Phosphor Copper from Korea

Investigation No. 731-TA-1314 (Final)

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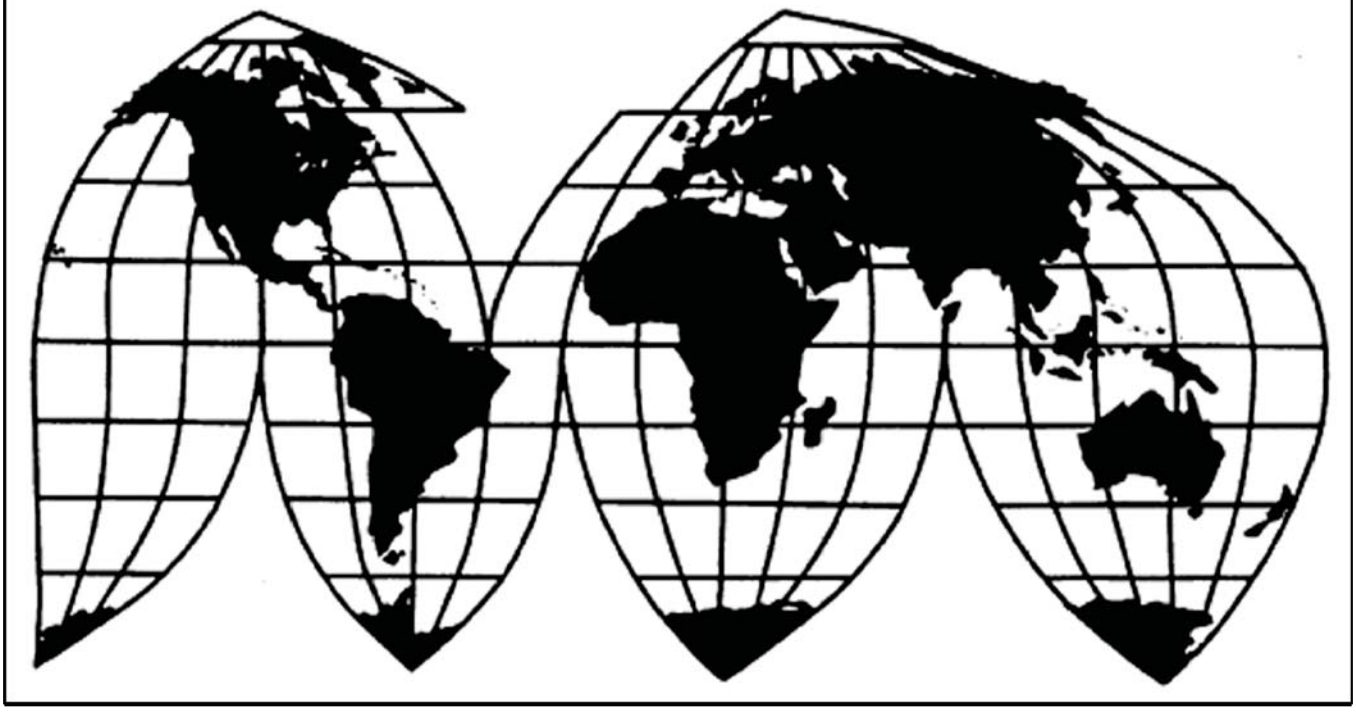
U.S. International Trade Commission



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UNITED STATES INTERNATIONAL TRADE COMMISSION

Investigation No. 731-TA-1314 (Final)
Phosphor Copper from Korea

DETERMINATION

On the basis of the record[1] developed in the subject investigation, the United States International Trade Commission ("Commission") determines, pursuant to the Tariff Act of 1930 ("the Act"), that an industry in the United States is materially injured by reason of imports of phosphor copper from Korea, provided for in subheading 7405.00.10 of the Harmonized Tariff Schedule of the United States, that have been found by the Department of Commerce ("Commerce") to be sold in the United States at less than fair value ("LTFV").

BACKGROUND

The Commission, pursuant to section 735(b) of the Act (19 U.S.C. 1673d(b)), instituted this investigation effective March 9, 2016, following receipt of a petition filed with the Commission and Commerce by Metallurgical Products Company, West Chester, Pennsylvania. The Commission scheduled the final phase of the investigation following notification of a preliminary determination by Commerce that imports of phosphor copper from Korea were being sold at LTFV within the meaning of section 733(b) of the Act (19 U.S.C. 1673b(b)). Notice of the scheduling of the final phase of the Commission's investigation 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* of November 9, 2016 (*81 FR 78852*). The hearing was held in Washington, DC, on February 28, 2017, and all persons who requested the opportunity were permitted to appear in person or by counsel.

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

Views of the Commission

Based on the record in the final phase of this investigation, we determine that an industry in the United States is materially injured by reason of imports of phosphor copper from Korea found by the U.S. Department of Commerce ("Commerce") to be sold in the United States at less than fair value.

I. Background

Metallurgical Products Company ("MPC" or "petitioner"), a domestic producer of phosphor copper, filed the petition in this investigation on March 9, 2016. Petitioner appeared at the hearing accompanied by counsel and submitted briefs. In addition, a representative from the United Steelworkers of America, a labor union representing workers engaged in phosphor copper production, also appeared at the hearing in support of imposition of duties.

The respondents are Bongsan Co., Ltd. ("Bongsan"), the sole known producer of subject merchandise, and J.W. Harris Co. Inc. d/b/a The J.W. Harris Products Group (A Lincoln Electric Company) ("J.W. Harris"), a U.S. importer of subject merchandise (collectively "Respondents"). Respondents jointly submitted prehearing and posthearing briefs, and J.W. Harris, accompanied by counsel, appeared at the hearing.

U.S. industry data are based on questionnaire responses from three domestic producers that accounted for 100 percent of domestic production of phosphor copper in 2015.[1] U.S. import data are based on questionnaire responses of four U.S. importers of phosphor copper from Korea, which accounted for virtually all known subject imports in 2015.[2] Foreign industry data are based on the questionnaire response of the sole producer of phosphor copper from Korea.[3]

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."[4] Section 771(4)(A) of the Tariff Act of 1930, as amended ("the Tariff Act"), defines the relevant domestic industry as the "producers as a whole of a domestic like product, or those producers whose collective output of a domestic like product constitutes a major proportion of the total domestic production of the product."[5] In turn, the Tariff Act defines "domestic like product" as "a product which is like,

[1] Confidential Report ("CR")/Public Report ("PR") at I-4 and Table III-1. The period of investigation covers January 1, 2013 to September 30, 2016.

[2] CR/PR at I-4 and Table IV-2.

[3] CR at I-4 and VII-3; PR at I-4 and VII-2 to VII-3.

[4] 19 U.S.C. § 1677(4)(A).

[5] 19 U.S.C. § 1677(4)(A).

or in the absence of like, most similar in characteristics and uses with, the article subject to an investigation."[6]

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.[7] No single factor is dispositive, and the Commission may consider other factors it deems relevant based on the facts of a particular investigation.[8] The Commission looks for clear dividing lines among possible like products and disregards minor variations.[9] 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,[10] the Commission determines what domestic product is like the imported articles Commerce has identified.[11]

B. Product Description

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

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[6] 19 U.S.C. § 1677(10).

[7] *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).

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

[9] *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.").

[10] *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).

[11] *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 determination defining six like products in investigations in which Commerce found five classes or kinds).

> The merchandise covered by this investigation is master alloys of copper containing between five percent and 17 percent phosphorus by nominal weight, regardless of form (including but not limited to shot, pellet, waffle, ingot, or nugget), and regardless of size or weight. Subject merchandise consists predominantly of copper (by weight), and may contain other elements, including but not limited to iron (Fe), lead (Pb), or tin (Sn), in small amounts (up to one percent by nominal weight). Phosphor copper is frequently produced to JIS H2501 and ASTM B–644, Alloy 3A standards or higher; however, merchandise covered by this investigation includes all phosphor copper, regardless of whether the merchandise meets, fails to meet, or exceeds these standards.
>
> Merchandise covered by this investigation is currently classified in the Harmonized Tariff Schedule of the United States (HTSUS) under subheading 7405.00.1000. This HTSUS subheading is provided for convenience and customs purposes; the written description of the scope of this investigation is dispositive.[12]

Phosphor copper is composed primarily of copper and phosphorus. The phosphor content cannot exceed, and generally is, 15 percent.[13] Phosphor copper is sold in two forms: shot (small pellets) and ingot/waffle (waffle casting with a grid of crossed indentations on the surface), and is used as a deoxidizer, as an alloying additive, and in production of brazing alloys.[14]

C. Analysis

In its preliminary determination, the Commission defined a single domestic like product, coextensive with the scope of investigation.[15] The Commission considered and rejected defining the domestic like product more broadly than the scope of investigation to include copper phosphide.[16] Specifically, the Commission found that phosphor copper and copper phosphide appear to be physically and chemically distinct from each other and both products have distinct end uses.[17] The Commission found that both products involve separate and distinct production processes and both are sold to different customers through distinct

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[12] *Phosphor Copper from Republic of Korea: Final Affirmative Determination of Sales of Less Than Fair Value and Negative Final Determination of Critical Circumstances*, 82 Fed. Reg. 12433 (March 3, 2017) (footnote omitted).

[13] CR/PR at Tables I-2 and I-3.

[14] CR at I-7 to I-10; PR at I-6 to I-8.

[15] *Phosphor Copper from Korea*, Inv. No. 731-TA-1314 (Preliminary), USITC Pub. 4608 (May 2016) ("*Preliminary Determination*") at 6-7.

[16] Preliminary Determination, USITC Pub. 4608 at 6-7.

[17] Preliminary Determination, USITC Pub. 4608 at 6.

channels of distribution.[18] It also found that both products are not interchangeable due to the distinct end uses, and that producers and customers do not perceive the two products as interchangeable.[19]

There is no new information in the final phase of the investigation about the characteristics of phosphor copper.[20] No party argued that the Commission should define the domestic like product differently.[21] Accordingly, for the reasons set forth in our preliminary determination, we define a single domestic like product consisting of phosphor copper, coextensive with Commerce's scope.

III. Domestic Industry

The domestic industry is defined as the domestic "producers as a whole of a domestic like product, or those producers whose collective output of a domestic like product constitutes a major proportion of the total domestic production of the product."[22] 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.

In its preliminary determination, the Commission defined the domestic industry to include all U.S. producers of phosphor copper.[23] No party argued for a different definition of the domestic industry in the final phase of this investigation.[24] There are no related party issues or other domestic industry issues in this investigation.[25] Consequently, we define the domestic industry as consisting of all domestic producers of phosphor copper.

IV. Material Injury by Reason of Subject Imports

Based on the record in the final phase of this investigation, we find that an industry in the United States is materially injured by reason of imports of phosphor copper from Korea 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

[18] Preliminary Determination, USITC Pub. 4608 at 7.

[19] Preliminary Determination, USITC Pub. 4608 at 7.

[20] *See generally* CR at I-7 to I-10; PR at I-7 to I-8.

[21] Petitioner's Prehearing Brief at 2; Respondents' Prehearing Brief at 2; Hearing Tr. at 35 (Pickard).

[22] 19 U.S.C. § 1677(4)(A).

[23] Preliminary Determination, USITC Pub. 4608 at 7-8.

[24] Petitioner's Prehearing Brief at 3; Respondents' Prehearing Brief at 2.

[25] CR at III-2, PR at III-2.

threatened with material injury by reason of the imports under investigation.[26] In making this determination, the Commission must consider the volume of subject imports, their effect on prices for the domestic like product, and their impact on domestic producers of the domestic like product, but only in the context of U.S. production operations.[27] The statute defines "material injury" as "harm which is not inconsequential, immaterial, or unimportant."[28] 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.[29] 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."[30]

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,[31] 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.[32] 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.[33]

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[26] 19 U.S.C. §§ 1671d(b), 1673d(b). The Trade Preferences Extension Act of 2015, Pub. L. 114-27, amended the provisions of the Tariff Act pertaining to Commission determinations of material injury and threat of material injury by reason of subject imports in certain respects. We have applied these amendments here.

[27] 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).

[28] 19 U.S.C. § 1677(7)(A).

[29] 19 U.S.C. § 1677(7)(C)(iii).

[30] 19 U.S.C. § 1677(7)(C)(iii).

[31] 19 U.S.C. §§ 1671d(a), 1673d(a).

[32] *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).

[33] 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).

In many investigations, there are other economic factors at work, some or all of which may also be having adverse effects on the domestic industry. Such economic factors might include nonsubject imports; changes in technology, demand, or consumer tastes; competition among domestic producers; or management decisions by domestic producers. The legislative history explains that the Commission must examine factors other than subject imports to ensure that it is not attributing injury from other factors to the subject imports, thereby inflating an otherwise tangential cause of injury into one that satisfies the statutory material injury threshold.[34] In performing its examination, however, the Commission need not isolate the injury caused by other factors from injury caused by unfairly traded imports.[35] 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.[36] It is

[34] Uruguay Round Agreements Act Statement of Administrative Action (SAA), H.R. Rep. 103-316, vol. I at 851-52 (1994) ("{T}he Commission must examine other factors to ensure that it is not attributing injury from other sources to the subject imports."); S. Rep. 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.

