to June 2018 by *** percent, with the smallest decrease at *** percent (***) and the largest decrease at *** percent (***).

Costs of goods sold and gross profit or (loss)

Raw material costs represent the largest component of overall COGS. The total cost of raw materials as a share of COGS ranged from *** percent (2016) to *** percent (2018). On a unit basis (per-short ton), raw material costs increased from $393 in 2016 to $643 in 2018, and it was lower in January to June 2019 at $427 than in January to June 2018 at $617. All U.S. producers reported higher per-short ton raw material costs in 2018 compared to both 2017 and 2016, and all reported lower per-short ton raw material costs in January to June 2019 than in January to June 2018. With respect to their U.S. operations, several producers reported that they purchase inputs from related parties: ***.[8] As shown in table VI-4, raw materials were largely composed of benzene and propylene (which are used to produce cumene). Share values of internally produced benzene and propylene were *** percent, respectively, of total 2018 raw material costs. Cumene, a key chemical in the production of acetone, was either purchased (*** percent) or produced (*** percent) by U.S. producers.

The second largest component of COGS during the period examined was other factory costs, which represented between *** percent (2018) and *** percent (2016) of overall COGS. On a per-short ton basis, other factory costs increased from $90 in 2016 to $101 in 2017, before decreasing to $87 in 2018, and they were lower in January to June 2019 at $89 than in January to June 2018 at $***.[9]

Direct labor, the last component of COGS, accounted for between *** percent (2018) and *** percent (2016) of overall COGS. On a per-short ton basis, direct labor moved within a relatively narrow range from $23 in 2016 to $24 in 2018, and it stayed unchanged in both

[8] *** reported valuing purchases of inputs from related parties at ***. Email from ***. *** reported valuing purchases of inputs from related parties at ***. Email response from ***. *** reported valuing purchases of inputs from related parties at ***. Email from ***.

[9] ***. U.S. producers' questionnaire, section III-10. ***. ***. U.S. producers' questionnaire, section III-10.

January to June 2018 and January to June 2019 at $24. *** consistently had the highest per-short ton direct labor costs among the petitioners.[10]

On an overall basis, the acetone industry's gross profit increased from $64.9 million in 2016 to $125.4 million in 2017 before decreasing to $52.5 million in 2018. In the comparable interim periods, the industry was lower in January to June 2019 at $5.3 million compared to January to June 2018 at $34.3 million. ***.

Since most U.S.-produced acetone yields another product (mainly ***), an allocation methodology is used by the U.S. producers to allocate COGS for acetone. Different allocation methodologies were used by all U.S. producers to allocate costs between acetone and other products. ***.[11]

Due to the different ways of allocating costs across jointly produced products, the rationale behind the cost allocation method used for acetone was given by the petitioners. Broadly, the petitioners believe that there are two principal methods of allocating common costs to acetone and phenol for joint acetone/phenol plants: ***. *** used the *** method, which allocates cost based upon the relative value of the component costs in producing acetone and phenol – RGP and benzene –

[10] ***. Email from ***.

[11] U.S. producers' questionnaire, section III-4. Additionally, ***. ***, accounted for its byproducts (***) in net sales in the normal course of business, while *** accounted for its by-products (***) as a reduction to COGS. The revenues from by-products were reduced from COGS in table VI-1, VI-2, and VI-3.

whereas *** allocated costs based on the relative weight of cumene that is contained in acetone and phenol.[12] As stated previously, *** also allocated costs based on ***.[13] [14]

[12] Petitioners' postconference brief, pp. 8-10.
[13] Email from ***. U.S. producers' questionnaire, section III-9b.
[14] ***.

Table VI-4
Acetone: Raw material costs, 2016-18, January to June 2018, and January to June 2019

Item	Fiscal year			January to June	
	2016	2017	2018	2018	2019
	Value (1,000 dollars)				
Purchased/imported cumene	***	***	***	***	***
Internally produced cumene: Benzene	***	***	***	***	***
Internally produced cumene: Propylene	***	***	***	***	***
Internally produced cumene: Other inputs	***	***	***	***	***
Production using Cumene process: Other material inputs	***	***	***	***	***
Raw materials for cumene process producers	***	***	***	***	***
Production using IPA: Isopropyl alcohol	***	***	***	***	***
Production using IPA: other material inputs	***	***	***	***	***
Raw materials for IPA process producers	***	***	***	***	***
Total, raw materials	***	***	***	***	***
	Share of total value (percent)				
Purchased/imported cumene	***	***	***	***	***
Internally produced cumene: Benzene	***	***	***	***	***
Internally produced cumene: Propylene	***	***	***	***	***
Internally produced cumene: Other inputs	***	***	***	***	***
Production using Cumene process: Other material inputs	***	***	***	***	***
Raw materials for cumene process producers	***	***	***	***	***
Production using IPA: Isopropyl alcohol	***	***	***	***	***
Production using IPA: other material inputs	***	***	***	***	***
Raw materials for IPA process producers	***	***	***	***	***
Total, raw materials	***	***	***	***	***
	Unit value (dollars per short ton)				
Purchased/imported cumene	***	***	***	***	***
Internally produced cumene: Benzene	***	***	***	***	***
Internally produced cumene: Propylene	***	***	***	***	***
Internally produced cumene: Other inputs	***	***	***	***	***
Production using Cumene process: Other material inputs	***	***	***	***	***
Raw materials for cumene process producers	***	***	***	***	***
Production using IPA: Isopropyl alcohol	***	***	***	***	***
Production using IPA: other material inputs	***	***	***	***	***
Raw materials for IPA process producers	***	***	***	***	***
Total, raw materials	***	***	***	***	***

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

Table VI-5
Acetone: Co-product (phenol) revenue, 2016-18, January to June 2018, and January to June 2019

Item	Fiscal year			January to June	
	2016	2017	2018	2018	2019
	Value (1,000 dollars)				
Acetone sales revenue	***	***	***	***	***
Co-product (phenol) sales revenue	***	***	***	***	***
Combined acetone and phenol revenue	***	***	***	***	***
	Share of value (percent)				
Acetone sales revenue	***	***	***	***	***
Co-product (phenol) sales revenue	***	***	***	***	***
Combined acetone and phenol revenue	***	***	***	***	***

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

As previously discussed, most U.S.-produced acetone yields another product, phenol. Table VI-5 provides the revenue for phenol due to its nature as a co-product. Acetone and phenol are typically produced jointly. Phenol revenue represented between *** (2017) to *** (January to June 2019) percent of combined revenue during the period examined. Acetone revenue represented between *** (January to June 2019) to *** (2017) percent of combined revenue during the period examined.

SG&A expenses and operating income

As shown in table VI-1, the industry's SG&A expense ratio (i.e., total SG&A expenses divided by total revenue) modestly increased, from 3.6 percent in 2016 to 3.9 percent in 2018, and it was higher in January to June 2019 at 5.0 percent than in January to June 2018 at 3.7 percent. Table VI-3 shows that from 2016 to 2018 the pattern of company-specific SG&A expense ratios were different in terms of directional trend, with *** companies reporting a higher SG&A expense ratio in 2018 than in 2016, and *** reporting a lower SG&A expense ratio in 2018 than in 2016.[15] Four of five firms reported a higher SG&A expense ratio in January-June 2019 compared to January-June 2018[16].

Operating income followed the same trend as gross profit. It increased from an operating profit of $41.4 million in 2016 to $88.0 million in 2017, and then decreased to $16.8 million in 2018. The industry reported an operating loss in January to June 2019 of $9.2 million compared to an operating profit in January to June 2018 of $17.9 million. Most firms reported similar trends in operating income from 2016 to 2018. *** was the only firm to report a higher operating income in January to June 2019 than in January to June 2018.

Other expenses and net income

Classified below the operating income level are interest expense, other expenses, and other income, which are usually allocated to the product line from high levels in the corporation. Interest expense increased from $*** in 2016 to $*** in 2018, and it was lower in January to June 2019 at $*** than in January to June 2018 at $***. Other expenses increased from $*** in 2016 to $*** in 2018, and were higher in January to June 2019 at $*** than in January to June 2018 at $***.[17] Finally, all other income increased from $*** in 2016 to $*** in 2018, and it was lower in January to June 2019 at $*** than in January to June 2018 at $***.

Overall, net income followed a similar trend to gross profit and operating income and increased from a net income of $38.3 million in 2016 to $83.6 million in 2017 before decreasing

[15] ***. U.S. producers' questionnaire, section III-10.

[16] ***.

[17] ***.

to a net loss of $3.1million in 2018, and it was lower in January to June 2019 at a net loss of $20.8 million than in January to June 2018 at a net profit of $16.1 million.

Variance analysis

Due to differences among reporting firms in cost allocation methodologies for jointly produced products, which may result in less comparability of per-unit costs among firms, a variance analysis is not presented in this report.

Capital expenditures and research and development expenses

Table VI-6 presents capital expenditures and research and development ("R&D") expenses by firm. *** responding firms provided capital expenditure data, and *** provided data on R&D expenses. *** accounted for the largest company-specific amount of capital expenditures during the period of investigation.[18] Total reported capital expenditures for the industry decreased from $24.3 million in 2016 to $18.7million in 2018, and it was higher in January to June 2019 at $8.2 million than in January to June 2018 at $7.1 million.[19] *** to report R&D expenses.[20]

[18] ***. *** U.S. producers' questionnaire, section III-13.

[19] ***. Email from ***.

[20] *** described its R&D expenses as "process/yield improvements". U.S. producers' questionnaire, section III-13.

Table VI-6
Acetone: Capital expenditures and research and development expenses for U.S. producers, by firm, 2016-18, January to June 2018, and January to June 2019

Item	Fiscal year			January to June	
	2016	2017	2018	2018	2019
	Capital expenditures (1,000 dollars)				
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
Total capital expenditures	24,338	19,804	18,672	7,047	8,156
	Research and development expenses (1,000 dollars)				
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
Total research and development expenses	***	***	***	***	***

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

Assets and return on assets

Table VI-7 presents data on the U.S. producers' total assets and their return on assets ("ROA").[21] Total net assets for the acetone industry increased from $152.9 million in 2016 to $275.5 million in 2018, and the ROA irregularly decreased from 27.1 percent to 6.1 percent during this time.[22]

Table VI-7
Acetone: Value of assets used in production, warehousing, and sales, and return on investment for U.S. producers by firm, 2016-18

Firm	Fiscal years		
	2016	2017	2018
	Total net assets (1,000 dollars)		
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
Total net assets	152,856	192,409	275,536
	Operating return on assets (percent)		
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
Average operating return on assets	27.1	45.7	6.1

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

[21] With respect to a company's overall operations, staff notes that a total asset value (i.e., the bottom line number on the asset side of a company's balance sheet) reflects an aggregation of a number of assets which are generally not product specific. Accordingly, high-level allocation factors were required in order to report a total asset value for acetone.

[22] *** relatively high ROA was the result of ***. Email response from ***. *** high ROA in 2016 and 2017 was described as driven by ***. Email from ***.

Capital and investment

The Commission requested U.S. producers of acetone to describe any actual or potential negative effects of imports of acetone from Belgium, Korea, Singapore, South Africa, and Spain on their firms' growth, investment, ability to raise capital, development and production efforts, or the scale of capital investments. Table VI-8 presents the number of firms reporting an impact in each category and table VI-9 provides the U.S. producers' narrative responses.