[35] 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.").

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

clear that the existence of injury caused by other factors does not compel a negative determination.[37]

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" and the Commission "ensure{s} that it is not attributing injury from other sources to the subject imports."[38] [39] Indeed, the Federal Circuit has examined and affirmed various Commission methodologies and has disavowed "rigid adherence to a specific formula."[40]

The Federal Circuit's decisions in *Gerald Metals, Bratsk*, and *Mittal Steel* all involved cases where the relevant "other factor" was the presence in the market of significant volumes of price-competitive nonsubject imports. The Commission interpreted the Federal Circuit's guidance in *Bratsk* as requiring it to apply a particular additional methodology following its finding of material injury in cases involving commodity products and a significant market presence of price-competitive nonsubject imports.[41] The additional "replacement/benefit" test looked at whether nonsubject imports might have replaced subject imports without any benefit

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[37] *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.").

[38] *Mittal Steel*, 542 F.3d at 877-78; *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*.

[39] Commissioner Kieff does not join this paragraph or the following three paragraphs. He points out that the Federal Circuit, in *Bratsk*, 444 F.3d 1369, and *Mittal Steel*, held that the Commission is *required*, in certain circumstances when analyzing present material injury, to consider a particular issue with respect to the role of nonsubject imports, without reliance upon presumptions or rigid formulas. The Court has not prescribed a specific method of exposition for this consideration. *Mittal Steel* explains as follows:

> What *Bratsk* held is that "where commodity products are at issue and fairly traded, price competitive, non-subject imports are in the market," the Commission would not fulfill its obligation to consider an important aspect of the problem if it failed to consider whether non-subject or non-LTFV imports would have replaced LTFV subject imports during the period of investigation without a continuing benefit to the domestic industry. 444 F.3d at 1369. Under those circumstances, *Bratsk* requires the Commission to consider whether replacement of the LTFV subject imports might have occurred during the period of investigation, and it requires the Commission to provide an explanation of its conclusion with respect to that factor.

542 F.3d at 878.

[40] *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.").

[41] *Mittal Steel*, 542 F.3d at 875-79.

to the U.S. industry. The Commission applied that specific additional test in subsequent cases, including the *Carbon and Certain Alloy Steel Wire Rod from Trinidad and Tobago* determination that underlies the *Mittal Steel* litigation.

Mittal Steel clarifies that the Commission's interpretation of *Bratsk* was too rigid and makes clear that the Federal Circuit does not require the Commission to apply an additional test nor any one specific methodology; instead, the court requires the Commission to have "evidence in the record" to "show that the harm occurred 'by reason of' the LTFV imports," and requires that the Commission not attribute injury from nonsubject imports or other factors to subject imports.[42] Accordingly, we do not consider ourselves required to apply the replacement/benefit test that was included in Commission opinions subsequent to *Bratsk*.

The progression of *Gerald Metals, Bratsk*, and *Mittal Steel* clarifies that, in cases involving commodity products where price-competitive nonsubject imports are a significant factor in the U.S. market, the Court will require the Commission to give full consideration, with adequate explanation, to non-attribution issues when it performs its causation analysis.[43]

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.[44] Congress has delegated this factual finding to the Commission because of the agency's institutional expertise in resolving injury issues.[45]

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[42] *Mittal Steel*, 542 F.3d at 873 (quoting from *Gerald Metals*, 132 F.3d at 722), 875-79 & n.2 (recognizing the Commission's alternative interpretation of *Bratsk* as a reminder to conduct a non-attribution analysis).

[43] To that end, after the Federal Circuit issued its decision in *Bratsk*, the Commission began to present published information or send out information requests in the final phase of investigations to producers in nonsubject countries that accounted for substantial shares of U.S. imports of subject merchandise (if, in fact, there were large nonsubject import suppliers). In order to provide a more complete record for the Commission's causation analysis, these requests typically seek information on capacity, production, and shipments of the product under investigation in the major source countries that export to the United States. The Commission plans to continue utilizing published or requested information in the final phase of investigations in which there are substantial levels of nonsubject imports.

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

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

B. Conditions of Competition and the Business Cycle[46]

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

1. Demand Considerations

Demand for phosphor copper is driven primarily by the consumption of copper products, in which it is used as a deoxidizer, as an alloying additive, and in production of brazing alloys.[47] The largest end use of phosphor copper is for copper tubing, followed by brazing rods and alloys, and then other specialty copper uses.[48]

Responses from U.S. producers, importers, and purchasers differed on whether U.S. demand for phosphor copper has changed since 2013.[49] Apparent U.S. consumption of phosphor copper fluctuated annually during the period of investigation, but was at relatively the same level in 2015 as 2013 and in January-September ("interim") 2016 as interim 2015.[50]

2. Supply Considerations

The domestic industry was the largest source of phosphor copper to the U.S. market over the period of investigation. Its share of apparent U.S. consumption decreased from *** percent in 2013 to *** percent in 2014 and *** percent in 2015. Its share of apparent consumption was lower in interim 2016 (*** percent) than in interim 2015 (*** percent).[51]

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

Negligibility is not an issue in this investigation. Based on official import statistics, subject imports accounted for *** percent of total imports of phosphor copper by quantity from March 2015 to February 2016, the 12-month period preceding the filing of the petition. CR at IV-6; PR at IV-2 to IV-3.

[47] CR at I-8 and II-9; PR at I-7 and II-6.

[48] CR at II-9; PR at II-6. Phosphor copper with 8 percent phosphorus by weight is used as a grain refiner to produce certain aluminum-silicon alloys. CR at I-9 and II-10; PR at I-8 and II-6.

[49] CR/PR at Table II-3. Two producers, ***, and four U.S. purchasers reported no change in demand; one producer and two purchasers reported a decrease; and one producer, ***, and two purchasers reported fluctuation. Regarding the demand for end-use products, three purchasers reported an increase, four reported no change, five reported a decrease, and two reported fluctuation. *Id.*

[50] CR/PR at Tables IV-5 and C-1. Apparent U.S. consumption rose by *** percent from *** pounds in 2013 to *** pounds in 2014, and fell by *** percent, to *** pounds in 2015. *Id*. Apparent U.S. consumption was *** pounds in interim 2015 and *** pounds interim 2016. *Id*.

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

There are three U.S. producers of phosphor copper.[52] While the domestic industry's production remained stable during the period of investigation, the U.S. industry was operating well below full capacity, and there generally were no reported supply disruptions or constraints with respect to U.S. producers during the period of investigation.[53]

Subject imports from Korea were the next largest source of supply to the U.S. phosphor copper market after the domestic industry during the period of investigation. Their share of apparent U.S. consumption increased from *** percent in 2013 to *** percent in 2014 and *** percent in 2015, and was higher in interim 2016 (*** percent) than in interim 2015 (*** percent).[54] Respondent Bongsan is the sole producer of phosphor copper in Korea.[55]

Nonsubject imports were a very small source of supply to the U.S. market in 2013 and interim 2016, and were not present in 2014 and 2015.[56] Nonsubject imports accounted for *** percent of apparent U.S. consumption in 2013, and less than *** percent during interim 2016.[57]

3. Substitutability Conditions

We find that there is a high degree of substitutability between domestically produced phosphor copper and subject imports,[58] and that price is an important factor in purchasing decisions.[59] Domestically produced and imported phosphor copper are generally produced to the same standard specifications—JIS H2501 or ASTM B-644, Alloy 3A standards.[60] All responding U.S. producers, importers, and purchasers reported that phosphor copper is either always or frequently interchangeable, regardless of source.[61] A majority of purchasers also indicated that the domestic like product and subject imports are comparable with respect to all purchasing factors except delivery time and price.[62]

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[52] CR/PR at Table III-1; CR at II-8; PR at II-5. The U.S. producers and their share of U.S. production in 2015 are: MPC (*** percent), H. Kramer (*** percent), and Milward Alloys (*** percent). *Id*.

[53] CR at II-8 and Table III-3; PR at II-5 and Table III-3.

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

[55] CR at VII-3; PR at VII-2 to VII-3.

[56] CR/PR at Tables IV-5 and C-1.

[57] CR/PR at Table IV-5. In interim 2016, there were *** pounds of U.S. shipments of nonsubject imports. *Id*. Nonsubject import sources included China, India, Japan, Belgium, and Luxembourg. CR at II-8; PR at II-5.

[58] CR at II-14; PR at II-8.

[59] *See* CR/PR at Table II-7.

[60] CR at I-7 and II-21, PR at I-6 and II-12; Hearing Tr. at 16 (Goodman).

[61] CR/PR at Table II-10.

[62] Purchasers reported that the domestic like product and subject imports are comparable in 13 out of 15 purchasing factors. They were equally split on whether the domestic like product is superior to or comparable with subject imports in terms of delivery time. Five out of six purchasers reported that the domestic product is "inferior" in price to (*i.e.*, higher-priced than) subject imports. CR/PR at Table II-9.

The record consequently does not support Respondents' contention that there are quality differences between the domestic like product and subject imports. *See* Respondents Prehearing Brief (Continued...)

The record indicates that price is an important factor in purchasing decisions.[63] Price was cited most often as one of purchasers' top three factors affecting purchasing decisions, followed by quality and availability/delivery/lead time.[64] In rating the importance of 15 factors in purchasing decisions, only availability (13 purchasers) and quality meeting industry standards (13 purchasers) were reported more frequently than price (12 purchasers) as a very important factor.[65]

4. Other Conditions

Phosphor copper is composed primarily of copper and phosphorus, with copper as the principal raw material.[66] Copper product producers prefer phosphor copper with the maximum phosphorus content chemically possible (approximately 15 percent), and aluminum product producers prefer phosphor copper with 8 percent phosphorus content due to its lower melting point.[67] Raw materials are a large component of the cost of phosphor copper production, representing between *** and *** percent of the cost of goods sold for phosphor copper between 2013 and 2015.[68] The prices for both copper and phosphorus have declined since January 2013, with the price of copper declining more sharply.[69]

Phosphor copper prices are generally set using an indexed copper price and a negotiated premium. [70] Since the cost of copper is fixed to an indexed copper price, price competition for phosphor copper is focused on the negotiated premium.[71]

(…Continued)
at 2-3. All responding U.S. purchasers reported that both the domestic like product and subject imports are comparable in terms of meeting or exceeding industry standards. CR/PR at Table II-9. Moreover, all but one U.S. purchaser reported that both subject imports and the domestic like product always met minimum quality specifications, with the remaining purchaser reporting that subject imports always met and the domestic like product usually met minimum quality specifications. CR/PR at Table II-11.

[63] CR at II-18 to II-20; PR at II-11 to II-12.

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

[65] CR/PR at Table II-7.

[66] CR/PR at V-1.

[67] CR at II-10; PR at II-6.

[68] CR/PR at V-1. In interim 2016, raw materials as a share of cost of goods sold was *** percent. *Id*.

[69] CR at V-2 and Figure V-1; PR at V-1 and Figure V-1. According to Copper Metals Exchange ("COMEX") data, between January 2013 and January 2016, copper price decreased by more than 45 percent. By the end of the period of investigation, copper prices were 42.7 percent lower than the prices in January 2013. Economist Worksheets, EDIS Doc. No. 606263 (Mar. 22, 2017); CR/PR at Figure V-1; CR at V-2; PR at V-1.

[70] CR at V-4; PR at V-2; Hearing Tr. at 72 (Pickard). The copper index used for phosphor copper produced in the United States is based on the COMEX, and the copper index used for phosphor copper produced in other counties, including Korea, is based on the London Metals Exchange ("LME"). Hearing Tr. at 93 (Schwartz), 100 (Lutz), and 116 (Cavanaugh); CR at V-2, PR at V-1. The COMEX and LME pricing series are highly correlated, with very little differences between the two. CR/PR at V-2 n.4.

[71] CR at V-4; PR at V-2.

C. Volume of Subject Imports

Section 771(7)(C)(i) of the Tariff Act provides that the "Commission shall consider whether the volume of imports of the merchandise, or any increase in that volume, either in absolute terms or relative to production or consumption in the United States, is significant."[72]

Subject imports increased substantially during the period of investigation. The volume of subject imports increased from *** pounds in 2013 to *** pounds in 2014 and *** pounds in 2015, a level that was *** percent higher than in 2013.[73] Subject imports were *** pounds in interim 2015 and *** pounds in interim 2016.[74] The share of apparent U.S. consumption held by subject imports increased from *** percent in 2013 to *** percent in 2014 and *** percent in 2015; it was *** percent in interim 2015 and *** percent in interim 2016.[75] Due to the near total absence of nonsubject imports, the increase in subject imports' market share came almost entirely at the expense of the domestic industry, which lost *** percentage points of market share from 2013 to 2015, and whose market share was *** percentage points lower in interim 2016 than in interim 2015.[76]

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

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.[77]

As explained above, the record indicates that there is a high degree of substitutability between subject imports and the domestic like product and that price is an important factor in purchasing decisions. A majority of purchasers (five of seven) reported that differences other than price are never or sometimes significant in purchasing decisions for phosphor copper.[78]

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[72] 19 U.S.C. § 1677(7)(C)(i).
[73] CR/PR at Table IV-5.
[74] CR/PR at Table IV-5.
[75] CR/PR at Table IV-5.
[76] CR/PR at Tables IV-5 and C-1.
[77] 19 U.S.C. § 1677(7)(C)(ii).
[78] CR/PR at Table II-12.

The Commission collected pricing data for two products.[79] Three U.S. producers and two importers provided usable pricing data for sales of the requested products, although not all firms reported pricing data for all products for all quarters.[80]

The pricing data show consistent underselling by subject imports during the period of investigation.[81] Specifically, subject imports undersold the domestic like product in 16 of 20 possible quarterly comparisons, or 80 percent of total comparisons.[82] The margins of underselling ranged from *** to *** percent, and the average margin of underselling was *** percent.[83] There were *** pounds of subject imports involved in underselling comparisons and *** pounds involved in overselling comparisons.[84]

In response to the Commission's lost sales and lost revenue survey, five of the 13 responding purchasers reported that price was a primary reason that they had purchased subject imports from Korea instead of the domestic like product.[85] Given the high incidence of

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[79] CR at V-7; PR at V-4. Pricing product 1 is 15% phosphor copper shot that meets or exceeds JIS H2501 Grade 1, Class A, 15 P Cu A, P content approximately 14.8%. P 14.7% to 14.9%, P+Cu>99.75%, Fe<0.03%, Pb<0.01%, Sn<0.01%, in drums or comparable containers. Pricing product 2 is 15% phosphor copper ingot/waffle that meets or exceeds JIS H2501 Grade 1, Class A, 15 P Cu A, P content approximately 14.8%. P 14.7% to 14.9%, P+Cu>99.75%, Fe<0.03%, Pb<0.01%, Sn<0.01%, in drums or comparable containers. *Id*.

[80] CR at V-7; PR at V-4. Reported pricing data accounted for approximately *** percent of U.S. producers' shipments of phosphor copper and *** percent of U.S. shipments of subject imports from Korea from January 2013 to September 2016. *Id*. The only pricing data reported for U.S. shipments of subject imports for product 2 (phosphor copper ingot/waffle form) was for the final five quarters of the period. CR/PR at Table V-4.

[81] Petitioner argued that price competition for phosphor copper involves the negotiated premium since the other component of phosphor copper pricing is set to the indexed copper price. *See* Petitioner Prehearing Brief at 18; Petitioner Posthearing Brief at 7-11. While our questionnaires did not collect specific data regarding these premiums, Commission staff calculated the differences between the prices reported for the pricing products and the copper index prices to approximate the premium. *See* CR/PR at Appendix D. We examined this differential and found it to generally be smaller for the subject imports than for the domestic like product. CR/PR at Table D-1.

[82] CR at V-13 to V-14; PR at V-5 to V-6. We recognize that Respondents have claimed *** pricing data are unreliable. Respondents' Posthearing Brief at 6 & Responses to Commissioners' Questions at 7-13. However, there is no evidence in the record, or proffered by Respondents, to support this allegation. The revisions made to the original questionnaire pricing data are typical adjustments resulting from the Commission's staff examination of questionnaire responses.

[83] CR/PR at Table V-6.

[84] CR/PR at Table V-6.

[85] CR/PR at Tables V-7 and V-8. These five purchasers reported that the amount of subject imports they purchased instead of domestic product for price reasons was *** pounds. *Id*. Three purchasers reported that U.S. producers had reduced prices to compete with lower-priced subject imports and estimated U.S. price reductions ranging from 2.7 percent to 10.0 percent. CR/PR at Table V-9. In addition, out of the 13 purchasers, six reported that they always or usually purchased the lowest-priced phosphor copper, six reported they sometimes did, and only one reported it never did. CR at II-19; PR at II-11.

underselling reported during the period of investigation, the importance of price in purchasing decisions, and the reported purchases of subject imports instead of domestic product primarily due to price, we find the underselling by subject imports to be significant.

We have also examined price trends. Prices for both domestically produced pricing products declined from the first quarter of 2013 to the third quarter of 2016. Price declines for domestic products 1 and 2 were *** percent and *** percent, respectively, while the price decrease for product *** imported from Korea was *** percent.[86] Prices for domestically produced phosphor copper declined and reached period lows during the fourth quarter of 2015.[87] However, copper prices, which make up the bulk of producers' raw material costs and are an indexed component in the sales price for phosphor copper, also declined over the period of investigation.[88] Specifically, between January 2013 and January 2016, copper prices decreased by more than 45 percent.[89] In light of this, we cannot conclude that lower-priced subject imports caused the observed price declines for domestically produced phosphor copper. We therefore do not find that subject imports depressed prices for the domestic like product to a significant degree.

We recognize that the industry's cost of goods sold (COGS) to net sales ratio increased from *** in 2014 to *** in 2015, at the same time as subject imports substantially increased in quantity.[90] However, the domestic industry's average unit COGS declined during this time as a result of declining raw material costs and demand was relatively stable. Under these conditions, price increases would not have been likely in this market. Consequently, we do not find that subject imports prevented price increases which otherwise would have occurred to a significant degree.

Accordingly, based on the record in the final phase of this investigation, we find that there was significant underselling of the domestic like product by the subject imports. As a result of this underselling, the subject imports gained market share at the expense of the domestic industry. The low-priced subject imports consequently had a significant adverse impact on the domestic industry, as described further below.

[86] CR/PR at Table V-5. Between the third quarter of 2015 and the third quarter of 2016, prices for Korean product 2 decreased by *** percent. CR/PR at Table V-5; CR at V-13, n.21; PR at V-5, n.21.

[87] CR/PR at Tables V-3 and V-4.

[88] CR at V-1 to V-2 and Figure V-1; PR at V-1 and Figure V-1. Prices for both copper and phosphorus declined since January 2013, but the price of copper declined by a much greater percentage than the price of phosphorus. *Id*.

[89] CR at V-2; PR at V-1.

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

E. Impact of the Subject Imports[91]

Section 771(7)(C)(iii) of the Tariff Act provides that examining the impact of subject imports, the Commission "shall evaluate all relevant economic factors which have a bearing on the state of the industry."[92] 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."[93]

As the volume and market penetration of the low-priced subject imports increased, U.S. producers' share of apparent U.S. consumption fell from *** percent in 2013 to *** percent in 2014, and then fell further to *** percent in 2015; it was *** percent in interim 2015 and *** percent in interim 2016. [94]

Most indicators of the domestic industry's performance suffered declines from 2014 to 2015 and declined overall from 2013 to 2015; output and revenues were lower in interim 2016 than in interim 2015. The domestic industry's capacity remained stable over the period of investigation.[95] Production increased from *** pounds in 2013 to *** pounds in 2014, then decreased to *** pounds in 2015; it was *** pounds in interim 2015 and *** pounds in interim 2016.[96] Capacity utilization increased from *** percent in 2013 to *** percent in 2014, then decreased to *** percent in 2015; it was *** percent in interim 2015 and *** percent in

[91] The statute instructs the Commission to consider the "magnitude of the dumping margin" in an antidumping proceeding as part of its consideration of the impact of imports. 19 U.S.C. § 1677(7)(C)(iii)(V). In its final determination of sales at less value, Commerce found a dumping margin of 8.43 percent for imports from Bongsan and for its all others rate. *Phosphor Copper from Republic of Korea: Final Affirmative Determination of Sales of Less Than Fair Value and Negative Final Determination of Critical Circumstances*, 82 Fed. Reg. 12433 (March 3, 2017). We take into account in our analysis the fact that the Commerce found all subject imports in the United States were sold at less than fair value. In addition to this consideration, our impact analysis has considered other factors affecting domestic prices. Our analysis of the significant underselling of the subject imports, described in both the price effects discussion and below, is particularly probative to an assessment of the impact of the subject imports.

[92] 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.").

[93] 19 U.S.C. § 1677(7)(C)(iii). This provision was amended by the Trade Preferences Extension Act of 2015, Pub. L. 114-27.

[94] CR/PR at Tables IV-5 and C-1.

[95] CR/PR at Tables III-3 and C-1. Capacity remained at *** pounds from 2013 to 2015 and *** pounds in interim periods. *Id*.

[96] CR/PR at Tables III-3 and C-1.

*** percent in interim 2016.[97] Commercial U.S. shipments increased from *** pounds in 2013 to *** pounds in 2014, then decreased to *** pounds in 2015; they were *** pounds in interim 2015 and *** pounds in interim 2016.[98]

The domestic industry's employment decreased from *** production-related workers in 2013 to *** workers in 2014 and *** workers in 2015; employment was *** production-related workers in both interim 2015 and interim 2016.[99] Other employment-related indicators fluctuated over the period of investigation, but all indicators were lower in 2015 than in 2013, and most were lower in interim 2016 than in interim 2015.[100]

The domestic industry's sales revenues, operating income, operating margins, gross profit, and net income all showed declines in each full year of the period of investigation.[101] Net sales revenues decreased from *** in 2013 to *** in 2014 and *** in 2015; they were *** in interim 2015 and *** in interim 2016. The industry incurred operating losses throughout the period of investigation. Operating income declined from a loss of *** in 2013 to a loss of *** in 2014 and a loss of *** in 2015; operating losses were *** in interim 2015 and *** in interim 2016. The industry's ratio of operating income to net sales declined from *** percent in 2013 to *** percent in 2014 and *** percent in 2015; the ratio was *** in interim 2015 and *** percent in interim 2016.[102] The industry's gross profit and net income followed similar trends.[103] The industry's capital expenditures fluctuated annually and increased overall.[104]

We find that the significant and increased volumes of subject imports that pervasively undersold the domestic like product led to declines in the domestic industry's market share during the period of investigation. The domestic industry's loss of market share to subject

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[97] CR/PR at Tables III-3 and C-1.

[98] CR/PR at Tables III-5 and C-1. As discussed below, the U.S. industry's export shipments also declined, from *** pounds in 2013 to *** pounds in 2015; they were *** pounds in interim 2015 and *** pounds in interim 2016. *Id*. U.S. producers' end-of-period inventories decreased from *** pounds in 2013 to *** pounds in 2014 and *** pounds in 2015; they were *** pounds in interim 2015 and *** pounds in interim 2016. CR/PR at Tables III-7 and C-1. The ratio of inventories to production, as well as the ratio of inventories to U.S. shipments, decreased from 2013 to 2014, increased from 2014 to 2015, and were lower in interim 2016 than in interim 2015. CR/PR at Table III-7.

[99] CR/PR at Table III-8.

[100] CR/PR at Tables III-8 and C-1. Hours worked decreased from *** hours in 2013 to *** hours in 2014 and *** hours in 2015. Wages paid increased from *** in 2013 to *** in 2014, then fell to *** in 2015. Productivity (in pounds per hour) increased from *** in 2013 to *** in 2014 then decreased to *** in 2015. Hours worked, wages paid, and productivity were all lower in interim 2016 than in interim 2015. *Id*.

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

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

[103] Reflecting an increase in the COGS to net sales ratio from *** percent in 2013 to *** percent in 2015, gross profit declined from *** in 2013 to *** in 2014 and *** in 2015. It was *** in interim 2015 and *** in interim 2016. Net income *** from *** in 2013 to *** in 2014 and *** in 2015; it was *** in interim 2015 and *** in interim 2016. CR/PR at Tables VI-1.

[104] CR/PR at Table VI-4. The *** of reported capital expenditures and assets is attributable to ***. CR at VI-10. PR at VI. *** U.S. producer reported research and development expenses. *See generally* CR at VI-10 to VI-11; PR at VI-3 to VI-4.

imports caused the industry's indicia related to output, revenue, and financial performance to decline to levels worse than they would have been otherwise, and these declines occurred despite relatively stable apparent U.S. consumption. We accordingly find that subject imports had a significant impact on the domestic industry.

We have also considered the role of other factors so as not to attribute injury from other factors to the subject imports. Apparent U.S. consumption for phosphor copper remained relatively stable during the period of investigation, so the declines in the domestic industry's condition cannot be explained by declines in consumption.[105] Nonsubject imports, which had only a minimal presence in the U.S. market in 2013 and interim 2016, and were absent in 2014 and 2015, also cannot explain the market share that the domestic industry lost during the period of investigation to increasing subject imports.[106] Additionally, while we recognize that the domestic industry experienced declines in its export shipments from 2014 to 2015 that affected its output and revenues,[107] the domestic industry's commercial U.S. shipments also declined, as subject imports gained market share at the expense of the domestic industry (export shipments are not part of apparent U.S. consumption).[108]

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[105] CR/PR at Tables IV-5 and C-1. Respondents' argument that the decline in U.S. commercial shipments is a result of the decline in apparent U.S. consumption from 2014 to 2015 does not address the absolute and relative increase in subject imports, which came at the expense of the domestic industry's market share, throughout the period of investigation. Respondents' Posthearing Brief, Responses to Commissioners' Questions at 32 and Exh. 7; CR/PR at Tables IV-5 and C-1.