Table VI-8
Acetone: Actual and anticipated negative effects of imports on investment and growth and development

Item	No	Yes
Negative effects on investment	5	3
Cancellation, postponement, or rejection of expansion projects		2
Denial or rejection of investment proposal		1
Reduction in the size of capital investments		1
Return on specific investments negatively impacted		3
Other		3
Negative effects on growth and development	5	3
Rejection of bank loans		1
Lowering of credit rating		0
Problem related to the issue of stocks or bonds		0
Ability to service debt		0
Other		3
Anticipated negative effects of imports	4	4

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

Table VI-9
Acetone: Narratives relating to actual and anticipated negative effects of imports on investment and growth and development, since January 1, 2016

Item / Firm	Narrative
Cancellation, postponement, or rejection of expansion projects:	
***	***
***	***
Denial or rejection of investment proposal:	
***	***
Reduction in the size of capital investments:	
***	***
Return on specific investments negatively impacted:	
***	***
***	***
***	***
Other negative effects on investments:	
***	***
***	***
***	***

Table continued

Table VI-9--Continued
Acetone: Narratives relating to actual and anticipated negative effects of imports on investment and growth and development, since January 1, 2016

Rejection of bank loans:	
***	***
Other effects on growth and development:	
***	***
***	***
***	***

Table continued

Table VI-9--Continued
Acetone: Narratives relating to actual and anticipated negative effects of imports on investment and growth and development, since January 1, 2016

Anticipated effects of imports:	
***	***
***	***

Table continued

Table VI-9--Continued
Acetone: Narratives relating to actual and anticipated negative effects of imports on investment and growth and development, since January 1, 2016

***	***
***	***

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,*
>
> *(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,*

[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."

(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*; 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 Belgium

The Commission issued a foreign producer's or exporter's questionnaire to one firm, INEOS Europe AG ("INEOS Europe") believed to be the only producer of acetone in Belgium.[3] A completed response to the Commission's questionnaire was received from this firm. INEOS Europe exports to the United States accounted for approximately *** percent of U.S. imports of acetone from Belgium in 2018 and according to INEOS Europe, the production of acetone in Belgium reported in its questionnaire accounts for *** production of acetone in Belgium.[4] Table VII-1 presents information on the acetone operations of INEOS Europe.

Table VII-1
Acetone: Summary data for producers in Belgium, 2018

Firm	Production (short tons)	Share of reported production (percent)	Exports to the United States (short tons)	Share of reported exports to the United States (percent)	Total shipments (short tons)	Share of firm's total shipments exported to the United States (percent)
INEOS Europe	***	***	***	***	***	***
Total	***	***	***	***	***	***

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

Changes in operations

As presented in table VII-2, INEOS Europe reported two operational and organizational changes since January 1, 2016.

Table VII-2
Acetone: INEOS Europe's reported changes in operations; since January 1, 2016

Item / Firm	Reported changed in operations
Prolonged shutdowns or curtailments:	
***	***
Weather related event(s) / force majeure event(s):	
***	***

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

[3] This firm was identified through a review of information submitted in the petition and contained in *** records.

[4] Hearing transcript, p. 176 and p. 179 (Foster).

Operations on acetone

Table VII-3 presents information on the acetone operations of the responding producers and exporters in Belgium.

Capacity in Belgium increased by *** percent from 2016 to 2018, and is projected to be the same in 2020 as it was in 2017, but higher than in 2016, 2018 and 2019. Belgian producer INEOS Europe's production increased by *** percent from 2016 to 2018, and is projected to *** for 2019 and 2020. Its exports to the United States more than doubled from 2016 to 2018. Capacity utilization increased by *** percentage points from 2016 to 2018, from *** short tons to *** short tons and is projected to be *** percent lower in 2019 and 2020 than in 2018.

Table VII-3
Acetone: Data for INEOS Europe, 2016-18, January to June 2018, January to June 2018, and projected calendar years 2019 and 2020

Item	Actual experience					Projections	
	Calendar year			January to June		Calendar year	
	2016	2017	2018	2018	2019	2019	2020
	Quantity (short tons)						
Capacity	***	***	***	***	***	***	***
Production	***	***	***	***	***	***	***
End-of-period inventories	***	***	***	***	***	***	***
Shipments:							
Home market shipments:							
Internal consumption/ transfers	***	***	***	***	***	***	***
Commercial home market shipments	***	***	***	***	***	***	***
Total home market shipments	***	***	***	***	***	***	***
Export shipments to:							
United States	***	***	***	***	***	***	***
All other markets	***	***	***	***	***	***	***
Total exports	***	***	***	***	***	***	***
Total shipments	***	***	***	***	***	***	***

Table continued on the next page.

Table VII-3--Continued
Acetone: Data for INEOS Europe's, 2016-18, January to June 2018, January to June 2019, and projected calendar years 2019 and 2020

Item	Actual experience					Projections	
	Calendar year			January to June		Calendar year	
	2016	2017	2018	2018	2019	2019	2020
	Ratios and shares (percent)						
Capacity utilization	***	***	***	***	***	***	***
Inventories/production	***	***	***	***	***	***	***
Inventories/total shipments	***	***	***	***	***	***	***
Share of shipments:							
Home market shipments:							
Internal consumption/ transfers	***	***	***	***	***	***	***
Commercial home market shipments	***	***	***	***	***	***	***
Total home market shipments	***	***	***	***	***	***	***
Export shipments to:							
United States	***	***	***	***	***	***	***
All other markets	***	***	***	***	***	***	***
Total exports	***	***	***	***	***	***	***
Total shipments	***	***	***	***	***	***	***

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

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

Alternative products

As shown in table VII-4, INEOS produced other products (phenol) on the same equipment and machinery used to produce acetone. Table VII-4 indicates that acetone, as a share of total production on this equipment and machinery accounted for slightly more than *** percent of production on average each year during 2016-18. Between 2016 and 2018, INEOS Europe's overall capacity utilization increased by *** percentage points.

Table VII-4
Acetone: INEOS Europe's overall capacity and production on the same equipment as subject production, 2016-18, January to June 2018, January to June 2019

Item	Calendar year			January to June	
	2016	2017	2018	2018	2019
	Quantity (short tons)				
Overall capacity	***	***	***	***	***
Production:					
Acetone	***	***	***	***	***
Co- or by-products	***	***	***	***	***
Other, alternative products	***	***	***	***	***
Total same machinery	***	***	***	***	***
	Ratios and shares (percent)				
Overall capacity utilization	***	***	***	***	***
Share of production:					
Acetone	***	***	***	***	***
Co- or by-products	***	***	***	***	***
Other, alternative products	***	***	***	***	***
Total same machinery	***	***	***	***	***

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

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

Exports

According to GTA in 2018, the top three leading export markets for acetone from Belgium are: Germany, accounting for 35.4 percent; the Netherlands accounting for 14.6 percent; and the United States accounting for 13.9 percent, respectively (table VII-5).

Table VII-5
Acetone: Exports from Belgium by destination market, 2016-18

Destination market	Calendar year		
	2016	2017	2018
	Quantity (short tons)		
United States	30,099	56,608	83,871
Germany	225,857	231,464	214,034
Netherlands	133,068	102,996	88,348
United Kingdom	86,206	107,966	74,472
China	8,593	24,125	53,479
France	12,769	28,140	22,742
Turkey	619	6,766	15,136
India	0	5,401	14,980
Switzerland	9,837	8,301	6,001
All other destination markets	26,171	32,873	31,259
Total exports	533,219	604,639	604,322

Table continued on the next page.

Table VII-5--Continued
Acetone: Exports from Belgium by destination market, 2016-18

Destination market	Calendar year		
	2016	2017	2018
	Value (1,000 dollars)		
United States	12,500	35,838	60,022
Germany	116,720	157,014	169,067
Netherlands	103,376	70,543	69,053
United Kingdom	41,475	69,175	52,128
China	3,757	14,727	25,291
France	7,659	22,137	17,300
Turkey	216	5,239	8,332
India	1	2,867	7,892
Switzerland	4,734	5,413	4,727
All other destination markets	15,781	30,236	23,088
Total exports	306,220	413,188	436,901
	Unit value (dollars per short ton)		
United States	415	633	716
Germany	517	678	790
Netherlands	777	685	782
United Kingdom	481	641	700
China	437	610	473
France	600	787	761
Turkey	349	774	551
India	24,515	531	527
Switzerland	481	652	788
All other destination markets	603	920	739
Total exports	574	683	723
	Share of quantity (percent)		
United States	5.6	9.4	13.9
Germany	42.4	38.3	35.4
Netherlands	25.0	17.0	14.6
United Kingdom	16.2	17.9	12.3
China	1.6	4.0	8.8
France	2.4	4.7	3.8
Turkey	0.1	1.1	2.5
India	0.0	0.9	2.5
Switzerland	1.8	1.4	1.0
All other destination markets	4.9	5.4	5.2
Total exports	100.0	100.0	100.0

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

Source: Official exports statistics under HS subheading 2914.11 as reported by EuroStat in the Global Trade Atlas database, accessed August 23, 2019.

The industry in Korea

The Commission issued foreign producers' or exporters' questionnaires to two firms believed to produce and/or export acetone from Korea.[5] Usable response to the Commission's questionnaire was received from LG Chem, Ltd. ("LG Chem"). Another producer, Kumho P&B Chemicals, Inc. ("Kumho"), provided a response in the preliminary phase but did not provide a response in the final phase.[6] These firms' exports to the United States accounted for approximately *** percent of U.S. imports of acetone from Korea in 2018. According to estimates requested of the responding Korean producer, the production of acetone in Korea reported in questionnaires accounts for approximately *** percent of overall production of acetone in Korea. Table VII- 6 presents information on the acetone operations of the responding producers and exporters in Korea.

Table VII-6
Acetone: Summary data for producers in Korea, 2018

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

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

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

Changes in operations

As presented in table VII-7, Kumho reported *** operational and organizational changes since January 1, 2016.

[5] These firms were identified through a review of information submitted in the petition and contained in *** records.

[6] The preliminary phase questionnaire collected data for 2016-18. Interim data for 2018 and 2019 are not available for Kumho, and so prorated 2018 was used.

Table VII-7
Acetone: Reported changes in operations by producers in Korea, since January 1, 2016

Item / Firm	Reported changed in operations
Expansions	
***	***

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

Operations on acetone

Table VII-8 presents information on the acetone operations of the responding producers and exporters in Korea. Data for full years 2016 to 2018, interim periods 2018 and 2019, and projections for 2019 and 2020 reflects both Korean producers.

Capacity in Korea increased by *** from 2016 to 2018; it decreased by *** from interim 2018 to interim 2019; however, it is also projected to increase by *** percent from 2019 to 2020. Korean producers' production increased by *** percent from 2016 to 2018; however, it was *** percent lower in interim 2019 than in interim 2018. Production are projected to increase by *** from 2019 to 2020.

Exports to the United States increased by *** percent from 2016 to 2018, but decreased by *** percent from interim periods of 2018 to 2019. In 2019 and 2020, the projected exports to the United States are expected to decrease by *** percent.

Capacity utilization increased by *** percentage points from 2016 to 2018; similarly, capacity utilization was *** percentage points lower in the interim 2019 than 2018. However, it is projected to remain at nearly that level respectively in 2019 and 2020.

Table VII-8
Acetone: Data for producers in Korea, 2016-18, January to June 2018, and January to June 2019 and projection calendar years 2019 and 2020

Item	Actual experience					Projections	
	Calendar year			January to June		Calendar year	
	2016	2017	2018	2018	2019	2019	2020
	Quantity (short tons)						
Capacity	***	***	***	***	***	***	***
Production	***	***	***	***	***	***	***
End-of-period inventories	***	***	***	***	***	***	***
Shipments:							
Home market shipments:							
Internal consumption/ transfers	***	***	***	***	***	***	***
Commercial home market shipments	***	***	***	***	***	***	***
Total home market shipments	***	***	***	***	***	***	***
Export shipments to:							
United States	***	***	***	***	***	***	***
All other markets	***	***	***	***	***	***	***
Total exports	***	***	***	***	***	***	***
Total shipments	***	***	***	***	***	***	***
	Ratios and shares (percent)						
Capacity utilization	***	***	***	***	***	***	***
Inventories/production	***	***	***	***	***	***	***
Inventories/total shipments	***	***	***	***	***	***	***
Share of shipments:							
Home market shipments:							
Internal consumption/ transfers	***	***	***	***	***	***	***
Commercial home market shipments	***	***	***	***	***	***	***
Total home market shipments	***	***	***	***	***	***	***
Export shipments to:							
United States	***	***	***	***	***	***	***
All other markets	***	***	***	***	***	***	***
Total exports	***	***	***	***	***	***	***
Total shipments	***	***	***	***	***	***	***

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

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

Alternative products

As shown in table VII-9, responding Korean firms produced other products (phenol) on the same equipment and machinery used to produce acetone. Table VII-9 indicates that acetone as a share of total production on the same equipment and machinery from 2016 to 2018 ranged from *** percent to *** percent.

Table VII-9
Acetone: Korea producer's overall capacity and production on the same equipment as subject production, 2016-18, January to June 2018, and January to June 2019 and projection calendar years 2019 and 2020

Item	Calendar year			January to June	
	2016	2017	2018	2018	2019
	Quantity (short tons)				
Overall capacity	***	***	***	***	***
Production:					
Acetone	***	***	***	***	***
Co- or by-products	***	***	***	***	***
Other, alternative products	***	***	***	***	***
Total same machinery	***	***	***	***	***
	Ratios and shares (percent)				
Overall capacity utilization	***	***	***	***	***
Share of production:					
Acetone	***	***	***	***	***
Co- or by-products	***	***	***	***	***
Other, alternative products	***	***	***	***	***
Total same machinery	***	***	***	***	***

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

Exports

According to GTA, the leading export markets for acetone from Korea are China, accounting for 44.1 percent; the United States, accounting for 28.9 percent; and Japan, accounting for 10.9 percent in 2018 (table VII-10).

Table VII-10
Acetone: Exports from Korea by destination markets, 2016-18

Destination market	Calendar year		
	2016	2017	2018
	Quantity (short tons)		
United States	21,834	68,978	104,787
China	180,174	147,785	159,594
Japan	18,247	30,867	39,608
India	30,506	33,818	32,322
United Kingdom	---	---	6,355
Vietnam	454	86	4,000
Malaysia	1,990	2,176	2,688
Brazil	1,107	2,342	2,344
Iran	4,642	4,106	1,806
All other destination markets	1,359	26,652	8,475
Total exports	260,313	316,811	361,978
	Value (1,000 dollars)		
United States	10,348	42,876	56,502
China	87,426	93,819	83,936
Japan	8,927	20,095	24,051
India	14,448	22,238	19,163
United Kingdom	---	---	2,652
Vietnam	268	54	2,157
Malaysia	977	1,512	1,739
Iran	3,540	3,853	1,685
Brazil	633	1,449	1,356
All other destination markets	921	18,369	5,500
Total exports	127,488	204,265	198,741
	Unit value (dollars per short ton)		
United States	474	622	539
China	485	635	526
Japan	489	651	607
India	474	658	593
United Kingdom	---	---	417
Vietnam	591	631	539
Malaysia	491	695	647
Iran	763	938	933
Brazil	572	619	579
All other destination markets	678	689	649
Total exports	490	645	549

Table continued on the next page.

Table VII-10--Continued
Acetone: Exports from Korea by destination markets, 2016-18

Destination market	Calendar year		
	2016	2017	2018
	Share of quantity (percent)		
United States	8.4	21.8	28.9
China	69.2	46.6	44.1
Japan	7.0	9.7	10.9
India	11.7	10.7	8.9
United Kingdom	---	---	1.8
Vietnam	0.2	0.0	1.1
Malaysia	0.8	0.7	0.7
Iran	1.8	1.3	0.5
Brazil	0.4	0.7	0.6
All other destination markets	0.5	8.4	2.3
Total exports	100.0	100.0	100.0

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

Source: Official exports statistics under HS subheading 2914.11 as reported by Korea Customs and Trade Development Institution in the Global Trade Atlas database, accessed August 23, 2019.

The industry in Singapore

The Commission issued a foreign producers' or exporters' questionnaire to one firm, Mitsui Phenols Singapore ("Mitsui") believed to be the only producer of acetone in Singapore.[7] A completed response to the Commission's questionnaire was received from this firm. Mitsui exports to the United States accounted for approximately *** percent of U.S. imports of acetone from Singapore in 2018. According to Mitsui, the production of acetone in Singapore reported in its questionnaire accounts for *** production of acetone in Singapore. Table VII-11 presents information on the acetone operations of Mitsui in Singapore.

[7] Firms were identified through a review of information submitted in the petition and contained in *** records.

Table VII-11
Acetone: Summary data for producers in Singapore, 2018

Firm	Production (short tons)	Share of reported production (percent)	Exports to the United States (short tons)	Share of reported exports to the United States (percent)	Total shipments (short tons)	Share of firm's total shipments exported to the United States (percent)
Mitsui	***	***	***	***	***	***
Total	***	***	***	***	***	***

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

Changes in operations

As presented in table VII-12 Mitsui reported one operational and organizational change since January 1, 2016.

Table VII-12
Acetone: Mitsui's reported changes in operations; since January 1, 2016

Item / Firm	Reported changed in operations
Prolonged shutdowns or curtailments:	
***	***

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

Operations on acetone

Table VII-13 presents information on the acetone operations of the responding producers and exporters in Singapore.

Capacity in Singapore decreased by *** percent from 2016 to 2018 but was *** percent higher in the interim 2019 than in interim 2018. Projection indicated that capacity will decrease by *** percent from 2019 to 2020. From 2016 to 2018, production increased by *** percent; similarly, in the interim period of investigation, production was higher by *** percent in interim 2019 than in interim 2018. Projection indicates that production will increase by *** percent in 2019 but decline by *** percent in 2020.

Exports to the United States increased by *** percent from 2016 to 2018; in the interim period exports are have increased by *** percent. Exports are projected to decline by *** percent and to *** in 2019 and 2020 respectively. Capacity utilization increased by *** percentage points from 2016 to 2018; and it is projected to produce at *** in 2020.

Table VII-13
Acetone: Data on industry in Singapore, 2016-18, January to June 2018, and January to June 2019, projection calendar years 2019 and 2020

Item	Actual experience					Projections	
	Calendar year			January to June		Calendar year	
	2016	2017	2018	2018	2019	2019	2020
	Quantity (short tons)						
Capacity	***	***	***	***	***	***	***
Production	***	***	***	***	***	***	***
End-of-period inventories	***	***	***	***	***	***	***
Shipments:							
Home market shipments:							
Internal consumption/ transfers	***	***	***	***	***	***	***
Commercial home market shipments	***	***	***	***	***	***	***
Total home market shipments	***	***	***	***	***	***	***
Export shipments to:							
United States	***	***	***	***	***	***	***
All other markets	***	***	***	***	***	***	***
Total exports	***	***	***	***	***	***	***
Total shipments	***	***	***	***	***	***	***
	Ratios and shares (percent)						
Capacity utilization	***	***	***	***	***	***	***
Inventories/production	***	***	***	***	***	***	***
Inventories/total shipments	***	***	***	***	***	***	***
Share of shipments:							
Home market shipments:							
Internal consumption/ transfers	***	***	***	***	***	***	***
Commercial home market shipments	***	***	***	***	***	***	***
Total home market shipments	***	***	***	***	***	***	***
Export shipments to:							
United States	***	***	***	***	***	***	***
All other markets	***	***	***	***	***	***	***
Total exports	***	***	***	***	***	***	***
Total shipments	***	***	***	***	***	***	***

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

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

Alternative products

As shown in table VII-14, Mitsui produced other products (phenol) on the same equipment and machinery used to produce acetone. The share of production of acetone on any given machine ranged from *** percent to *** percent from 2016 to 2018, and during the interim periods. Overall capacity utilization increased *** percent from 2016 to 2018 but was lower in interim 2019 than in interim 2018.

Table VII-14
Acetone: Overall capacity and production on the same equipment as in-scope production by producers in Singapore, 2016-18, January to June 2018, and January to June 2019

Item	Calendar year			January to June	
	2016	2017	2018	2018	2019
	Quantity (short tons)				
Overall capacity	***	***	***	***	***
Production:					
Acetone	***	***	***	***	***
Co- or by-products	***	***	***	***	***
Other, alternative products	***	***	***	***	***
Total same machinery	***	***	***	***	***
	Ratios and shares (percent)				
Overall capacity utilization	***	***	***	***	***
Share of production:					
Acetone	***	***	***	***	***
Co- or by-products	***	***	***	***	***
Other, alternative products	***	***	***	***	***
Total same machinery	***	***	***	***	***

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

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

Exports

According to GTA, the leading export markets for acetone from Singapore in 2018 were Thailand, which accounted for 25.1 percent of Singapore's acetone exports; Indonesia, which accounted for 14.0 percent; and Germany, which accounted for 11.1 percent (table VII-15).

Table VII-15
Acetone: Exports from Singapore by destination market, 2016-18

Destination market	Calendar year		
	2016	2017	2018
	Quantity (short tons)		
United States	2,755	11,238	11,573
Thailand	50,390	56,942	43,501
Indonesia	18,877	21,805	24,240
Germany	17,813	2,304	19,288
Malaysia	13,576	13,882	14,773
China	33,422	29,624	18,596
Korea	4,409	7,716	11,042
Japan	2,003	251	6,570
Vietnam	3,917	4,008	5,525
All other destination markets	24,536	35,688	17,958
Total exports	171,697	183,459	173,066
	Value (1,000 dollars)		
United States	1,264	6,555	6,222
Thailand	24,013	38,134	28,703
Indonesia	9,081	16,307	15,459
Germany	6,964	1,117	12,320
Malaysia	7,210	10,510	10,362
China	16,627	18,304	8,966
Korea	2,111	5,044	5,745
Japan	987	96	3,820
Vietnam	1,780	2,733	3,682
All other destination markets	11,962	23,184	10,502
Total exports	82,000	121,984	105,780

Table continued on the next page.

Table VII-15--Continued
Acetone: Exports from Singapore destination market, 2016-18

Destination market	Calendar year		
	2016	2017	2018
	Unit value (dollars per short ton)		
United States	459	583	538
Thailand	477	670	660
Indonesia	481	748	638
Germany	391	485	639
Malaysia	531	757	701
China	498	618	482
Korea	479	654	520
Japan	493	380	581
Vietnam	454	682	666
All other destination markets	488	650	585
Total exports	478	665	611
	Share of quantity (percent)		
United States	1.6	6.1	6.7
Thailand	29.3	31.0	25.1
Indonesia	11.0	11.9	14.0
Germany	10.4	1.3	11.1
Malaysia	7.9	7.6	8.5
China	19.5	16.1	10.7
Korea	2.6	4.2	6.4
Japan	1.2	0.1	3.8
Vietnam	2.3	2.2	3.2
All other destination markets	14.3	19.5	10.4
Total exports	100.0	100.0	100.0

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

Source: Official exports statistics under HS subheading 2914.11 as reported by International Enterprise Singapore in the Global Trade Atlas database, accessed August 23, 2019.