The evidence also does not support Respondents' claim that the decline in U.S. producers' shipments of product types in which there was no import competition, such as 8 percent phosphor copper in the form of shot, reduces the impact attributable to subject imports. Respondents' Posthearing Brief, Responses to Commissioners' Questions at 32-33. We recognize that there was a decline in the domestic industry's U.S. shipments of 8 percent phosphor copper, but this product type accounted for only about *** percent of total U.S. commercial shipments for phosphor copper while 15 percent phosphor copper, the product type in which subject imports are solely concentrated, accounted for about *** percent. CR/PR at Table III-6; CR at IV-6; PR at IV-2 to IV-3. Furthermore, the domestic industry's U.S. commercial shipments of 15 percent phosphor copper declined substantially more than its shipments of 8 percent phosphor copper. *Id*. Respondents' argument ignores the significant decline in the domestic industry's shipments of 15 percent phosphor copper, where there is direct competition with subject imports, and does not explain the decline in the domestic industry's overall market share. CR/PR at Table IV-5.

[106] CR/PR at Tables IV-2 and C-1.

[107] *See* Respondents' Prehearing Brief at 20-23; Respondents' Posthearing Brief, Responses to Commissioners' Questions at 26-29.

[108] The domestic industry's U.S. commercial shipments declined at a faster rate than apparent U.S. consumption both from 2014 to 2015 and between the interim periods. *See* CR/PR at Tables III-5 and IV-5. We observe that the industry's total shipments were lower in interim 2016 than in interim 2015, notwithstanding a *** rise in export shipments. We also note that Respondents' argument regarding declines in the domestic industry's internal consumption does not recognize that internal consumption accounted for a minimal share of the U.S. industry's shipments. CR/PR at Table III-5.

Respondents also argued that the domestic like product has significant lead time advantages, which makes subject imports less valuable.[109] We recognize that there were an equal number of U.S. purchasers that reported the domestic like product as being superior and comparable with the subject imports in terms of lead time, but fewer U.S. purchasers reported delivery time as very important in purchasing decisions as compared to other factors, including price.[110] Additionally, subject imports have been kept in U.S. importer inventory starting in 2015 through a distributor, *** which reduces the domestic industry's advantage in terms of lead time.[111] In any event, any lead time advantages for the domestic product do not explain why subject imports gained market share at the expense of the domestic industry.

Finally, we are not persuaded by Respondents' argument that the reason for J.W. Harris purchasing subject imports was to diversify its supply sources.[112] Throughout the period of investigation, the domestic industry, which consisted of three different producers, had excess capacity and the record does not indicate there were domestic supply limitations.[113] Additionally, this alleged purchasing strategy does not explain the significant underselling by subject imports.[114]

We therefore find that subject imports had a significant impact on the domestic industry.

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[109] Respondents' Prehearing Brief at 5; Respondents' Posthearing Brief, Exh. 1. *** percent of U.S. producers' commercial shipment are produced to order with average lead times of *** days. The remaining *** percent are sold out of inventory with average lead times of *** days. Importer Bongsan indicated all of the subject imports from Korea was sold on a produced-to-order basis with an average lead time of *** days. CR at II-14 to II-15; PR at II-9.

[110] CR/PR at Tables II-7 and II-9.

[111] CR/PR at Table VII-4. There were no U.S. importers inventories of subject imports in 2013 and 2014. *Id*.; *see also* Hearing Tr. at 80 (Goodman) and 85 (Pickard).

[112] Hearing Tr. at 96-97 and 118 (Cavanaugh). *See also* Respondents' Posthearing Brief at 10 and Response to Commissioners' Questions at 23 and 39-40.

[113] CR at II-8; PR at II-5; CR/PR at Table III-4.

[114] Respondents alleged that the premiums offered by domestic producers ***. Respondents' Posthearing Brief, Responses to Commissioners' Questions at 31, Exh. 1, and Attachment 3; Hearing Tr. at 104 (Lutz). We are not persuaded by this allegation and do not find that the record substantiates this speculative claim. The Respondents raised this issue for the first time in the posthearing brief and the only real evidence submitted to support the claim appears to be ***. Respondents' Posthearing Brief, Responses to Commissioners' Questions at 3, Exh. 1, and Attachment 3. Given that phosphor copper prices are tied to indexed copper prices, it is not surprising that ***. Indeed, Respondents separately noted that the price of domestically produced phosphor copper and the price of subject imports were "***." Respondents' Posthearing Brief, Responses to Commissioners' Questions at 7. Moreover, the record indicates that there were variations in the premiums paid to domestic producers throughout the period of investigation. *See, e.g.*, CR/PR at Tables VI-2 and D-1.

V. Conclusion

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

PART I: INTRODUCTION

BACKGROUND

This investigation results from a petition filed with the U.S. Department of Commerce ("Commerce") and the U.S. International Trade Commission ("USITC" or "Commission") by Metallurgical Products Company ("Metallurgical Products"), West Chester, Pennsylvania, on March 9, 2016, 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 phosphor copper [1] from Korea. The following tabulation provides information relating to the background of this investigation.[2] [3]

Effective date	Action
March 9, 2016	Petition filed with Commerce and the Commission; institution of Commission investigation (81 FR 13822, March 15, 2016)
March 29, 2016	Commerce's notice of initiation (81 FR 19552, April 5, 2016)
April 26, 2016	Commission's preliminary determination (81 FR 25714, April 29, 2016)
August 5, 2016	Commerce's postponement of preliminary determination of antidumping duty investigation (81 FR 51858, August 5, 2016)
October 14, 2016	Commerce's preliminary determination of sales at less than fair value (81 FR 71049, October 14, 2016)
October 14, 2016	Scheduling of final phase of Commission investigation (81 FR 78852, November 9, 2016)
October 27, 2016	Commerce's postponement of final determination of sales at less than fair value (81 FR 74763, October 27, 2016)
February 28, 2017	Commission's hearing
March 3, 2017	Commerce's final determination (82 FR 12433, March 3, 2017)
March 30, 2017	Commission's vote
April 17, 2017	Commission's views

[1] See the section entitled "The Subject Merchandise" in *Part I* of this report for a complete description of the merchandise subject to this/these investigation(s).

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

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

STATUTORY CRITERIA AND ORGANIZATION OF THE REPORT

Statutory criteria

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

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

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

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

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

domestic industry, including efforts to develop a derivative or more advanced version of the domestic like product, and (V) in {an antidumping investigation}, the magnitude of the margin of dumping.

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

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

Organization of report

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

Phosphor copper is generally used as a deoxidizer, as an alloying element, and in brazing alloys. There are three U.S. producers of phosphor copper: petitioner Metallurgical Products; Milward Alloys, Inc. ("Milward Alloys"); and H. Kramer & Co. ("H. Kramer"). There is one Korean producer of phosphor copper, Bongsan Co. Ltd. ("Bongsan"). There are four importers of phosphor copper: Bongsan Co. Ltd. ("Bongsan"); Lucas-Milhaupt Inc. ("Lucas-Milhaupt"); Totall Metal Recycling ("Totall"), and KBM Affilips ("KBM") which combined, account for essentially all known subject and the small quantity of nonsubject imports. U.S. purchasers of phosphor copper include firms that manufacture copper tube or brazing alloys; leading purchasers include ***.

Apparent U.S. consumption of phosphor copper totaled approximately *** in 2015. U.S. producers' U.S. shipments of phosphor copper totaled *** pounds (***) by quantity in 2015, accounting for *** percent of apparent U.S. consumption by quantity, and *** percent by value. U.S. imports from Korea totaled *** in 2015 and accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value. U.S. imports from nonsubject sources

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

were not present in 2014 and 2015, but accounted for *** percent by quantity and value of apparent U.S. consumption in 2013.

SUMMARY DATA AND DATA SOURCES

A summary of data collected in this investigation is presented in appendix C, table C-1. Except as noted, U.S. industry data are based on questionnaire responses of three firms that accounted for 100 percent of U.S. production of phosphor copper during 2015. U.S. imports are based on the questionnaire responses of four importers that accounted for virtually all known imports of subject phosphor copper in 2015. Foreign industry data are based on the questionnaire data of the sole Korean producer of phosphor copper.

PREVIOUS AND RELATED INVESTIGATIONS

Phosphor copper has not been the subject of any prior trade remedy investigation in the United States.

NATURE AND EXTENT OF SALES AT LTFV

Sales at LTFV

On October 14, 2016, Commerce published a notice in the *Federal Register* of its preliminary determination of sales at LTFV with respect to imports of phosphor copper from Korea.[6] On March 3, 2017, Commerce published a notice in the Federal Register of its affirmative final determination of sales at LTFV with respect to imports of phosphor copper from Korea.[7] Table I-1 present Commerce's dumping margins with respect to imports of product from Korea.

Table I-1
Phosphor copper: Commerce's preliminary and final weighted-average LTFV margins with respect to imports from Korea

Exporter	Producer	Preliminary dumping margin (percent)	Final dumping margin (percent)
Bongsan Co., Ltd.	Bongsan Co., Ltd.	3.79	8.43
All others		3.79	8.43

Source: 81 FR 71049, October 14, 2016; 82 FR 12433, March 3, 2017.

[6] *Phosphor Copper From the Republic of Korea: Affirmative Preliminary Determination of Sales at Less Than Fair Value, Negative Preliminary Determination of Critical Circumstances*, 81 FR 71049, October 14, 2016.

[7] *Phosphor Copper From the Republic of Korea: Final Affirmative Determination of Sales at Less Than Fair Value, Negative Final Determination of Critical Circumstances*, 82 FR 12433, March 3, 2017.

THE SUBJECT MERCHANDISE

Commerce's scope

Commerce has defined the scope of this investigation as follows:

> *The merchandise covered by this investigation is master alloys[8] of copper containing between five percent and 17 percent phosphorus by nominal weight, regardless of form (including but not limited to shot, pellet, waffle, ingot, or nugget), and regardless of size or weight. Subject merchandise consists predominantly of copper (by weight), and may contain other elements, including but not limited to iron (Fe), lead (Pb), or tin (Sn), in small amounts (up to one percent by nominal weight). Phosphor copper is frequently produced to JIS H2501 and ASTM B–644, Alloy 3A standards or higher; however, merchandise covered by this investigation includes all phosphor copper, regardless of whether the merchandise meets, fails to meet, or exceeds these standards.*
>
> *Merchandise covered by this investigation is currently classified in the Harmonized Tariff Schedule of the United States (HTSUS) under subheading 7405.00.1000. This HTSUS subheading is provided for convenience and customs purposes; the written description of the scope of this investigation is dispositive.[9]*

Tariff treatment

Based upon the scope set forth by the Department of Commerce, information available to the Commission indicates that the merchandise subject to this investigation is classifiable in the following provisions of the 2017 HTS: 7405.00.10, if the phosphorus content is greater than 5 percent but not greater than 15 percent by weight, and 2853.90.10, if the phosphorus content is greater than 15 percent by weight.[10] Imports classifiable in 7405.00.10 are free of duty when they are the product of normal trade relations (NTR) countries, including Korea. The NTR rate of duty for 2853.90.10 is 2.6 percent ad valorem; however, U.S. imports from Korea that qualify for the preferential rate of duty under the United States-Korea Free Trade

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[8] A ''master alloy'' is a base metal, such as copper, to which a relatively high percentage of one or two other elements is added.

[9] *Phosphor Copper From the Republic of Korea: Final Affirmative Determination of Sales at Less Than Fair Value and Negative Final Determination of Circumstances*, 82 FR 12433, March 3, 2017.

[10] Effective January 1, 2017, HTS subheading 2848.00.10 was deleted and replaced by subheading 2853.90.10, and the related note in chapter 74, note 1(c), was modified as well. See Presidential Proclamation 9549 of December 1, 2016: To Modify the Harmonized Tariff Schedule of the United States and for Other Purposes (81 F.R. 87401), and annexes contained in USITC Publication 4653.

Agreement are eligible for duty-free entry.[11] The United States-Korea Free Trade Agreement entered into force in 2012.

Currently all reported imports of phosphor copper enter the United States under HTS 7405.00.10. HTS 2853.90.10 applies to phosphides of copper and the petitioner's arguments that this is a separate product are included in the "Domestic Like Product Issues" section. No U.S. imports were reported under HTS 2853.90.10.

THE PRODUCT

Description and applications

Phosphor copper is composed primarily of copper (Cu) and phosphorus (P), but may contain small amounts of iron, lead, tin, and other elements. Domestic phosphor copper is generally produced to Japanese Industrial Standard (JIS) H2501 (table I-2) and to American Society for Testing and Materials (ASTM) B-644, Alloy 3A standards (table 1-3).[12] Phosphor copper is a master alloy, which is not suitable for further working into other products (i.e., it is not "usefully malleable"),[13] but rather is used as an additive in the manufacture of other alloys or as a deoxidizing agent. Phosphor copper has different physical and chemical characteristics than copper. Copper contains either no phosphorus or has phosphorus content of less than 1 percent by weight.[14]

[11] Decisions on the tariff classification and treatment of imported goods are solely within the authority of U.S. Customs and Border Protection.

[12] Petition, p. 9.

[13] USITC, *HTSUS*, Chapter 74, Copper and Articles Thereof, Notes, (c) Master alloys, 2016. Petition, Exhibit I-7.