The industry in South Africa

The Commission issued a foreign producer or exporter questionnaire to one firm, Sasol South Africa Limited ("Sasol") believed to be the only producer of acetone in South Africa.[8] A completed response to the Commission's questionnaire was received by this firm. This firm's export to the United States accounted for approximately *** percent of U.S. imports of acetone from South Africa in 2018. According to estimates requested of the responding South Africa producer, the production of acetone in South Africa reported in its questionnaire accounts for *** production of acetone in South Africa. Table VII-16 presents information on the acetone operations of the responding producer in South Africa.

[8] Firms were identified through a review of information submitted in the petition and contained in *** records.

Table VII-16
Acetone: Summary data for producer in South Africa, 2018

Firm	Production (short tons)	Share of reported production (percent)	Exports to the United States (short tons)	Share of reported exports to the United States (percent)	Total shipments (short tons)	Share of firm's total shipments exported to the United States (percent)
Sasol	***	***	***	***	***	***
Total	***	***	***	***	***	***

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

Changes in operations

Sasol reported *** operational and organizational changes since January 1, 2016.

Operations on acetone

Table VII-17 presents information on the acetone operations of the responding producer in South Africa.

Capacity in South Africa decreased by *** percent from 2016 to 2018 but is projected to increase by *** percent in 2019 and remain at 2019 levels in 2020. Sasol's production decreased by *** percent from 2016 to 2018, but it is projected to increase in 2019 by *** and is expected to stay at 2019 levels in 2020. Exports to the United States decreased by *** percent from 2016 to 2018, but are projected to stay approximately at that level in 2019 and 2020. Capacity utilization decreased by *** percentage points from 2016 to 2018, from ***. It is projected to be *** percent in 2019 and 2020.

Table VII-17
Acetone: Data on industry in South Africa, 2016-18, January to June 2018, and January to June 2019, projection calendar years 2019 and 2020

Item	Actual experience					Projections	
	Calendar year			January to June		Calendar year	
	2016	2017	2018	2018	2019	2019	2020
	Quantity (short tons)						
Capacity	***	***	***	***	***	***	***
Production	***	***	***	***	***	***	***
End-of-period inventories	***	***	***	***	***	***	***
Shipments:							
Home market shipments:							
Internal consumption/ transfers	***	***	***	***	***	***	***
Commercial home market shipments	***	***	***	***	***	***	***
Total home market shipments	***	***	***	***	***	***	***
Export shipments to:							
United States	***	***	***	***	***	***	***
All other markets	***	***	***	***	***	***	***
Total exports	***	***	***	***	***	***	***
Total shipments	***	***	***	***	***	***	***
	Ratios and shares (percent)						
Capacity utilization	***	***	***	***	***	***	***
Inventories/production	***	***	***	***	***	***	***
Inventories/total shipments	***	***	***	***	***	***	***
Share of shipments:							
Home market shipments:							
Internal consumption/ transfers	***	***	***	***	***	***	***
Commercial home market shipments	***	***	***	***	***	***	***
Total home market shipments	***	***	***	***	***	***	***
Export shipments to:							
United States	***	***	***	***	***	***	***
All other markets	***	***	***	***	***	***	***
Total exports	***	***	***	***	***	***	***
Total shipments	***	***	***	***	***	***	***

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

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

Alternative products

Sasol did not produce other products on the same equipment and machinery used to produce acetone. Sasol uses a production process in which no bi-products or coproducts are produced.[9]

Exports

According to GTA, the leading export markets for acetone from South Africa included Belgium, which accounted for 41.7 percent of acetone exports from South Africa in 2018; United States, which accounted for 34.5 percent; and Singapore, which accounted 10.5 percent (table VII-18).

Table VII-18
Acetone: Exports from South Africa by destination market, 2016-18

Destination market	Calendar year		
	2016	2017	2018
	Quantity (short tons)		
United States	27,572	29,751	26,872
Belgium	29,243	25,459	32,550
Singapore	7,647	8,409	8,187
United Arab Emirates	3,933	3,335	4,642
Brazil	8,216	5,362	1,432
India	268	41	838
Jordan	331	1,433	731
Israel	2,497	2,219	660
Ghana	185	400	348
All other destination markets	8,214	6,496	1,743
Total exports	88,105	82,905	78,004
	Value (1,000 dollars)		
United States	11,098	17,814	16,961
Belgium	11,633	20,700	16,458
Singapore	2,686	4,876	4,143
United Arab Emirates	1,630	2,091	2,313
Brazil	3,119	3,856	1,127
India	124	32	451
Jordan	153	824	447
Israel	1,049	1,354	397
Ghana	108	318	288
All other destination markets	3,421	3,751	1,403
Total exports	35,022	55,617	43,988

Table continued on the next page.

[9] Sasol's post conference brief, pp.5-6, March 15, 2019.

Table VII-18--Continued
Acetone: Exports from South Africa by destination market, 2016-18

Destination market	Calendar year		
	2016	2017	2018
	Unit value (dollars per short ton)		
United States	403	599	631
Belgium	398	813	506
Singapore	351	580	506
United Arab Emirates	414	627	498
Brazil	380	719	787
India	462	770	538
Jordan	464	575	612
Israel	420	610	601
Ghana	585	796	827
All other destination markets	417	578	805
Total exports	398	671	564
	Share of quantity (percent)		
United States	31.3	35.9	34.5
Belgium	33.2	30.7	41.7
Singapore	8.7	10.1	10.5
United Arab Emirates	4.5	4.0	6.0
Brazil	9.3	6.5	1.8
India	0.3	0.0	1.1
Jordan	0.4	1.7	0.9
Israel	2.8	2.7	0.8
Ghana	0.2	0.5	0.4
All other destination markets	9.3	7.8	2.2

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

Source: Official exports statistics under HS subheading 2914.11 as reported by International Enterprise South Africa in the Global Trade Atlas database, accessed August 23, 2019

The industry in Spain

The Commission issued foreign producers' or exporters' questionnaires to two firms believed to produce and/or export acetone from Spain.[10] A usable response to the Commission's questionnaire was received from one foreign producer, Cepsa Quimica S.A. ("Cepsa"). This firm's exports to the United States accounted for approximately *** percent of U.S. imports of acetone from Spain in 2018. According to estimates requested of the responding Spanish producer, the production of acetone in Spain reported in questionnaires accounts for *** of the production of acetone in Spain. Table VII-19 presents information on the acetone operations of Cepsa.

[10] These firms were identified through a review of information submitted in the petition and contained in *** records.

Table VII-19
Acetone: Summary data for producers in Spain, 2018

Firm	Production (short tons)	Share of reported production (percent)	Exports to the United States (short tons)	Share of reported exports to the United States (percent)	Total shipments (short tons)	Share of firm's total shipments exported to the United States (percent)
Cepsa	***	***	***	***	***	***
Total	***	***	***	***	***	***

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

Changes in operations

Cepsa reported *** operational and organizational changes since January 1, 2016.

Operations on acetone

Table VII-20 presents information on the acetone operations of the responding producer in Spain. Cepsa's capacity remained constant from 2016 to 2018 and is projected to remain the same in 2019 and 2020.[11] Cepsa's production increased by *** percent from 2016 to 2018, and it is projected to decrease in 2019 by *** percent and decrease by *** percent in 2020. Its exports to the United States increased by *** percent from 2016 to 2018, but are projected to decrease *** in 2019 and 2020. Capacity utilization increased by *** percentage points from 2016 to 2018 and is projected to decrease by *** percentage points in 2019 and continue to decrease by *** percentage points in 2020.

[11] Cepsa stated that ***.

Table VII-20
Acetone: Data on industry in Spain, 2016-18, January to June 2018, and January to June 2019, projection calendar years 2019 and 2020

Item	Actual experience					Projections	
	Calendar year			January to June		Calendar year	
	2016	2017	2018	2018	2019	2019	2020
	Quantity (short tons)						
Capacity	***	***	***	***	***	***	***
Production	***	***	***	***	***	***	***
End-of-period inventories	***	***	***	***	***	***	***
Shipments:							
Home market shipments:							
Internal consumption/ transfers	***	***	***	***	***	***	***
Commercial home market shipments	***	***	***	***	***	***	***
Total home market shipments	***	***	***	***	***	***	***
Export shipments to:							
United States	***	***	***	***	***	***	***
All other markets	***	***	***	***	***	***	***
Total exports	***	***	***	***	***	***	***
Total shipments	***	***	***	***	***	***	***
	Ratios and shares (percent)						
Capacity utilization	***	***	***	***	***	***	***
Inventories/production	***	***	***	***	***	***	***
Inventories/total shipments	***	***	***	***	***	***	***
Share of shipments:							
Home market shipments:							
Internal consumption/ transfers	***	***	***	***	***	***	***
Commercial home market shipments	***	***	***	***	***	***	***
Total home market shipments	***	***	***	***	***	***	***
Export shipments to:							
United States	***	***	***	***	***	***	***
All other markets	***	***	***	***	***	***	***
Total exports	***	***	***	***	***	***	***
Total shipments	***	***	***	***	***	***	***

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

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

Alternative products

As shown in table VII-21, Cepsa produced other products (phenol) on the same equipment and machinery used to produce acetone. Acetone's share of total production ranged from *** to *** percent during 2016-18 and interim 2018 and interim 2019.

Table VII-21
Acetone: Overall capacity and production on the same equipment as in-scope production by producers in Spain, 2016-18, January to June 2018, and January to June 2019

Item	Calendar year			January to June	
	2016	2017	2018	2018	2019
	Quantity (short tons)				
Overall capacity	***	***	***	***	***
Production:					
Acetone	***	***	***	***	***
Co- or by-products	***	***	***	***	***
Other, alternative products	***	***	***	***	***
Total same machinery	***	***	***	***	***
	Ratios and shares (percent)				
Overall capacity utilization	***	***	***	***	***
Share of production:					
Acetone	***	***	***	***	***
Co- or by-products	***	***	***	***	***
Other, alternative products	***	***	***	***	***
Total same machinery	***	***	***	***	***

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

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

Exports

According to GTA, the leading export markets for acetone from Spain included Belgium, which accounted for 57.5 percent of acetone exports from Spain; Germany, which accounted for 19.9 percent; and United States, which accounted for 6.0 percent (table IV-22).

Table VII--22
Acetone: Exports from Spain by destination market, 2016-18

Destination market	Calendar year		
	2016	2017	2018
	Quantity (short tons)		
United States	6,834	11,308	27,431
Belgium	187,758	259,361	281,249
Germany	91,015	103,498	97,451
United Kingdom	10,023	2,414	29,175
Portugal	5,453	4,677	5,312
Switzerland	8,327	7,341	5,083
Netherlands	1,984	2,807	4,644
China	0	1	3,310
Morocco	2,111	2,640	2,640
All other destination markets	3,128	7,134	5,103
Total exports	316,633	401,181	461,396

Table VII-22--Continued
Acetone: Exports from Spain by destination market, 2016-18

Destination market	Calendar year		
	2016	2017	2018
	Value (1,000 dollars)		
United States	3,319	7,762	18,576
Belgium	93,119	162,252	213,847
Germany	42,945	65,842	73,886
United Kingdom	4,983	1,235	21,401
Portugal	3,576	4,920	4,313
Switzerland	4,192	4,822	4,240
Netherlands	644	1,256	2,051
China	0	4	1,980
Morocco	1,322	2,398	1,861
All other destination markets	2,054	9,353	3,890
Total exports	156,154	259,843	346,042
	Unit value (dollars per short ton)		
United States	486	686	677
Belgium	496	626	760
Germany	472	636	758
United Kingdom	497	512	734
Portugal	656	1,052	812
Switzerland	503	657	834
Netherlands	325	447	442
China	3,629	6,550	598
Morocco	626	908	705
All other destination markets	656	1,311	762
Total exports	493	648	750
	Share of quantity (percent)		
United States	2.2	2.8	5.9
Belgium	59.3	64.6	61.0
Germany	28.7	25.8	21.1
United Kingdom	3.2	0.6	6.3
Portugal	1.7	1.2	1.2
Switzerland	2.6	1.8	1.1
Netherlands	0.6	0.7	1.0
China	0.0	0.0	0.7
Morocco	0.7	0.7	0.6
All other destination markets	1.0	1.8	1.1
Total exports	100.0	100.0	100.0

Note.--Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. United States is shown at the top, all remaining top export destinations shown in descending order of 2019 data. Consist with the US import data adjustment, data were adjusted to correct the multiple issue.

Source: Official imports statistics of imports from Spain under HS subheading 2914.11 as reported by various national statistical authorities in the Global Trade Atlas database, accessed August 23, 2019.

Subject countries combined

Table VII-23 presents information on acetone operations of the responding foreign producers and exporters in all subject countries combined. The combined capacity in the subject countries increased by *** percent from 2016 to 2018, and is projected to decrease in 2019, while increasing in 2020. Combined production increased by *** percent from 2016 to 2018; and is projected to decline in 2019 while increasing in 2020.

Combined capacity utilization increased by *** percentage points from 2016 to 2018 and is projected to decrease by *** percentage points in 2019 and by *** percentage points in 2020. Combined exports to the United States more than doubled from 2016 to 2018 and are projected to decrease by *** percent in 2019 and by *** percent in 2020.

Table VII-23
Acetone: Data on the industry in subject countries, 2016-18, January to June 2018, and January to June 2019 and projection calendar years 2019 and 2020

Item	Actual experience					Projections	
	Calendar year			January to June		Calendar year	
	2016	2017	2018	2018	2019	2019	2020
	Quantity (short tons)						
Capacity	***	***	***	***	***	***	***
Production	***	***	***	***	***	***	***
End-of-period inventories	***	***	***	***	***	***	***
Shipments:							
Home market shipments:							
Internal consumption/ transfers	***	***	***	***	***	***	***
Commercial home market shipments	***	***	***	***	***	***	***
Total home market shipments	***	***	***	***	***	***	***
Export shipments to:							
United States	***	***	***	***	***	***	***
All other markets	***	***	***	***	***	***	***
Total exports	***	***	***	***	***	***	***
Total shipments	***	***	***	***	***	***	***

Table continues on the next page.

Table VII-23--Continued
Acetone: Data on the industry in subject countries, 2016-18, January to June 2018, and January to June 2019 and projection calendar years 2019 and 2020

Item	Actual experience					Projections	
	Calendar year			January to June		Calendar year	
	2016	2017	2018	2018	2019	2019	2020
Capacity utilization	***	***	***	***	***	***	***
Inventories/production	***	***	***	***	***	***	***
Inventories/total shipments	***	***	***	***	***	***	***
Share of shipments:							
Home market shipments:							
Internal consumption/ transfers	***	***	***	***	***	***	***
Commercial home market shipments	***	***	***	***	***	***	***
Total home market shipments	***	***	***	***	***	***	***
Export shipments to:							
United States	***	***	***	***	***	***	***
All other markets	***	***	***	***	***	***	***
Total exports	***	***	***	***	***	***	***
Total shipments	***	***	***	***	***	***	***

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

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

U.S. inventories of imported merchandise

Table VII-24 presents data on U.S. importers' reported inventories of acetone. Inventories from subject sources accounted for *** inventories held by importers in the United States, except in interim 2019, in which it represented approximately *** percent. These inventories increased by *** percent from 2016 to 2018. As a ratio to U.S. imports inventories increased by *** percentage points over the same period.

Table VII-24
Acetone: U.S. importers' end-of-period inventories of imports by source, 2016-18, January to June 2018, and January to June 2019

Item	Calendar year			January to June	
	2016	2017	2018	2018	2019
	Inventories (short tons); Ratios (percent)				
Imports from Belgium: Inventories	***	***	***	***	***
Ratio to U.S. imports	***	***	***	***	***
Ratio to U.S. shipments of imports	***	***	***	***	***
Ratio to total shipments of imports	***	***	***	***	***
Imports from Korea: Inventories	***	***	***	***	***
Ratio to U.S. imports	***	***	***	***	***
Ratio to U.S. shipments of imports	***	***	***	***	***
Ratio to total shipments of imports	***	***	***	***	***
Imports from Singapore: Inventories	***	***	***	***	***
Ratio to U.S. imports	***	***	***	***	***
Ratio to U.S. shipments of imports	***	***	***	***	***
Ratio to total shipments of imports	***	***	***	***	***
Imports from South Africa: Inventories	***	***	***	***	***
Ratio to U.S. imports	***	***	***	***	***
Ratio to U.S. shipments of imports	***	***	***	***	***
Ratio to total shipments of imports	***	***	***	***	***
Imports from Spain: Inventories	***	***	***	***	***
Ratio to U.S. imports	***	***	***	***	***
Ratio to U.S. shipments of imports	***	***	***	***	***
Ratio to total shipments of imports	***	***	***	***	***
Imports from subject sources: Inventories	***	***	***	***	***
Ratio to U.S. imports	***	***	***	***	***
Ratio to U.S. shipments of imports	***	***	***	***	***
Ratio to total shipments of imports	***	***	***	***	***
Imports from nonsubject sources: Inventories	***	***	***	***	***
Ratio to U.S. imports	***	***	***	***	***
Ratio to U.S. shipments of imports	***	***	***	***	***
Ratio to total shipments of imports	***	***	***	***	***
Imports from all import sources: Inventories	***	***	***	***	***
Ratio to U.S. imports	***	***	***	***	***
Ratio to U.S. shipments of imports	***	***	***	***	***
Ratio to total shipments of imports	***	***	***	***	***

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

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 acetone from all subject countries and nonsubject sources from July 1, 2019 through June 30, 2020.

Table VII--25
Acetone: Arranged imports, July 2019 through June 2020

Item	Period				
	Jul-Sept 2019	Oct-Dec 2019	Jan-Mar 2020	Apr-June 2020	Total
	Quantity (short tons)				
Arranged U.S. imports from.--					
Belgium	***	***	***	***	***
Korea	***	***	***	***	***
Singapore	***	***	***	***	***
South Africa	***	***	***	***	***
Spain	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***

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

Antidumping or countervailing duty orders in third-country markets

On March 25, 2019, India announced the continuation of antidumping duties on acetone from the European Union, Singapore, South Africa and United States for a period of five years.[12] These duties range from $56.91 to $277.85 per metric ton. On April 16, 2015, India announced the imposition of antidumping duties, ranging from $86.10 to $271.37 per metric ton, on imports of acetone from Taiwan and Saudi Arabia.[13] On February 18, 2015, India imposed antidumping duties of $79.75 per metric ton on imports of acetone from Korea.[14]

China currently imposes antidumping duties on imports of acetone from Japan, Singapore, Korea, and Taiwan, ranging from 5.0 to 56.1 percent.[15] China's Ministry of Commerce

[12] Government of India, Ministry of Finance, Department of Revenue, Notification No. 14/2019-Customs (ADD), http://www.cbic.gov.in/htdocs-cbec/customs/cs-act/notifications/notfns-2019/cs-add2019/csadd14-2019.pdf (accessed March 26, 2019).

[13] Government of India, Ministry of Finance, Department of Revenue, Notification No. 13/2015-Customs (ADD), http://www.cbic.gov.in/htdocs-cbec/customs/cs-act/notifications/notfns-2015/cs-add2015/csadd13-2015.pdf (accessed March 26, 2019).

[14] Government of India, Ministry of Finance, Department of Revenue, Notification No. 05/2015-Customs (ADD), http://www.cbic.gov.in/htdocs-cbec/customs/cs-act/notifications/notfns-2015/cs-add2015/csadd05-2015 (accessed March 26, 2019).

[15] Embassy of the People's Republic of China in the United States of America, "China imposes anti-dumping duties on imported acetone," June 10, 2008, http://www.china-embassy.org/eng//xnyfgk/t463911.htm (accessed March 26, 2019).

announced on June 6, 2019, that it was initiating a review of the antidumping duties on acetone.[16]

Information on nonsubject countries

Nonsubject countries with the largest production capacity for acetone in 2017 were ***[17] Nonsubject imports declined irregularly during 2016-18, from 12,236 short tons (11.1 percent of total U.S. acetone imports) in 2016 to 8,129 short tons (3 percent) in 2018. Taiwan was the leading supplier of U.S. nonsubject imports of acetone in 2016 and 2017, accounting for 10,136 tons (82.8 percent of total U.S. nonsubject imports) in 2016 and 22,080 tons (78.8 percent) in 2017.[18] In 2018, however, U.S. imports from Finland and Italy increased and totaled 3,535 tons (23.8 percent of nonsubject imports) and 2,885 short tons (35 percent), respectively, while U.S. imports of acetone from Taiwan declined to 838 short tons.[19]

Although U.S. imports of acetone from China were relatively small in comparison—approximately 161 short tons in 2018 (approximately 1.1 percent of non-subject imports)—sources testifying at the Commission's conference stated that China is importing less acetone from Korea because China is building up its acetone production capacity, resulting in Korea shifting exports from China to the United States.[20]

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[16] Deborah Xiong, "MOFCOM Initiates Expiry Review Investigation on Acetone Imported from Japan, Singapore, South Korea, and Taiwan," *ChemLinked.com*, June 14, 2019 https://chemlinked.com/news/chemical-news/mofcom-initiates-expiry-review-investigation-acetone-imported-japan-singapore-south-korea-and-taiwan.

[17] ***.

[18] USITC DataWeb/USDOC (HTS subheadings 2914.11.1000 and 2914.11.5000; accessed March 19, 2019).

[19] Finland exported 2 tons of acetone to the United States in 2017 but none in 2016. Despite the growth in exports to the United States, Finland's global exports of acetone declined in 2018 to 53,982 short tons from about 159,000 short tons annually in 2016-17 (or by almost 70 percent). IHS Global Trade Atlas (HTS subheading 2914.11; accessed March 19, 2019).

[20] Conference transcript, p. 91 (Szamosszegi) and hearing transcript, p. 60 (Byers). Also, Korean exports of acetone to India have been subject to an antidumping duty since 2015. K. R. Srivats, "Anti-dumping Duty Imposed on Acetone Imports from South Korea," *The Hindu Business Line*, February 19, 2015, https://www.thehindubusinessline.com/economy/antidumping-duty-imposed-on-acetone-imports-from-south-korea/article6911818.ece. Given the flux in the Chinese and Indian acetone markets, U.S. exports of acetone to China and India grew substantially during 2017-18; U.S. acetone exports to India increased from about 10 short tons in 2017 to about 2449 short tons in 2018 while U.S. exports to China dipped to about 128 short tons in 2017 (from about 5,853 short tons in 2016) before rebounding to about 3,638 short tons in 2018.