[14] Telephone interview with ***, March 28, 2016.

Table I-2
Phosphor copper: Japanese Industrial Standard (JIS) H-2501-1982

Grade	Class	Designation	Chemical composition (percent)					Application examples
					Impurities			
			P	P+Cu	Iron	Lead	Tin	
1	A	15 P Cu A	14.5 min.	99.75 min.	0.05 max.	0.01 max.	0.01 max.	Principally as a deoxidizer, phosphor additive, etc., to wrought copper and copper alloy materials.
	B	15 P Cu B	14.0 min.	99.75 min.	0.15 max.	-----	-----	Principally as a deoxidizer, phosphor additive, etc., to copper and copper alloy castings.
2	-----	10 P Cu	10.0–11.0	99.75 min.	0.15 max.	-----	-----	Lower melting point than Grade 1. A deoxidizer, phosphor additive, etc., to wrought materials and castings of copper and copper alloys.
3	-----	8 P Cu	8.0–9.0	99.75 min.	0.15 max.	-----	-----	Microalloying element applications, etc., to high-silicon aluminum alloy castings.

Source: JIS, "H-2501-1982 (Reaffirmed 1993), Phosphor Copper Metal," Table 1 Grade and Class and Table 2 Chemical Compositions. Petition, Exhibit I-4.

Table I-3
Phosphor copper: American Society for Testing and Materials (ASTM) B-644-95 Standards

Alloy	Composition (percent)		
	Phosphorus	Phosphorus + Copper	Iron
3A	14.0 min.	99.75 min.	0.15 max.
3B	8.0–8.8	99.75 min.	0.15 max.

Source: ASTM, "B-644-95, Standard Specification for Copper Alloy Addition Agents," Table 1 Chemical Requirements. Petition, Exhibit I-5.

Phosphor copper has three primary uses: (1) as a deoxidizer; (2) as an alloying additive that increases strength, hardness, and elasticity; and (3) in brazing alloys. Used as a deoxidizer, the phosphorus component of the phosphor copper reacts with oxides in the copper alloy that could otherwise weaken the alloy through the process of hydrogen embrittlement. As an alloying additive, phosphor copper improves the workability of the copper and allows, for example, the copper alloy to be drawn into a tube.[15] Brazing is a method of joining pieces of metal. A brazing alloy must have a melting temperature below the melting temperature of the metal pieces being joined and must easily flow to fill the gap between the metal pieces, known as "wetting." The phosphorus in the brazing alloy both lowers the melting temperature and improves the wettability of the alloy. Brazing alloys contain higher levels of phosphorus than other products made using phosphor copper.[16] Phosphor copper is used by copper tube manufacturers, brazing rod manufacturers, brass mills, foundries, and in products that are produced by copper and brass melting.[17]

[15] Conference transcript, p. 34 (Goodman).
[16] Telephone interview with ***, March 28, 2016.
[17] Petition, vol. I, p. 4.

Phosphor copper, as it is most commonly sold, contains approximately 15 percent phosphorus by weight. According to conference testimony, 15 percent by weight is the highest possible concentration of phosphorus because that is the maximum solubility of phosphor in copper.[18] There is a small market for phosphor copper that is 8 percent phosphorus by weight. The 8 percent phosphorus product is used to manufacture certain aluminum-silicon alloys to improve the strength of those alloys.[19] The melting point of the 8 percent phosphor copper product is lower than for the 15 percent product and closer to the melting temperature of the aluminum alloy. The lower melting temperature of the 8 percent product makes it more useable in that particular aluminum alloy.[20]

Phosphor copper is sold in the form of shot or ingots.[21] Shot consists of small pellets of phosphor copper, typically a few millimeters in diameter. Ingot is often made in a "waffle" casting, which imparts a grid of crossed indentations onto the top surface of the ingot where it can be easily broken into smaller pieces. Both shot and ingot typically are loaded into steel drums and shipped by truck.[22]

Manufacturing processes

The raw materials used to make phosphor copper are copper and phosphorus. High-grade refined copper scrap is loaded into an electrical induction furnace and heated until molten. The phosphorus is separately heated to a molten state and then injected into the bottom of the furnace containing the molten copper. The molten phosphorus dissolves into the copper as it bubbles up to the surface. Excess phosphorus that escapes to the surface of the molten alloy reacts with oxygen in the air to form phosphor pentoxide.[23] The phosphor pentoxide is scrubbed from the air using water to form phosphoric acid. The phosphoric acid is concentrated and sold to fertilizer manufacturers.[24] The equipment that handles the phosphoric acid must be acid-resistant and, therefore, be made of stainless steel, which increases its cost.[25]

Once enough phosphorus has been added to reach the 15 percent-by-weight content, the molten alloy is either poured into a water bath to form shot or into molds to form ingots. After the shot or ingots cool, they are packaged into steel drums for storage and shipment. The 8 percent phosphor product is made in a similar way, but with less phosphorus added so the concentration does not exceed 8 percent by weight. The Korean producer of phosphor copper and other producers throughout the world likely make phosphor copper by this same process.[26]

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[18] Preliminary phase conference transcript, p. 29 (Goodman).
[19] Preliminary phase conference transcript, p. 58 (Goodman).
[20] Preliminary phase conference transcript, p. 59 (Goodman).
[21] Preliminary phase conference transcript, p. 10 (Goodman).
[22] Preliminary phase conference transcript, p. 20 (Goodman).
[23] Telephone interview with ***, March 28, 2016.
[24] Conference transcript, p. 11 (Goodman).
[25] Conference transcript, p. 20 (Goodman).
[26] Telephone interview with ***, March 28, 2016.

DOMESTIC LIKE PRODUCT ISSUES

The Commission's decision regarding the appropriate domestic product(s) that are "like" the subject imported product is based on a number of factors including: (1) physical characteristics and uses; (2) common manufacturing facilities and production employees; (3) interchangeability; (4) customer and producer perceptions; (5) channels of distribution; and (6) price. Information regarding these factors is discussed below.

Petitioners proposed that the Commission should define the like product as co-extensive with the scope of this investigation.[27] In the preliminary phase, the Commission considered whether the definition of the domestic like product should include copper phosphide, and found it should not be included. Petitioner noted that it does not produce copper phosphide and has only limited information regarding the product and industry.[28]

The Commission found the domestic like product to be coextensive with Commerce's scope in the preliminary phase of this investigation. Specifically, the Commission concluded:

> The record in the preliminary phase of this investigation indicates that there is a clear dividing line between phosphor copper and copper phosphide. We thus do not define the domestic like product more broadly than the scope of investigation to include copper phosphide. The evidence in the record, albeit limited, indicates that phosphor copper and copper phosphide are distinct products, both physically and chemically, have different end uses, are not interchangeable, are sold through distinct channels of distribution, and have distinct manufacturing facilities and procedures. Accordingly, we find that there is a single domestic like product coextensive with the scope of the investigation.[29]

Neither the petitioner nor Korean respondent provided additional comments or requests for data specifically concerning the domestic like product.

Physical characteristics and uses

The Commission found that phosphor copper and copper phosphide differ in at least three ways. First, they are sold in different forms. Phosphor copper is sold as shot or ingots, while copper phosphide is sold as powder.[30] Second, they have distinctly different chemical formulas. Phosphor copper's chemical formula is CuP, and the chemical formula for copper

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[27] Petitioner's postconference brief, p.2.; *Phosphor Copper from Korea, Inv. No. 731-TA-1314 (Preliminary),* USITC Publication 4608, May 2016, pp. 6-7.

[28] Petitioner's Supplemental Submission Regarding Scope and Domestic Like Product to the Department of Commerce, p. 4 n.3, March 22, 2016.

[29] *Phosphor Copper from Korea, Inv. No. 731-TA-1314 (Preliminary),* USITC Publication 4608, May 2016, p. 7.

[30] Petitioner's postconference brief, Exhibit 1, p. 2.

phosphide is Cu_3P or Cu_3P_2. Third, the products have distinctly separate Chemical Abstract Service (CAS) registry numbers. The CAS number for phosphor copper is 12517-41-8, and CAS numbers for copper phosphide are 12019-57-7 and 12643-19-5.[31]

The Commission also found that phosphor copper has different uses than copper phosphide. Phosphor copper is primarily used as a deoxidizer, as an alloying additive, or in brazing alloys. Copper phosphide is used as a semiconductor in high-power and high-frequency applications, laser diodes, and batteries.[32]

Manufacturing facilities and production employees

The Commission found phosphor copper involves a separate and distinct production process from that of copper phosphide.[33] ***.[34]

Interchangeability

The Commission found that phosphor copper does not appear to be interchangeable with copper phosphide. None of the responding importers lists copper phosphide as a substitute for phosphor copper.[35] Also, producers of phosphor copper do not produce copper phosphide and vice versa.[36]

Customer and producer perceptions

The Commission stated that because of differences in the chemical and physical characteristics between phosphor copper and copper phosphide, consumers and producers do not perceive these products as interchangeable.[37] Furthermore, domestic producers of phosphor copper do not advertise that they produce copper phosphide since they do not produce it.[38]

Channels of distribution

The Commission found that producers of copper phosphide appear to sell to different customers than the copper tube manufacturers and brazing rod manufacturers who are the traditional purchasers of phosphor copper.[39] Therefore, the products appear to have distinct channels of distribution.

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[31] Petitioner's postconference brief, Exhibit 1, p. 3.
[32] Petitioner's postconference brief, Exhibit 1, pp. 3–4.
[33] *Phosphor Copper from Korea, Inv. No. 731-TA-1314 (Preliminary),* USITC Publication 4608, May 2016, pp. 6-7.
[34] Ibid.
[35] Ibid.
[36] Ibid.
[37] Ibid.
[38] Petitioner's postconference brief, Exhibit 1, p. 6.
[39] Petitioner's postconference brief, Exhibit 1, p. 5.

Price

Pricing data were not collected for copper phosphide. Accordingly, the Commission had no evidence on the record suggesting that phosphor copper and copper phosphides are not distinguishable on the basis of price.[40]

[40] Petitioner's postconference brief, Exhibit 1, p. 7.

PART II: CONDITIONS OF COMPETITION IN THE U.S. MARKET

U.S. MARKET CHARACTERISTICS

Phosphor copper is an alloy of copper and phosphorous designed to metallurgically supply phosphorous to copper users (especially manufacturers of copper tube and brazing alloys).[1] Apparent U.S. consumption of phosphor copper was mostly unchanged during 2013-2015, rising nearly *** percent between 2013 to 2014 before returning to near its 2013 level in 2015 based on quantity.

U.S. producer Metallurgical Products described the U.S. phosphor copper market as being competitive among the three U.S. producers until 2011-12, when its customer J.W. Harris began purchasing Korean phosphor copper. In 2015, another customer, Lucas-Milhaupt, began purchasing Korean product and importer Totall Metal Recycling, began distributing Korean product to U.S. customers.[2]

U.S. producers and importers were asked to list their ten largest customers for phosphor copper in 2015. ***.[3] ***.[4]

Two producers and two importers reported that there had been no changes in the product range, mix, or marketing of phosphor copper since January 1, 2013. However, *** indicated that there had been aggressive pricing by Korean imports, and *** indicated that there had been large price increases by domestic producers.

CHANNELS OF DISTRIBUTION

U.S. producers and importers sold mainly to ***, as shown in table II-1. Four firms (***) submitted importers' questionnaires but only ***. ***.

[1] Conference transcript, p. 10 (Goodman), and petitioner's postconference brief, p. 10.
[2] Hearing transcript, p. 20 (Goodman).
[3] *** did not list its top customers.
[4] See Email from ***.

Table II-1
Phosphor copper: U.S. producers' and importers' U.S. commercial shipments, by sources and channels of distribution, 2013-2015, January-September 2015, and January-September 2016

* * * * * * *

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GEOGRAPHIC DISTRIBUTION

U.S. producers reported selling phosphor copper to *** (table II-2). ***. For U.S. producers, *** percent of sales were within 100 miles of their production facility, *** percent were between 101 and 1,000 miles, and *** percent were over 1,000 miles. Importer *** reported selling *** of its phosphor copper imported from Korea *** of its U.S. point of shipment, whereas importer *** sold ***.

Table II-2
Phosphor copper: Geographic market areas in the United States served by U.S. producers and importers of product from Korea

* * * * * * *

SUPPLY AND DEMAND CONSIDERATIONS

U.S. supply

Domestic production

Based on available information, U.S. producers of phosphor copper have the ability to respond to changes in demand with large changes in the quantity of shipments of U.S.-produced phosphor copper to the U.S. market. The main contributing factors to this degree of responsiveness of supply are the availability of unused capacity and the existence of alternate markets, but U.S. producers' responses are somewhat constrained by low levels of inventories and limited ability to produce alternate products.

Industry capacity

Domestic capacity utilization increased from *** percent in 2013 to *** percent in 2014 before decreasing to *** percent in 2015. Capacity utilization was also lower in January-September 2016 (*** percent) compared with January-September 2015 (*** percent). Capacity remained constant between January 2013 and September 2016. The relatively low level of capacity utilization suggests that U.S. producers may have substantial ability to increase production of phosphor copper in response to an increase in prices.