***.[21] ***.[22]

***.[23]

Table VII--26
Acetone: Global exports, by exporter, 2016-18

Exporter	Calendar year		
	2016	2017	2018
	Quantity (short tons)		
United States	130,163	146,997	132,739
Belgium	533,219	604,639	604,322
Korea	260,313	316,811	361,978
Singapore	171,697	183,459	173,066
South Africa	88,105	82,905	78,004
Spain	316,633	401,181	461,396
Subject sources	1,500,131	1,735,992	1,811,505
All other major reporting exporters.-- Taiwan	286,019	265,165	268,594
Thailand	123,612	172,822	224,091
Saudi Arabia	47,678	71,975	176,470
Germany	105,302	105,969	107,718
France	42,524	42,105	42,992
Italy	30,662	35,506	45,083
Russia	82,060	56,532	37,906
Netherlands	31,606	62,850	33,797
Poland	20,934	23,625	20,631
All other exporters	58,278	80,040	49,507
Total	2,328,806	2,652,580	2,818,294

Table continues on the next page.

[21] Yoyo Liu, "Solvents: Acetone: China Acetone Supply Glut To Ease In 2019 On Demand Growth," *China Chemicals Outlook 2019*, ICIS, https://www.icis.com/explore/resources/china-chemicals-outlook-2019-publication/ (accessed March 18, 2019).

[22] ***

[23] ***

Table VII—26--Continued
Acetone: Global exports, by exporter, 2016-18

Exporter	Calendar year		
	2016	2017	2018
	Value (1,000 dollars)		
United States	85,846	119,372	109,915
Belgium	306,220	413,188	436,901
Korea	127,488	204,265	198,741
Singapore	82,000	121,984	105,780
South Africa	35,022	55,617	43,988
Spain	156,154	259,843	346,042
Subject sources	792,730	1,174,268	1,241,367
All other major reporting exporters.-- Taiwan	135,802	169,539	144,121
Thailand	65,786	112,690	127,290
Saudi Arabia	27,411	64,594	123,838
Germany	64,663	97,139	90,569
France	25,693	40,105	33,638
Italy	16,855	26,201	29,891
Russia	30,127	38,588	24,575
Netherlands	17,737	52,695	22,472
Poland	12,326	22,247	13,058
All other exporters	32,757	63,649	35,466
Total	1,221,888	1,861,716	1,886,286
	Unit value (dollars per short ton)		
United States	660	812	828
Belgium	574	683	723
Korea	490	645	549
Singapore	478	665	611
South Africa	398	671	564
Spain	493	648	750
Subject sources	528	676	685
All other major reporting exporters.-- Taiwan	475	639	537
Thailand	532	652	568
Saudi Arabia	575	897	702
Germany	614	917	841
France	604	952	782
Italy	550	738	663
Russia	367	683	648
Netherlands	561	838	665
Poland	589	942	633
All other exporters	562	795	716
Total	525	702	669

Table continues on the next page.

Table VII—26--Continued
Acetone: Global exports, by exporter, 2016-18

Exporter	Calendar year		
	2016	2017	2018
	Share of quantity (percent)		
United States	5.6	5.5	4.7
Belgium	22.9	22.8	21.4
Korea	11.2	11.9	12.8
Singapore	7.4	6.9	6.1
South Africa	3.8	3.1	2.8
Spain	13.6	15.1	16.4
Subject sources	64.4	65.4	64.3
All other major reporting exporters.-- Taiwan	12.3	10.0	9.5
Thailand	5.3	6.5	8.0
Saudi Arabia	2.0	2.7	6.3
Germany	4.5	4.0	3.8
France	1.8	1.6	1.5
Italy	1.3	1.3	1.6
Russia	3.5	2.1	1.3
Netherlands	1.4	2.4	1.2
Poland	0.9	0.9	0.7
All other exporters	2.5	3.0	1.8
Total	100.0	100.0	100.0

Note.--Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent.
Note.--2018 data were not yet available for Belgium and several other sizeable exporters of acetone. Mirror data were used for Spain for 2016-18.

Source: Official exports statistics under HS subheading 2914.11, reported by various national statistical authorities in the Global Trade Atlas database, accessed August 23, 2019.

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
84 FR 44635, 08/26/2019	*Acetone From Belgium, Korea, Singapore, South Africa, and Spain; Scheduling of the Final Phase of Anti-Dumping Duty Investigations*	https://www.govinfo.gov/content/pkg/FR-2019-08-26/pdf/2019-18334.pdf
84 FR 50005, 09/24/2019	*Acetone From the Republic of Korea: Preliminary Affirmative Determination of Sales at Less Than Fair Value, Postponement of Final Determination, and Extension of Provisional Measures*	https://www.govinfo.gov/content/pkg/FR-2019-09-24/pdf/2019-20561.pdf
84 FR 49999, 9/24/2019	*Acetone From Belgium: Preliminary Affirmative Determination of Sales at Less Than Fair Value, Postponement of Final Determination, and Extension of Provisional Measures*	https://www.govinfo.gov/content/pkg/FR-2019-09-24/pdf/2019-20562.pdf
84 FR 49984, 9/24/2019	*Acetone From the Republic of South Africa: Preliminary Affirmative Determination of Sales at Less Than Fair Value, Postponement of Final Determination, and Extension of Provisional Measures*	https://www.govinfo.gov/content/pkg/FR-2019-09-24/pdf/2019-20563.pdf
84 FR 56171, 10/21/2019	*Acetone From Singapore: Final Determination of Sales at Less Than Fair Value*	https://www.govinfo.gov/content/pkg/FR-2019-10-21/pdf/2019-22872.pdf
84 FR 56166, 10/21/2019	*Acetone From Spain: Final Determination of Sales at Less Than Fair Value, and Final Determination of No Shipments*	https://www.govinfo.gov/content/pkg/FR-2019-10-21/pdf/2019-22879.pdf

APPENDIX B

LIST OF HEARING WITNESSES

CALENDAR OF PUBLIC HEARING

Those listed below appeared as witnesses at the United States International Trade Commission's hearing:

Subject: Acetone from Belgium, Korea, Singapore, South Africa, and Spain

Inv. Nos.: 731-TA-1435-1436 and 1438-1440 (Final)

Date and Time: October 21, 2019 - 9:30 a.m.

Sessions were held in connection with these investigations in the Main Hearing Room (Room 101), 500 E Street, SW., Washington, DC.

CONGRESSIONAL APPEARANCE:

The Honorable Brian Babin, United States Representative, 36th District, Texas

OPENING REMARKS:

Petitioners (**Stephen J. Orava**, King & Spalding LLP)
Respondents (**Mark B. Lehnardt**, Baker & Hostetler LLP)

In Support of the Imposition of Antidumping Duty Orders:

King & Spalding LLP
Schagrin Associates
Washington, DC
on behalf of

Coalition for Acetone Fair Trade

Paul Sanders, Global Business Director, Chemical Intermediates, AdvanSix, Inc.

Clay Stephenson, Senior Product Manager, AdvanSix, Inc.

Frank Hayes, Chief Financial Officer, ALTIVIA Petrochemicals, LLC

Tim Duhè, Commercial Vice President, ALTIVIA Petrochemicals, LLC

Nicholas W. Hendon, Deputy General Counsel and Vice President Epoxy, Olin Corporation

Davor Safar, Global Business Director Upstream, Olin Corporation

Andrew Szamosszegi, Principle, Capital Trade, Inc.

In Support of the Imposition of
Antidumping Duty Orders (continued):

Charles Anderson, Principle, Capital Trade, Inc.

Roy Houseman, Legislative Director, United Steelworkers

Bonnie B. Byers, Senior International Trade Consultant,
King & Spalding LLP

Stephen J. Orava)
Stephen P. Vaughn) – OF COUNSEL
Christopher T. Cloutier)

In Opposition to the Imposition of
Antidumping Duty Orders:

Mowry & Grimson, PLLC
Washington, DC
on behalf of

Sasol Chemicals (USA) LLC
Sasol Chemicals North America LLC
Sasol South Africa Limited
(collectively "Sasol")

Ajith Harypursat, Manager of Product Stewardship and Technical Services,
Sasol South Africa Limited

Kristin H. Mowry)
) – OF COUNSEL
Sarah M. Wyss)

Steptoe & Johnson LLP
Washington, DC
on behalf of

INEOS Europe AG
INEOS Americas LLC

Michael Foster, Business Manager, INEOS Americas LLC

Lynn Calder, Commercial Director, INEOS Phenol

Jim Dougan, Vice President, Economic Consulting Services

In Opposition to the Imposition of
Antidumping Duty Orders (continued):

Jerrie Mirga, Vice President, Economic Consulting Services

Eric C. Emerson)
) – OF COUNSEL
Luke Tillman)

Drinker Biddle & Reath LLP
Washington, DC
on behalf of

Lucite International, Inc.

Christine H. Frederic, Manager, Direct Procurement,
Lucite International, Inc.

Robert M. Connolly, Director, Procurement Services
Lucite International, Inc.

Douglas J. Heffner)
) – OF COUNSEL
Richard P. Ferrin)

Barnes, Richardson & Colburn LLP
Washington, DC
on behalf of

Mitsui & Co. (U.S.A.), Inc ("Mitsui")

Kathy Rayburn, Mitsui & Co. (U.S.A.), Inc.

Akifumi Ogawa, Business Manager, Aromatics & Industrial Chemicals
Petrochemicals Department, Mitsui & Co. (U.S.A.), Inc.

Matthew T. McGrath) – OF COUNSEL

Baker & Hostetler LLP
Washington, DC
on behalf of

The Dow Chemical Company
Monument Chemical, LLC
The Plaza Group, Inc.
CEPSA Química S.A.

James R. Knaub, Global Business Director,
The Dow Chemical Company

In Opposition to the Imposition of
Antidumping Duty Orders (continued):

Jennifer A. Butcher, Senior Strategic Global Purchasing Manager, The Dow Chemical Company

Qamar Bhatia, President, Monument Chemical, LLC

Sarves Peri, Vice President, Supply Chain, Monument Chemical, LLC

Jeff Haug, Director of Purchasing, Monument Chemical, LLC

Randy Velarde, President, The Plaza Group Inc.

Carlos Díaz Castro, Vice President, Sales & Marketing, Phenol Chain Business Unit, CEPSA QUÍMICA S.A.

Mark B. Lehnardt)
) – OF COUNSEL
Jake R. Frischknecht)

REBUTTAL/CLOSING REMARKS:

Petitioners (**Stephen P. Vaughn**, King & Spalding LLP; and **Christopher T. Cloutier**, Schagrin Associates)

Respondents (**Mark B. Lehnardt**, Baker & Hostetler LLP; and **Eric C. Emerson**, Steptoe & Johnson LLP)

-END-

APPENDIX C

SUMMARY DATA

Table of Content

All Producers

Table C-1
Acetone: Summary data concerning the U.S. market, 2016-18, January to June 2018, and January to June 2019
(Quantity=short tons; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per short ton; Period changes=percent--exceptions noted)

	Reported data					Period changes			
	Calendar year			January to June		Calendar year			Jan-Jun
	2016	2017	2018	2018	2019	2016-18	2016-17	2017-18	2018-19
U.S. consumption quantity:									
Amount	1,404,447	1,439,256	1,524,549	769,630	686,832	▲8.6	▲2.5	▲5.9	▼(10.8)
Producers' share (fn1)	92.2	87.8	83.3	83.1	86.6	▼(8.8)	▼(4.4)	▼(4.5)	▲3.6
Importers' share (fn1):									
Belgium	2.4	3.4	4.5	4.2	2.4	▲2.1	▲1.1	▲1.1	▼(1.7)
Korea	1.8	3.9	6.5	7.0	5.0	▲4.7	▲2.0	▲2.6	▼(2.0)
Singapore	0.2	0.3	0.9	1.1	1.1	▲0.7	▲0.1	▲0.6	▲0.1
South Africa	2.0	1.9	2.0	2.0	2.0	▼(0.1)	▼(0.2)	▲0.1	▼(0.0)
Spain	0.5	0.8	1.8	1.6	2.4	▲1.3	▲0.3	▲1.0	▲0.7
Subject sources	7.0	10.3	15.7	15.9	12.9	▲8.7	▲3.3	▲5.4	▼(3.0)
Nonsubject sources	0.9	1.9	1.0	1.1	0.4	▲0.1	▲1.1	▼(1.0)	▼(0.6)
All import sources	7.8	12.2	16.7	16.9	13.4	▲8.8	▲4.4	▲4.5	▼(3.6)
U.S. consumption value:									
Amount	784,099	1,078,322	1,198,972	593,698	382,229	▲52.9	▲37.5	▲11.2	▼(35.6)
Producers' share (fn1)	92.4	88.1	84.3	83.3	86.7	▼(8.1)	▼(4.3)	▼(3.8)	▲3.4
Importers' share (fn1):									
Belgium	2.2	3.3	4.7	4.2	2.6	▲2.5	▲1.1	▲1.5	▼(1.5)
Korea	1.8	3.8	5.7	6.7	4.9	▲3.9	▲2.0	▲1.9	▼(1.8)
Singapore	0.2	0.3	0.8	1.1	1.0	▲0.6	▲0.1	▲0.5	▼(0.1)
South Africa	1.9	1.8	2.0	2.2	2.1	▲0.1	▼(0.1)	▲0.2	▼(0.1)
Spain	0.4	0.7	1.5	1.5	2.0	▲1.1	▲0.3	▲0.8	▲0.6
Subject sources	6.5	9.9	14.8	15.7	12.7	▲8.3	▲3.4	▲4.9	▼(2.9)
Nonsubject sources	1.1	2.0	0.9	1.0	0.5	▼(0.2)	▲0.9	▼(1.1)	▼(0.5)
All import sources	7.6	11.9	15.7	16.7	13.3	▲8.1	▲4.3	▲3.8	▼(3.4)
U.S. imports from:									
Belgium:									
Quantity	33,670	49,626	69,176	31,959	16,553	▲105.5	▲47.4	▲39.4	▼(48.2)
Value	17,197	35,249	56,832	24,745	10,108	▲230.5	▲105.0	▲61.2	▼(59.2)
Unit value	$511	$710	$822	$774	$611	▲60.9	▲39.1	▲15.7	▼(21.1)
Ending inventory quantity	***	***	***	***	***	▲***	▲***	▲***	▼***
Korea:									
Quantity	25,944	55,688	99,334	53,943	34,543	▲282.9	▲114.6	▲78.4	▼(36.0)
Value	13,992	40,815	67,820	40,050	18,904	▲384.7	▲191.7	▲66.2	▼(52.8)
Unit value	$539	$733	$683	$742	$547	▲26.6	▲35.9	▼(6.8)	▼(26.3)
Ending inventory quantity	***	***	***	***	***	▲***	▲***	▲***	▼***
Singapore:									
Quantity	2,761	4,403	13,546	8,306	7,862	▲390.7	▲59.5	▲207.6	▼(5.3)
Value	1,669	3,057	9,590	6,518	3,872	▲474.4	▲83.1	▲213.7	▼(40.6)
Unit value	$605	$694	$708	$785	$492	▲17.1	▲14.8	▲2.0	▼(37.2)
Ending inventory quantity	***	***	***	***	***	▲***	***	▲***	▲***
South Africa:									
Quantity	28,601	26,761	30,000	15,424	13,493	▲4.9	▼(6.4)	▲12.1	▼(12.5)
Value	14,675	19,414	24,032	12,820	7,984	▲63.8	▲32.3	▲23.8	▼(37.7)
Unit value	$513	$725	$801	$831	$592	▲56.1	▲41.4	▲10.4	▼(28.8)
Ending inventory quantity	***	***	***	***	***	▲***	▲***	▼***	▼***
Spain:									
Quantity	6,834	11,308	27,431	12,595	16,344	▲301.4	▲65.5	▲142.6	▲29.8
Value	3,319	7,762	18,576	8,798	7,817	▲459.7	▲133.9	▲139.3	▼(11.2)
Unit value	$486	$686	$677	$699	$478	▲39.4	▲41.3	▼(1.3)	▼(31.5)
Ending inventory quantity	***	***	***	***	***	▲***	▲***	▲***	▲***
Subject sources:									
Quantity	97,811	147,786	239,487	122,226	88,795	▲144.8	▲51.1	▲62.1	▼(27.4)
Value	50,853	106,297	176,850	92,932	48,684	▲247.8	▲109.0	▲66.4	▼(47.6)
Unit value	$520	$719	$738	$760	$548	▲42.0	▲38.3	▲2.7	▼(27.9)
Ending inventory quantity	***	***	***	***	***	▲***	▲***	▲***	▼***

Table continued on next page.

Table C-1--Continued
Acetone: Summary data concerning the U.S. market, 2016-18, January to June 2018, and January to June 2019
(Quantity=short tons; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per short ton; Period changes=percent--exceptions noted)

	Reported data					Period changes			
	Calendar year			January to June		Calendar year			Jan-Jun
	2016	2017	2018	2018	2019	2016-18	2016-17	2017-18	2018-19
Nonsubject sources:									
Quantity	12,236	28,036	14,875	8,094	3,058	▲21.6	▲129.1	▼(46.9)	▼(62.2)
Value	8,847	21,969	11,075	5,921	2,048	▲25.2	▲148.3	▼(49.6)	▼(65.4)
Unit value	$723	$784	$745	$732	$670	▲3.0	▲8.4	▼(5.0)	▼(8.4)
Ending inventory quantity	***	***	***	***	***	▲***	***	▲***	▲***
All import sources:									
Quantity	110,047	175,822	254,362	130,319	91,853	▲131.1	▲59.8	▲44.7	▼(29.5)
Value	59,700	128,266	187,925	98,853	50,733	▲214.8	▲114.9	▲46.5	▼(48.7)
Unit value	$542	$730	$739	$759	$552	▲36.2	▲34.5	▲1.3	▼(27.2)
Ending inventory quantity	***	***	***	***	***	▲***	▲***	▲***	▼***
U.S. producers':									
Average capacity quantity	1,627,678	1,730,248	1,578,008	790,022	789,105	▼(3.1)	▲6.3	▼(8.8)	▼(0.1)
Production quantity	1,374,809	1,398,299	1,332,796	683,566	649,591	▼(3.1)	▲1.7	▼(4.7)	▼(5.0)
Capacity utilization (fn1)	84.5	80.8	84.5	86.5	82.3	▼(0.0)	▼(3.6)	▲3.6	▼(4.2)
U.S. shipments:									
Quantity	1,294,400	1,263,434	1,270,187	639,311	594,979	▼(1.9)	▼(2.4)	▲0.5	▼(6.9)
Value	724,399	950,056	1,011,047	494,845	331,496	▲39.6	▲31.2	▲6.4	▼(33.0)
Unit value	$560	$752	$796	$774	$557	▲42.2	▲34.4	▲5.9	▼(28.0)
Export shipments:									
Quantity	97,709	123,517	70,335	42,191	35,880	▼(28.0)	▲26.4	▼(43.1)	▼(15.0)
Value	51,691	85,549	53,352	32,032	17,597	▲3.2	▲65.5	▼(37.6)	▼(45.1)
Unit value	$529	$693	$759	$759	$490	▲43.4	▲30.9	▲9.5	▼(35.4)
Ending inventory quantity	55,102	67,788	58,410	73,726	76,436	▲6.0	▲23.0	▼(13.8)	▲3.7
Inventories/total shipments (fn1)	4.0	4.9	4.4	5.4	6.1	▲0.4	▲0.9	▼(0.5)	▲0.6
Production workers	620	593	608	621	620	▼(1.9)	▼(4.4)	▲2.5	▼(0.2)
Hours worked (1,000s)	1,480	1,393	1,396	681	678	▼(5.7)	▼(5.9)	▲0.2	▼(0.4)
Wages paid ($1,000)	71,173	69,280	70,253	35,284	33,470	▼(1.3)	▼(2.7)	▲1.4	▼(5.1)
Hourly wages (dollars per hour)	$48.09	$49.73	$50.32	$51.81	$49.37	▲4.6	▲3.4	▲1.2	▼(4.7)
Productivity (short tons per 1,000 hours)	928.9	1,003.8	954.7	1,003.8	958.1	▲2.8	▲8.1	▼(4.9)	▼(4.5)
Unit labor costs	$52	$50	$53	$52	$52	▲1.8	▼(4.3)	▲6.4	▼(0.2)
Net sales:									
Quantity	1,180,939	1,174,614	1,148,654	564,396	535,706	▼(2.7)	▼(0.5)	▼(2.2)	▼(5.1)
Value	659,911	913,253	912,532	447,817	292,061	▲38.3	▲38.4	▼(0.1)	▼(34.8)
Unit value	$559	$777	$794	$793	$545	▲42.2	▲39.1	▲2.2	▼(31.3)
Cost of goods sold (COGS)	594,981	787,837	860,033	413,514	286,719	▲44.5	▲32.4	▲9.2	▼(30.7)
Gross profit or (loss) (fn2)	64,930	125,416	52,499	34,303	5,342	▼(19.1)	▲93.2	▼(58.1)	▼(84.4)
SG&A expenses	23,576	37,443	35,673	16,453	14,586	▲51.3	▲58.8	▼(4.7)	▼(11.3)
Operating income or (loss) (fn2)	41,354	87,973	16,826	17,850	(9,244)	▼(59.3)	▲112.7	▼(80.9)	▼---
Net income or (loss) (fn2)	38,324	83,638	(3,105)	16,054	(20,766)	▼---	▲118.2	▼---	▼---
Capital expenditures	24,338	19,804	18,672	7,047	8,156	▼(23.3)	▼(18.6)	▼(5.7)	▲15.7
Unit COGS	$504	$671	$749	$733	$535	▲48.6	▲33.1	▲11.6	▼(26.9)
Unit SG&A expenses	$20	$32	$31	$29	$27	▲55.6	▲59.7	▼(2.6)	▼(6.6)
Unit operating income or (loss) (fn2)	$35	$75	$15	$32	$(17)	▼(58.2)	▲113.9	▼(80.4)	▼---
Unit net income or (loss) (fn2)	$32	$71	$(3)	$28	$(39)	▼---	▲119.4	▼---	▼---
COGS/sales (fn1)	90.2	86.3	94.2	92.3	98.2	▲4.1	▼(3.9)	▲8.0	▲5.8
Operating income or (loss)/sales (fn1)	6.3	9.6	1.8	4.0	(3.2)	▼(4.4)	▲3.4	▼(7.8)	▼(7.2)
Net income or (loss)/sales (fn1)	5.8	9.2	(0.3)	3.6	(7.1)	▼(6.1)	▲3.4	▼(9.5)	▼(10.7)

Notes:

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 "---".