Alternative markets

U.S. producers' exports, as a percentage of total shipments, decreased during 2013-15, but remained above *** percent of total shipments; they accounted for *** percent of total shipments in 2013, but decreased to *** percent of total shipments in 2015. Export shipments' share was *** in interim 2016 than in interim 2105 (***). This *** share of export shipments in total shipments indicates that U.S. producers may have a moderate-to-large ability to shift shipments between the U.S. market and other markets in response to price changes.

Metallurgical Products stated that export markets demand the same types of phosphor copper as the U.S. market.[5] It added that its main competitors for export sales are a European producer and Bongsan.[6]

Inventory levels

U.S. producers' end-of-period inventories declined from 2013 to 2015; as a share of total shipments, however, they fluctuated. Inventories accounted for *** percent of U.S. shipments in 2013, *** percent in 2014, and *** percent in 2015. Although this share was *** percent at the end of the third quarter of 2015, it was *** percent at the end of 2016's third quarter. These inventory levels suggest that U.S. producers may have limited ability to respond to changes in demand with changes in the quantity shipped from inventories.

Production alternatives

*** of three responding U.S. producers stated that *** could not switch production from phosphor copper to other products. *** stated that *** could switch to ***. *** stated that it takes about ***. It added that demand for these other products was not sufficient to sustain its operations.

[5] Conference transcript, pp. 87-88 (Goodman).
[6] Conference transcript, pp. 75-77 (Goodman).

Subject imports from Korea[7]

Based on available information, the Korean producer of phosphor copper has the ability to respond to changes in demand with small-to-moderate changes in the quantity of shipments of phosphor copper to the U.S. market. The main contributing factors to this degree of responsiveness of supply ***.

Petitioner Metallurgical Products stated that imports from Korea began with direct sales to end users J.W. Harris in 2011-12 and then Lucas-Milhaupt in 2015. It continued that in 2015, Totall Metal Recycling, a distributor, began importing phosphor copper from Korea for resale to customers.[8]

Industry capacity

*** reported increasing capacity utilization rates increased from *** percent in 2013 to *** percent in 2015. Capacity utilization in the first three quarters of 2016 was *** percent, compared with *** percent during the same months of 2015. Few other products were produced *** using the same equipment and workers, leading to overall production capacity utilization not differing much from the levels for just phosphor copper. However, petitioner Metallurgical Products described the Bongsan facility in Korea as using the same production process as the petitioner's facility, and as having substantial excess capacity.[9]

Alternative markets

*** reported that exports to countries other than the United States represented the largest share of its total shipments (between *** percent in 2013-15), followed closely by shipments to its home market (between *** percent in 2013-15). *** exports to the United States increased between 2013 and 2015, from *** percent in 2013 and *** percent in 2015. Exports to the United States were lower in interim 2016 (*** percent), compared with interim 2015 (*** percent). Petitioner stated that Korean producer Bongsan "captured" the entire Korean market, was supported by past Korean tariffs, and now is expanding into export markets.[10] It added that Bongsan is related to some of its Korean customers.[11] Korean export levels indicate that Bongsan may have some ability to shift shipments between domestic or other markets and the U.S. market in response to price changes.

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[7] Petitioner indicated that there is only one Korean producer of phosphor copper. For more information, please refer to Part I, "Summary Data and Data Sources" and petition, p. 2.

[8] Conference transcript, pp. 15, 48-49 (Goodman). See also petitioner's postconference brief at pp. 9-11.

[9] Conference transcript, p. 17 (Goodman).

[10] Conference transcript, p. 8 (Neelakantan).

[11] Conference transcript, p. 79 (Goodman). ***. Petitioner's postconference brief, answers to staff questions, pp. 15 and 18.

Inventory levels

Over 2013-15, ***.

Production alternatives

***.

Nonsubject imports

Korea was the predominant import source for phosphor copper in the U.S. market over 2013-2015. Based on official statistics for HTS 7405.00.10.00, other import sources included China, India, Japan, Belgium, and Luxembourg, but Korean imports accounted for *** percent of shipments of imports over January 2013-September 2016 and were at least *** percent of shipments each year.[12] This HTS subheading may include other master alloys, however. Based on importer questionnaires received, there were no nonsubject imports of phosphor copper in 2014 and 2015, and nonsubject imports accounted for approximately *** percent of phosphor copper imports in 2013 and *** percent in 2016.

Supply constraints

U.S. producers *** stated that they had not been experienced any supply constraints since January 1, 2013. However, U.S. producer *** stated that lower prices for phosphor copper had created cash-flow problems that, in turn, had led to its vendors tightening credit offered.[13] Three of four importers and 12 of 13 purchasers reported no supply constraints in the phosphor copper market since 2013.[14]

U.S. demand

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

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[12] USITC Dataweb for HTS subheading 7405.00.10.00

[13] Metallurgical Products stated that it was not aware of any supply disruptions for itself or its competitors. Conference transcript, pp. 41-42 (Goodman).

[14] In describing the supply constraint, importer *** described the supply constraint as a "price constraint."

End uses

Phosphor copper is used as a deoxidizer and as an alloying additive (to increase strength, hardness, and elasticity). It is also used in brazing alloys to lower the melting temperatures and improve wetting characteristics. Phosphor copper has the ability to conduct heat, so it can be used as a conductor in electrical wires, roofing and plumbing applications, and in industrial machinery, such as HVAC appliances.[15] The largest end-use segment is copper tubing, followed by brazing rods and alloys, and then other specialty copper uses.[16] Additionally, some aluminum end uses account for a small share of total phosphor copper shipments.[17]

Metallurgical Products stated that while U.S. producer Milward Alloys has indicated that it produces phosphor copper for brazing uses, all three U.S. producers generally produce phosphor copper for all end uses.[18] However, ***.[19]

Consumers make their purchasing decisions based primarily on the phosphorous level contained in the product.[20] Copper products producers prefer phosphor copper with the maximum phosphorous content chemically possible (about 15 percent), while aluminum products producers prefer phosphor copper with an 8 percent phosphorous content because it allows adding phosphorous while maintaining the low required melting temperature.[21]

U.S. producers, importers, and purchasers were asked about the differences in uses for 8 percent phosphor versus 15 percent phosphor copper. *** indicated that there were differences, elaborating that while 15 percent phosphor copper is used in copper tubing and brazing applications, 8 percent phosphor copper is used by the aluminum industry as a grain refiner.[22] *** also noted that 15 percent phosphor copper is used in the brazing rod industry and 8 percent is used primarily in copper alloy industries. *** stated that 8 percent phosphor copper is used as a wetting agent in brazing rod, whereas 15 percent phosphor copper is used as a deoxidant to remove oxygen from copper baths and as a grain size modifier in silicon-aluminum castings. Both responding importers and four of seven responding purchasers also reported that there are differences between the two types.[23] Most purchasers only use one

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[15] Petition, p. 4. "HVAC" stands for heating, ventilating, and air conditioning.

[16] Conference transcript, p. 34 (Goodman). See also staff interview with ***.

[17] Conference transcript, p. 60 (Goodman). ***. Petitioner's postconference brief, answers to staff questions, p. 12.

[18] Conference transcript, p. 36 (Goodman). Additionally, Metallurgical Products indicated that its share of sales to each end-use segment is ***. Petitioner's postconference brief, answers to staff questions, p. 8.

[19] Staff interview with ***, March 28, 2016.

[20] Hearing transcript, p. 100 (Cavanaugh).

[21] Conference transcript, pp. 29 and 58-59 (Goodman).

[22] Metallurgical Products explained that grain refining shrinks the "grain" of the aluminum, making it stronger. Conference transcript, pp. 58-59 (Goodman).

[23] In addition, three purchasers did not respond "yes" or "no" but did describe their use of 8 percent or 15 percent phosphor copper.

type, except purchaser ***, which uses 8 percent as *** and 15 percent as ***. Purchasers *** stated that they would need to use more 8 percent phosphor copper in their applications in order to match the 15 percent phosphor copper it currently uses. Purchaser ***'s internal specifications restrict it to using only 8 percent phosphor copper.

Cost share

U.S. producers, importers, and purchasers mostly reported cost shares for brazing rod and copper tubing end uses. Producer *** indicated that phosphor copper was *** percent of the cost of copper tubing but *** percent of the cost of brazing rods whereas *** listed phosphor copper as accounting for *** percent of the cost of copper tubing, brazing rods, and brass and bronze foundry products. Importer *** indicated that phosphor copper accounts for *** percent of the cost of phosphor brazing rod, *** percent of the cost of silver phosphor brazing rod, and *** percent of the cost of other copper products.

Nine purchasers listed end uses where phosphor copper accounted for 1 percent or less of the cost, including: brass couplings, brass expansion connections, brass rod, bronze powder with phosphorus, copper billets, copper base castings, copper strip for air conditioning tubing, copper water tube pipe and coils, copper refrigeration coils, copper tube, and powder blend additives. Purchaser *** listed three types of brazing rod specifications for which phosphor copper represented between *** percent of the cost of the brazing rods, and purchaser *** listed three types of *** specifications for which phosphor copper represented between *** percent of the cost of the end-use product. Purchaser *** indicated that phosphor copper accounted for *** percent of the cost of its ***.

Business cycles

One of 3 U.S. producers, 3 of 4 U.S. importers, and 8 of 12 responding purchasers indicated that the phosphor copper market was not subject to distinctive business cycles or conditions of competition; three purchasers indicated distinct business cycles and one indicated distinct conditions of competition. Producer *** indicated that the Korean producer has aggressively targeted the United States and other markets, while producer *** noted that it has had to lower its prices to compete with U.S. and foreign prices. Purchaser *** stated that *** sales follow the HVAC construction/replacement market.[24]

Two producers, one importer, and one purchaser noted changes in business cycles or conditions of competition. Producer *** reported some relief due to the preliminary antidumping duties, and producer *** stated that its competitors quote lower prices and meet competitors' prices to maintain market share. Among the changes since January 2013, *** stated that it has witnessed "***." Purchaser *** stated that demand has decreased.

[24] In the preliminary phase, *** also stated that demand for phosphor copper increases in the summer months as HVAC demand increases, ***.

Demand trends

Firms reported different descriptions of U.S. demand for phosphor copper since January 1, 2013 (table II-3). Despite three purchasers reporting increased demand for their phosphor copper-containing end-use products, no producer, importer, or purchaser described increasing demand for phosphor copper.[25] *** reported that data from the Copper Development Association show that consumption of copper by U.S. copper-using industries had not changed,[26] but added that data from the International Copper Study Group showed that global copper usage, excluding China, had fallen 4 percent in the first 11 months of 2015. Regarding both domestic and foreign demand, purchaser *** stated that increasing use of aluminum in HVAC applications as well as decreased commercial construction activity had reduced demand for phosphor copper. U.S. producer *** stated that some copper tubing sales is being affected by sales of PVC tubing, which could affect demand for phosphor copper.

Table II-3
Phosphor copper: Firms' responses regarding U.S. demand and demand outside the United States

Item	Increase	No change	Decrease	Fluctuate
Demand in the United States				
U.S. producers	0	2	1	1
Importers	***	***	***	***
Purchasers	0	4	2	2
Demand outside the United States				
U.S. producers	0	0	1	1
Importers	***	***	***	***
Purchasers	0	3	0	0
Demand for end-use products				
Purchasers	3	4	5	2

Note.--Producer *** noted both "no change" and "fluctuate."

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

Substitute products

All responding producers and importers, and 12 of 13 purchasers reported that there were no substitutes for phosphor copper. *** indicated that lithium, aluminum, and boron could be used as substitutes in the manufacture of brass valves and fittings.

[25] Seven of 13 purchasers indicated that demand for phosphor copper does not change with demand for phosphor copper-containing end-use products. Purchaser *** stated that it does not because of a more efficient manufacturing process. Among the five purchasers that noted that the two move in tandem, *** stated that demand is linked directly to sales of air conditioning tubing demand.

[26] ***. ***.

SUBSTITUTABILITY ISSUES

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

Lead times

U.S. producers reported that *** percent of their commercial shipments were produced-to-order, with lead times averaging *** days. The remaining *** percent of their commercial shipments were from inventories, with lead times averaging *** days. Importer Bongsan indicated that all of the phosphor copper imported from Korea was sold *** and sold with an average lead time of *** days. All of importer Totall Metals' phosphor copper imported from Korea were ***. Most purchasers (7 of 13) buy phosphor copper on a monthly basis. Two purchase on an annual basis, two purchase a few times a year, one purchases quarterly, and one purchases on an as-needed basis. Three of the 13 purchasers have decreased their purchasing frequency since 2013.

Packaging

Producers, importers, and purchasers were asked what type of packaging they used for their sales or purchases of phosphor copper. Nearly all firms reported using drums to house the phosphor copper. Although the drum sizes ranged between 10 and 57 gallons, the 16-gallon and 55-gallon drums were the most common sizes. U.S. producer *** also reported shipping ***. Purchaser *** purchases domestic phosphor copper in returnable metal containers, while purchaser *** buys phosphor copper in a wooden box on a pallet. ***. *** reported using ***. *** indicated that it used ***. *** stated that it used ***.

Shot vs. ingot

Twelve of 13 responding purchasers reported buying phosphor copper in shot form, while five purchasers buy it in ingot/waffle form. *** was the only purchaser that solely buys phosphor copper in ingot/waffle form, noting that it is easier to put into its furnaces. Of the five purchasers that reported buying both types, *** stated that it buys both, *** stated that it buys both as required by its equipment, and *** only uses waffle when its phosphor copper levels are extremely low in its furnace. Purchasers *** indicated that they only purchases shot form because shot form is easily measured, changed, and/or added to the furnace to produce ***. U.S. producers, importers, and purchasers were asked about the interchangeability and cross-form price effects of the two main forms of phosphor copper (table II-4). Seven purchasers noted that shot form could "always" be used in place of ingot/waffle form, one purchaser noted that it could "frequently" do so, and three purchasers noted that they could "never" be

used in place of ingot/waffle form due to their manufacturing processes/equipment. Ten of 13 responding firms (including all 10 responding purchasers) reported that shot prices and waffle/ingot prices "never" affect each other. Only *** stated that the prices "sometimes" affect each other. Further, although 9 of 13 purchasers' phosphor copper transactions involve negotiations; only one purchaser indicated that price negotiations for one form of phosphor copper affects the price negotiations for the other form.[27]

Table II-4
Phosphor copper: Frequency of shot form vs. ingot/waffle form interchangeability and price effects

Item	Always	Frequently	Sometimes	Rarely	Never
How often shot form used in place of ingot/waffle form:					
U.S. producers	***	***	***	***	***
Importers	***	***	***	***	***
Purchasers	7	1	0	0	3
How often shot and ingot/waffle form prices affect each other:					
U.S. producers	***	***	***	***	***
Importers	***	***	***	***	***
Purchasers	0	0	0	0	7

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

Knowledge of country sources

Twelve purchasers indicated they had marketing or pricing knowledge of domestic phosphor copper, five of Korean product, and one purchaser each had knowledge of Chinese, German, and Japanese product. As shown in table II-5, half of purchasers (6 of 12) "sometimes" or "never" make purchasing decisions based on the producer and the other half "always" or "frequently" do. Most (9 of 12), however, "never" make purchasing decisions based on country of origin. Of the other responding purchasers, four "always" make purchasing decisions based on the producer (***), and two "always" do so based on country of origin. Purchaser *** considers price, quality, and packaging in these decisions and *** prefers to buy domestically for short lead times, reliable supply, and market price transparency. *** both "usually" make decisions based on the producer because of "price, quality, and delivery" for ***, and ***. Nearly all responding purchasers' customers "never" make purchasing decisions based on producer or country of origin. Purchaser *** replied "always" to both questions, noting that ***.

[27] Purchaser *** indicated that the prices for shot and waffle/ingot form are the same, so prices of each form may affect the other.

Table II-5
Phosphor copper: Purchasing decisions based on producer and country of origin

Purchaser/customer decision	Always	Usually	Sometimes	Never
Purchaser makes decision based on producer	4	2	2	4
Purchaser's customers make decision based on producer	1	0	2	6
Purchaser makes decision based on country	2	1	0	9
Purchaser's customers make decision based on country	1	0	0	8

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

Factors affecting purchasing decisions

The most often cited top-three factors firms consider in their purchasing decisions for phosphor copper were price (11 firms), quality (9 firms), and availability/delivery/lead time issues (7 firms). Firms identified a number of other factors as well (table II-6). Quality was most frequently cited as the most important factor, followed by price; price was the most frequently reported second-most important factor; and availability/delivery/lead time was the most frequently reported third-most important factor.

Table II-6
Phosphor copper: Ranking of factors used in purchasing decisions as reported by U.S. purchasers, by factor

Factor	First	Second	Third
Quality[1]	6	3	0
Price	3	6	2
Availability/delivery/lead time	1	2	4
Sizing	1	0	1
Service	1	0	0
Credit/financing	0	1	1
Other[2]	1	1	5

[1] In addition, one purchaser reported quality as a fourth factor, and another report that credit/financing was important in 2015, as well as availability.
[2] Other factors include: best value in service, continuity of supply, general ease of doing business, logistics/location, packaging, and traditional supplier/supplier relationship.

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

Six purchasers reported that they "sometimes" purchase the lowest-priced product, five "usually" do so, and one purchaser each indicated they either "always" or "never" do so. Seven purchasers also reported that they order phosphor copper from one country over other possible sources of supply despite that other country's product having a lower price. *** stated that it bases its decision on service, and *** stated that it purchases domestically to obtain a better lead time. *** buys from both domestic and Korean manufacturers based on source diversification, lead times, and pricing. *** sources from its sister company, though it noted that the price is similar among sources. Purchaser *** buys based on its ***. Finally, purchaser *** stated that sizing and packaging must meet its requirements; if they are met, then the decision is based on price. Four other purchasers reported that they only purchase domestically noting that there is "adequate supply so prefer to source local," it is "cost effective," or that

they "prefer to work with domestic producers because of their reliability. Their proximity to the plants gives us more confidence that deliveries will be timely."

All eight responding purchasers reported that there are no types of phosphor copper that are available only from a single source. Five of 13 purchasers reported buying imported phosphor copper from Korea instead of domestically produced phosphor copper since 2013, with all five noting that the imported product's price was lower. Four of seven responding purchasers indicated that U.S. producers had not decreased prices in order to compete with phosphor copper from Korea. For further detail, see Part V.

Importance of specified purchase factors

Purchasers were asked to rate the importance of 15 factors in their purchasing decisions (table II-7). The factors that were rated as "very important" by most of the responding purchasers were product availability, quality meets industry standards, price, product consistency, reliability of supply, delivery time, and packaging.

Table II-7
Phosphor copper: Importance of purchase factors, as reported by U.S. purchasers, by factor

Factor	Very important	Somewhat important	Not important
Availability	13	0	0
Delivery terms	4	8	1
Delivery time	8	4	1
Discounts offered	6	4	3
Extension of credit	2	7	4
Minimum quantity requirements	0	7	6
Packaging	7	4	2
Price	12	1	0
Product consistency	12	1	0
Product range	1	5	7
Quality meets industry standards	13	0	0
Quality exceeds industry standards	4	5	4
Reliability of supply	10	3	0
Technical support/service	3	2	8
U.S. transportation costs	4	4	5

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

Supplier certification

Phosphor copper is generally manufactured to meet JIS H2501 and ASTM B-644, Alloy 3A standards. Petitioner Metallurgical Products indicated that it is able to meet (and exceed) these specifications "easily."[28] It added that Korean product also meets or exceeds these industry specifications and is completely interchangeable with product from Metallurgical

[28] Petition p. 4, and exhibits I-4 and I-5. JIS is the Japanese Industry Standard and ASTM is the American Society for Testing and Materials. See also conference transcript, pp. 10 and 51 (Goodman).

Products.[29] It further stated that purchasers generally do not require certification beyond ASTM or JIS standards.[30]

U.S. producer Metallurgical Products' production facility has been ISO-certified[31] since 1996.[32] It stated that of the three U.S. producers, only H. Kramer is not ISO-certified. It continued that lack of ISO certification may mean more paperwork for a supplier but does not deter customers from buying from a supplier.[33]

Eleven of 13 purchasers require their suppliers to become certified or qualified to sell phosphor copper to their firm. Most of these purchasers reported that the time to qualify a new supplier ranged from 1 to 180 days,[34] with seven purchasers reporting qualification times of 14 days or less, with a median time of 10 days. The qualification process for phosphor copper focuses on ensuring that samples pass the purchaser's trial. Other factors noted include: credit, ISO certifications, lead time, producer capacity, quality, and reliability.

Changes in purchasing patterns

Purchasers were asked about changes in their purchasing patterns of phosphor copper from different sources since 2013 (table II-8). Most responding purchasers (7 of 12) reported constant purchases of domestically produced phosphor copper, and four reported increasing purchases of phosphor copper imported from Korea. Among those purchasers that purchased more phosphor copper imported from Korea, *** stated that it "tried and evaluated Korean product" and *** made "one purchase {} in 2015, none prior." Purchaser *** stated that it had a ***. For thos purchasers which reported changes in purchases of domestic phosphor copper, *** also reported increased domestic purchases due to ***. *** reported decreased domestic purchases due to "reduced usage and the purchase of Korean material in 2015," while *** reduced its purchases of domestic phosphor copper due to "no demand." *** decreased its purchases of phosphor copper citing lower demand for copper base castings, but did not know the country of origin of its supply.

Table II-8
Phosphor copper: Changes in purchase patterns from U.S., subject, and nonsubject countries

Source of purchases	Did not purchase	Decreased	Increased	Constant	Fluctuated
United States	0	3	1	7	1
Korea	5	0	4	1	0
All other countries	8	0	0	1	0
Sources unknown	8	1	0	0	0

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

[29] Conference transcript, p. 16 (Goodman).
[30] Conference transcript, p. 82 (Goodman).
[31] "ISO" stands for International Standards Organization.
[32] Conference transcript, p. 22 (Goodman).
[33] Conference transcript, pp. 55-56 (Goodman).
[34] "180 days" was noted as a "worst-case scenario" by one purchaser. The next longest qualification period was 90 days.

Five of 13 purchasers reported that they had changed suppliers since January 1, 2013. Specifically, *** added ***, and *** added a Korean supplier then stopped using it once this investigation started. Purchaser *** reported purchasing ***. Four purchasers reported Totall Metal Recycling entered the market since 2013.

Importance of purchasing domestic product

Nine of twelve purchasers reported that purchasing U.S.-produced product was not an important factor in their purchasing decisions. No purchaser reported that its phosphor copper purchases are required by law or by their customers. *** prefers domestic phosphor copper to maintain a simple supply chain; *** noted that it was not required, but had a preference for domestic product; and *** purchases domestic phosphor copper because it is cost effective.

Comparisons of domestic products, subject imports, and nonsubject imports

Purchasers were asked a number of questions comparing phosphor copper produced in the United States, Korea, and nonsubject countries. First, purchasers were asked for a country-by-country comparison on the same 15 factors (table II-9), for which they were asked to rate the importance.

Table II-9
Phosphor copper: Purchasers' comparisons among U.S.-produced and imported product

Factor	U.S. vs. Korea			U.S. vs. all other sources			Korea vs. all other sources		
	S	C	I	S	C	I	S	C	I
Availability	1	5	0	1	3	0	0	2	0
Delivery terms	1	5	0	0	4	0	0	2	0
Delivery time	3	3	0	2	2	0	0	2	0
Discounts offered	0	5	1	0	4	0	0	2	0
Extension of credit	0	5	1	0	3	1	1	1	0
Minimum quantity requirements	1	5	0	1	3	0	0	2	0
Packaging	1	5	0	0	4	0	0	2	0
Price[1]	0	1	5	0	2	2	2	0	0
Product consistency	0	6	0	1	3	0	0	2	0
Product range	0	5	0	0	4	0	0	2	0
Quality meets industry standards	0	6	0	0	4	0	0	2	0
Quality exceeds industry standards	0	6	0	0	4	0	0	2	0
Reliability of supply	2	4	0	1	3	0	0	2	0
Technical support/service	2	4	0	1	3	0	0	2	0
U.S. transportation costs[1]	0	6	0	0	4	0	0	2	0

[1] A rating of superior means that price/U.S. transportation costs are 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 listed country's product is inferior.

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

A majority of responding purchasers reported that domestic suppliers of phosphor copper were comparable with those of subject product from Korea on all factors but delivery time (for which responding purchasers were equally split between superior and comparable) and price (for which a majority rated the the Korean product as superior). A majority also indicated that U.S.-made phosphor copper and phosphor copper form nonsubject countries were comparable on all factors but delivery time (for which equal numbers again rated the U.S. and nonsubject product as superior and comparable). Only two purchasers compared sources of nonsubject and Korean phosphor copper, with both reporting Korea and nonsubject imports as comparable on nearly all factors except price for which Korea was rated as superior by both and extension of credit for which one purchaser rated Korea as superior.

Comparison of U.S.-produced and imported phosphor copper

In order to determine whether U.S.-produced phosphor copper can generally be used in the same applications as imports from Korea, 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-10, all responding U.S. producers, importers, and purchasers reported that phosphor copper from the United States, Korea, and nonsubject sources was either "always" or "frequently" interchangeable, with most indicating they are "always" interchangeable. Part of this may be due to different supply sources' near-universal ability to very frequently meet minimum quality specifications; nearly all purchasers indicated that phosphor copper, regardless of source, "always" meets minimum quality specifications (table II-11).[35]

Table II-10
Phosphor copper: Interchangeability between phosphor copper produced in the United States and in other countries, by country pair

Country pair	Number of U.S. producers reporting				Number of U.S. importers reporting				Number of purchasers reporting			
	A	F	S	N	A	F	S	N	A	F	S	N
U.S. vs. subject countries:												
U.S. vs. Korea	***	***	***	***	2	1	0	0	5	1	0	0
Nonsubject countries comparisons:												
U.S. vs. nonsubject countries	***	***	***	***	2	1	0	0	2	0	0	0
Korea vs. nonsubject countries	***	***	***	***	1	1	0	0	1	0	0	0

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

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

[35] Purchaser J.W. Harris noted that there was a batch of phosphor copper that was delivered from Metallurgical Products and was not properly dried, causing flare-ups when the drums were opened. Hearing transcript, p. 98 (Cavanaugh). ***.