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 from official U.S. import statistics using HTS statistical reporting numbers 2914.11.1000 and 2914.11.5000, accessed September 4, 2019.

Related Party Exclusion

Table C-2
Acetone: Summary data concerning the U.S. market excluding one U.S. producer (***), 2016-18, January to June 2018, and January to June 2019
(Quantity=short tons; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per short ton; Period changes=percent--exceptions noted)

	Reported data					Period changes			
	Calendar year			January to June		Calendar year			Jan-Jun
	2016	2017	2018	2018	2019	2016-18	2016-17	2017-18	2018-19
U.S. consumption quantity:									
Amount	1,404,447	1,439,256	1,524,549	769,630	686,832	▲8.6	▲2.5	▲5.9	▼(10.8)
Producers' share (fn1):									
Included producers	***	***	***	***	***	▼***	▼***	▼***	▲***
Excluded producers	***	***	***	***	***	▼***	▼***	▲***	▼***
All producers	92.2	87.8	83.3	83.1	86.6	▼(8.8)	▼(4.4)	▼(4.5)	▲3.6
Importers' share (fn1):									
Belgium	2.4	3.4	4.5	4.2	2.4	▲2.1	▲1.1	▲1.1	▼(1.7)
Korea	1.8	3.9	6.5	7.0	5.0	▲4.7	▲2.0	▲2.6	▼(2.0)
Singapore	0.2	0.3	0.9	1.1	1.1	▲0.7	▲0.1	▲0.6	▲0.1
South Africa	2.0	1.9	2.0	2.0	2.0	▼(0.1)	▼(0.2)	▲0.1	▼(0.0)
Spain	0.5	0.8	1.8	1.6	2.4	▲1.3	▲0.3	▲1.0	▲0.7
Subject sources	7.0	10.3	15.7	15.9	12.9	▲8.7	▲3.3	▲5.4	▼(3.0)
Nonsubject sources	0.9	1.9	1.0	1.1	0.4	▲0.1	▲1.1	▼(1.0)	▼(0.6)
All import sources	7.8	12.2	16.7	16.9	13.4	▲8.8	▲4.4	▲4.5	▼(3.6)
U.S. consumption value:									
Amount	784,099	1,078,322	1,198,972	593,698	382,229	▲52.9	▲37.5	▲11.2	▼(35.6)
Producers' share (fn1):									
Included producers	***	***	***	***	***	▼***	▼***	▼***	▲***
Excluded producers	***	***	***	***	***	▼***	▼***	▲***	▼***
All producers	92.4	88.1	84.3	83.3	86.7	▼(8.1)	▼(4.3)	▼(3.8)	▲3.4
Importers' share (fn1):									
Belgium	2.2	3.3	4.7	4.2	2.6	▲2.5	▲1.1	▲1.5	▼(1.5)
Korea	1.8	3.8	5.7	6.7	4.9	▲3.9	▲2.0	▲1.9	▼(1.8)
Singapore	0.2	0.3	0.8	1.1	1.0	▲0.6	▲0.1	▲0.5	▼(0.1)
South Africa	1.9	1.8	2.0	2.2	2.1	▲0.1	▼(0.1)	▲0.2	▼(0.1)
Spain	0.4	0.7	1.5	1.5	2.0	▲1.1	▲0.3	▲0.8	▲0.6
Subject sources	6.5	9.9	14.8	15.7	12.7	▲8.3	▲3.4	▲4.9	▼(2.9)
Nonsubject sources	1.1	2.0	0.9	1.0	0.5	▼(0.2)	▲0.9	▼(1.1)	▼(0.5)
All import sources	7.6	11.9	15.7	16.7	13.3	▲8.1	▲4.3	▲3.8	▼(3.4)
U.S. imports from:									
Belgium:									
Quantity	33,670	49,626	69,176	31,959	16,553	▲105.5	▲47.4	▲39.4	▼(48.2)
Value	17,197	35,249	56,832	24,745	10,108	▲230.5	▲105.0	▲61.2	▼(59.2)
Unit value	$511	$710	$822	$774	$611	▲60.9	▲39.1	▲15.7	▼(21.1)
Ending inventory quantity	***	***	***	***	***	▲***	▲***	▲***	▼***
Korea:									
Quantity	25,944	55,688	99,334	53,943	34,543	▲282.9	▲114.6	▲78.4	▼(36.0)
Value	13,992	40,815	67,820	40,050	18,904	▲384.7	▲191.7	▲66.2	▼(52.8)
Unit value	$539	$733	$683	$742	$547	▲26.6	▲35.9	▼(6.8)	▼(26.3)
Ending inventory quantity	***	***	***	***	***	▲***	▲***	▲***	▼***
Singapore:									
Quantity	2,761	4,403	13,546	8,306	7,862	▲390.7	▲59.5	▲207.6	▼(5.3)
Value	1,669	3,057	9,590	6,518	3,872	▲474.4	▲83.1	▲213.7	▼(40.6)
Unit value	$605	$694	$708	$785	$492	▲17.1	▲14.8	▲2.0	▼(37.2)
Ending inventory quantity	***	***	***	***	***	▲***	***	▲***	▲***
South Africa:									
Quantity	28,601	26,761	30,000	15,424	13,493	▲4.9	▼(6.4)	▲12.1	▼(12.5)
Value	14,675	19,414	24,032	12,820	7,984	▲63.8	▲32.3	▲23.8	▼(37.7)
Unit value	$513	$725	$801	$831	$592	▲56.1	▲41.4	▲10.4	▼(28.8)
Ending inventory quantity	***	***	***	***	***	▲***	▲***	▼***	▼***
Spain:									
Quantity	6,834	11,308	27,431	12,595	16,344	▲301.4	▲65.5	▲142.6	▲29.8
Value	3,319	7,762	18,576	8,798	7,817	▲459.7	▲133.9	▲139.3	▼(11.2)
Unit value	$486	$686	$677	$699	$478	▲39.4	▲41.3	▼(1.3)	▼(31.5)
Ending inventory quantity	***	***	***	***	***	▲***	▲***	▲***	▲***
Subject sources:									
Quantity	97,811	147,786	239,487	122,226	88,795	▲144.8	▲51.1	▲62.1	▼(27.4)
Value	50,853	106,297	176,850	92,932	48,684	▲247.8	▲109.0	▲66.4	▼(47.6)
Unit value	$520	$719	$738	$760	$548	▲42.0	▲38.3	▲2.7	▼(27.9)
Ending inventory quantity	***	***	***	***	***	▲***	▲***	▲***	▼***

Table continued.

Table C-2--Continued
Acetone: Summary data concerning the U.S. market excluding one U.S. producer (***), 2016-18, January to June 2018, and January to June 2019
(Quantity=short tons; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per short ton; Period changes=percent--exceptions noted)

	Reported data					Period changes			
	Calendar year			January to June		Calendar year			Jan-Jun
	2016	2017	2018	2018	2019	2016-18	2016-17	2017-18	2018-19
Nonsubject sources:									
Quantity	12,236	28,036	14,875	8,094	3,058	▲21.6	▲129.1	▼(46.9)	▼(62.2)
Value	8,847	21,969	11,075	5,921	2,048	▲25.2	▲148.3	▼(49.6)	▼(65.4)
Unit value	$723	$784	$745	$732	$670	▲3.0	▲8.4	▼(5.0)	▼(8.4)
Ending inventory quantity	***	***	***	***	***	▲***	***	▲***	▲***
All import sources:									
Quantity	110,047	175,822	254,362	130,319	91,853	▲131.1	▲59.8	▲44.7	▼(29.5)
Value	59,700	128,266	187,925	98,853	50,733	▲214.8	▲114.9	▲46.5	▼(48.7)
Unit value	$542	$730	$739	$759	$552	▲36.2	▲34.5	▲1.3	▼(27.2)
Ending inventory quantity	***	***	***	***	***	▲***	▲***	▲***	▼***
Included U.S. producers':									
Average capacity quantity	***	***	***	***	***	▼***	▲***	▼***	▼***
Production quantity	***	***	***	***	***	▼***	▲***	▼***	▼***
Capacity utilization (fn1)	***	***	***	***	***	▼***	▼***	▲***	▼***
U.S. shipments:									
Quantity	***	***	***	***	***	▼***	▼***	▲***	▼***
Value	***	***	***	***	***	▲***	▲***	▲***	▼***
Unit value	***	***	***	***	***	▲***	▲***	▲***	▼***
Export shipments:									
Quantity	***	***	***	***	***	▼***	▲***	▼***	▼***
Value	***	***	***	***	***	▲***	▲***	▼***	▼***
Unit value	***	***	***	***	***	▲***	▲***	▲***	▼***
Ending inventory quantity	***	***	***	***	***	▲***	▲***	▼***	▲***
Inventories/total shipments (fn1)	***	***	***	***	***	▲***	▲***	▼***	▲***
Production workers	***	***	***	***	***	▼***	▼***	▲***	***
Hours worked (1,000s)	***	***	***	***	***	▼***	▼***	▲***	▼***
Wages paid ($1,000)	***	***	***	***	***	▼***	▼***	▲***	▼***
Hourly wages (dollars per hour)	***	***	***	***	***	▲***	▲***	▲***	▼***
Productivity (short tons per 1,000 hours)	***	***	***	***	***	▲***	▲***	▼***	▼***
Unit labor costs	***	***	***	***	***	▲***	▼***	▲***	▼***
Net sales:									
Quantity	***	***	***	***	***	▼***	▼***	▼***	▼***
Value	***	***	***	***	***	▲***	▲***	▼***	▼***
Unit value	***	***	***	***	***	▲***	▲***	▲***	▼***
Cost of goods sold (COGS)	***	***	***	***	***	▲***	▲***	▲***	▼***
Gross profit or (loss) (fn2)	***	***	***	***	***	▼***	▲***	▼***	▼***
SG&A expenses	***	***	***	***	***	▲***	▲***	▼***	▼***
Operating income or (loss) (fn2)	***	***	***	***	***	▼***	▲***	▼***	▼***
Net income or (loss) (fn2)	***	***	***	***	***	▼***	▲***	▼***	▼***
Capital expenditures	***	***	***	***	***	▼***	▼***	▼***	▲***
Unit COGS	***	***	***	***	***	▲***	▲***	▲***	▼***
Unit SG&A expenses	***	***	***	***	***	▲***	▲***	▼***	▼***
Unit operating income or (loss) (fn2)	***	***	***	***	***	▼***	▲***	▼***	▼***
Unit net income or (loss) (fn2)	***	***	***	***	***	▼***	▲***	▼***	▼***
COGS/sales (fn1)	***	***	***	***	***	▲***	▼***	▲***	▲***
Operating income or (loss)/sales (fn1)	***	***	***	***	***	▼***	▲***	▼***	▼***
Net income or (loss)/sales (fn1)	***	***	***	***	***	▼***	▲***	▼***	▼***

Notes:

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 "---".

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 from official U.S. import statistics using HTS statistical reporting numbers 2914.11.1000 and 2914.11.5000, accessed September 4, 2019.