Table II-11
Phosphor copper: Ability to meet minimum quality specifications, by source[1]

Source	Always	Usually	Sometimes	Rarely or never
United States	12	1	0	0
Korea	6	0	0	0
All other sources[2]	1	0	0	0

[1] Purchasers were asked how often domestically produced or imported phosphor copper meet minimum quality specifications for their own or their customers' uses.
[2] The other country noted was Germany.

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 phosphor copper produced in the United States, Korea, or nonsubject countries. As seen in table II-12, all producers and most importers and purchasers indicated that there are "sometimes" or "never" differences other than price. Purchasers most often responded that there were "sometimes" factors other than price that were significant. Purchaser J.W. Harris reported that the non-price factors it considers are diversifying supply, quality, and lead times. J.W. Harris ***.[36]

Table II-12
Phosphor copper: Significance of differences other than price between phosphor copper produced in the United States and in other countries, by country pair

Country pair	Number of U.S. producers reporting				Number of U.S. importers reporting				Number of purchasers reporting			
	A	F	S	N	A	F	S	N	A	F	S	N
U.S. vs. subject countries:												
U.S. vs. Korea	0	0	0	2	0	0	2	1	1	1	4	1
Nonsubject countries comparisons:												
U.S. vs. nonsubject countries	0	0	0	2	0	0	2	1	0	0	1	1
Korea vs. nonsubject countries	0	0	0	2	0	0	1	1	0	0	0	1

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

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

At the hearing, purchaser J.W. Harris indicated four quality and safety issues it had with phosphor copper supplied by U.S. producers: insufficient phosphor content, product contaminated with iron, improperly dried product which caused flare-ups upon opening shipping drums, and water in phosphor copper shot drums which could have exploded when it was to be used.[37] Although Metallurgical Products acknowledged the insufficiently dried phosphor copper, it noted that with the exception of that instance, it has had a long history of receiving very high marks for quality from J.W. Harris.[38] Purchaser *** indicated a few

[36] Respondents' posthearing brief, responses to Commissioner questions, p. 26-27.
[37] Hearing transcript, p. 121-122 (Cavanaugh).
[38] Hearing transcript, pp. 22 and 66 (Goodman).

differences: “There have been quality issues with U.S. product. There have been inconsistencies with the percentage of phosphorus in the product and quality control issues. Because of time and distance, lead times need to be considered when purchasing from Korea.” *** stated that availability and transportation costs “always” cause some differences. Finally, *** stated that it “chose to stay with {its} domestic supplier over Korean suppliers mainly due to {its} familiarity with the domestic supplier and its reliability,” and that ***.

ELASTICITY ESTIMATES

This section discusses elasticity estimates; parties were encouraged to comment on these estimates but none did so in their prehearing or posthearing briefs.

U.S. supply elasticity

The domestic supply elasticity[39] for phosphor copper measures the sensitivity of the quantity supplied by U.S. producers to changes in the U.S. market price of phosphor copper. 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 phosphor copper. Analysis of these factors above indicates that the U.S. industry has the ability to greatly increase or decrease shipments to the U.S. market; an estimate in the range of 4 to 6 is suggested.

U.S. demand elasticity

The U.S. demand elasticity for phosphor copper measures the sensitivity of the overall quantity demanded to a change in the U.S. market price of phosphor copper. 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 phosphor copper in the production of any downstream products. Based on the available information, the aggregate demand for phosphor copper is likely to be inelastic; a range of -0.5 to -1 is suggested.

Substitution elasticity

The elasticity of substitution depends upon the extent of product differentiation between the domestic and imported products.[40] Product differentiation, in turn, depends upon such factors as quality (e.g., chemistry, appearance, etc.) and conditions of sale (e.g.,

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

[40] 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.

availability, sales terms/ discounts/promotions, etc.). Based on available information, the elasticity of substitution between U.S.-produced phosphor copper and imported phosphor copper is likely to be large, in the range of 5 to 7.

PART III: U.S. PRODUCERS' PRODUCTION, SHIPMENTS, AND EMPLOYMENT

The Commission analyzes a number of factors in making injury determinations (see 19 U.S.C. §§ 1677(7)(B) and 1677(7)(C)). Information on the dumping margins was presented in *Part I* of this report and information on the volume and pricing of imports of the subject merchandise is presented in *Part IV* and *Part V*. Information on the other factors specified is presented in this section and/or *Part VI* and (except as noted) is based on the questionnaire responses of three firms that accounted for all of U.S. production of phosphor copper during 2015.

U.S. PRODUCERS

The Commission issued a U.S. producer questionnaire to three firms based on information contained in the petition. All firms provided useable data on their production operations. Staff believes that these responses represent all U.S. production of phosphor copper.

Table III-1 lists U.S. producers of phosphor copper, their production locations, positions on the petition, and shares of total production in 2015.

Table III-1
Phosphor copper: U.S. producers, their position on the petition, location of production, and share of reported production, 2015

Firm	Position on petition	Production location(s)	Share of production (percent)
H. Kramer	***	Chicago, IL	***
Metallurgical Products	Support	West Chester, PA	***
Milward Alloys	***	Lockport, NY	***
Total			***

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

***. Further, ***. In addition, *** U.S. producer directly imports the subject merchandise or purchase the subject merchandise from U.S. importers.

Producers were asked to report any changes in operations such as plant openings, plant closings, relocations, expansions, acquisitions, consolidations, prolonged shutdowns or production curtailments since January 1, 2013. Such changes are presented in table III-2.

Table III-2
Phosphor copper: U.S. producers' reported changes in operations, since January 1, 2013

* * * * * * *

U.S. PRODUCTION, CAPACITY, AND CAPACITY UTILIZATION

Table III-3 and figure III-1 present U.S. producers' production, capacity, and capacity utilization. U.S. producers' capacity ***, but production *** by *** percent or approximately *** pounds, from 2013-15. Metallurgical Products, the *** U.S. producer of phosphor copper, accounted for *** pounds of the ***.

From 2013 to 2014, U.S. production *** by *** pounds. ***.[1] Overall production was *** percent lower during January to September 2016 than in January to September 2015.

Table III-3
Phosphor copper: U.S. producers' capacity, production, and capacity utilization, 2013-15, January to September 2015, and January to September 2016

* * * * * * *

Figure III-1
Phosphor copper: U.S. producers' capacity, production, and capacity utilization, 2013-15, January to September 2015, and January to September 2016

* * * * * * *

Alternative products

Table III-4 presents U.S. producers' overall capacity and production. *** produced other products on the same equipment and machinery used to produce phosphor copper. Accordingly, overall capacity and overall production values compared to the phosphor copper capacity and production values ***. ***. Total production of *** combined accounted for no more than *** percent of U.S. producers' total production for any year during 2013-15.

Table III-4
Phosphor copper: U.S. producers' overall capacity and production on the same equipment as subject production, 2013-15, January to September 2015, and January to September 2016

* * * * * * *

U.S. PRODUCERS' U.S. SHIPMENTS AND EXPORTS

Table III-5 presents U.S. producers' U.S. shipments, export shipments, and total shipments. U.S. producers ship *** of their phosphor copper domestically, although a *** portion is exported. Total shipments decreased by *** percent from 2013-15.

U.S. producers' U.S. commercial shipments increased by *** percent from 2013 to 2014, largely driven by an increase in purchases ***. U.S. producers' U.S. commercial shipments then

[1] *** email message to USITC staff, April 7, 2016.

decreased by *** percent from 2014 to 2015, for an overall decrease of *** percent from 2013-15, and was largely driven by a decrease in purchases ***. Metallurgical Products attributes the decrease to Lucas-Milhaupt's purchase of Korean rather than U.S. product.[2] Additional competition also came from a new market entrant, Totall Metal Recycling, a distributor, that Metallurgical Products claims began importing phosphor copper from Korea in 2015.[3]

U.S. producers' export shipments increased by *** percent from 2013 to 2014, but then decreased by *** percent from 2014 to 2015 for an overall decrease of *** percent during 2013-15. The decrease in export shipments is attributed to ***.[4] Declining sales to ***.[5] Prior to ***.[6] Metallurgical Products reported that its ***. Metallurgical Products also claims ***. In 2015, sales to ***.[7]

Table III-5
Phosphor copper: U.S. producers' U.S. shipments, export shipments, and total shipments, 2013-15, January to September 2015, and January to September 2016

* * * * * * *

Table III-6 presents U.S. producers' U.S. shipments of phosphor copper by phosphor content. Phosphor copper with 15 percent phosphor content accounts for the large majority of U.S. producers' shipments. Phosphor copper with 8 percent phosphor content accounted for *** to *** percent by quantity of U.S. producers' shipments during 2013-15. Phosphor copper with other phosphor content ***.

Table III-6
Phosphor copper: U.S. producers' commercial U.S. shipments by phosphor content, 2013-15, January to September 2015, and January to September 2016

* * * * * * *

[2] Hearing transcript, p. 20 (Goodman).
[3] Ibid.
[4] *** email message to USITC staff, April 7, 2016.
[5] Ibid.
[6] "New Opportunities for U.S. Exporters Under the U.S.-Korea Trade Agreement," Office of the United States Trade Representative. Found at https://ustr.gov/trade-agreements/free-trade-agreements/korus-fta. Accessed April 8, 2016. Email from ***. April 7, 2016.
[7] *** email message to USITC staff, April 7, 2016.

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**.** U.S. producers' end-of-period inventories decreased by *** percent from 2013-15. The ratio of end-of-period inventories to production ranged from *** percent to *** percent, while the ratio of end-of-period inventories to U.S. shipments ranged from *** percent to *** percent during 2013 to 2015.

Table III-7
Phosphor copper: U.S. producers' inventories, 2013-15, January to September 2015, and January to September 2016

* * * * * * *

U.S. PRODUCERS' IMPORTS AND PURCHASES

No U.S. producer reported importing subject merchandise or purchasing subject merchandise from an importer.

U.S. EMPLOYMENT, WAGES, AND PRODUCTIVITY

Table III-8 shows U.S. producers' employment-related data. The level of production and related workers (PRW) decreased by *** percent during 2013-15. Total hours worked decreased by *** percent during 2013-15. Wages paid increased by *** percent from 2013-14 and then decreased by *** percent from 2014-15 for an overall decrease of *** percent. Hourly wages increased by *** percent from 2013-14 and then decreased by *** percent from 2014-15. Productivity increased by *** percent from 2013 to 2014 then decreased by *** percent from 2014 to 2015 reflecting the changes in ***. Unit labor costs increased by *** percent from 2013 to 2015.

Table III-8
Phosphor copper: U.S. producers' employment related data, 2013-15, January to September 2015, and January to September 2016

* * * * * * *

PART IV: U.S. IMPORTS, APPARENT U.S. CONSUMPTION, AND MARKET SHARES

U.S. IMPORTERS

The Commission issued questionnaires to 13 firms believed to be importers of phosphor copper, as well as to all U.S. producers of phosphor copper.[1] Usable questionnaire responses were received from four companies, representing all U.S. subject imports from Korea between 2013-15 under statistical reporting number 7405.00.1000.[2] Unless otherwise noted, U.S. import data presented throughout this report are based on U.S. importers' questionnaire responses. Table IV-1 lists all responding U.S. importers of phosphor copper from Korea and other sources, their locations, and their shares of U.S. imports, in 2015.

Table IV-1
Phosphor copper: U.S. importers, their headquarters, and share of total imports by source, 2015

* * * * * * *

U.S. IMPORTS

Table IV-2 presents data for U.S. imports of phosphor copper from Korea and all other sources. Imports from Korea account for the vast majority of total U.S. imports of phosphor copper and rose throughout the period of investigation. The quantity of U.S. imports from Korea increased by *** percent during 2013-15, and was *** percent higher during January to September 2016 than during January to September 2015. The value of imports from Korea increased by *** percent during 2013-15, and was *** percent lower during January to September 2016 than during January to September 2015. The average unit value of U.S. imports from Korea decreased by *** percent from 2013-15, declining in each successive year. Bongsan accounted for *** percent of total subject imports in 2015. ***.

Nonsubject imports of phosphor copper were reported in 2013 and January to September 2016. ***. The quantity of U.S. imports from nonsubject sources accounted for *** percent by quantity in 2013 and *** percent in January to September 2016. The average unit value of nonsubject imports was $*** dollars per pound in 2013 and $*** dollars in January to September 2016.

[1] The Commission issued questionnaires to those firms identified in the petition, along with firms that, based on a review of data provided by ***, may have imported product under HTS statistical reporting number 7405.00.1000 during 2013-15.

[2] ***. This firm did not provide an importers' questionnaire response, but is not believed to have imported much or any phosphor copper in light of testimony provided at the Staff Conference that nonsubject imports are not present in the marketplace. Conference transcript, p. 73 (Goodman). ***.

Table IV-2
Phosphor copper: U.S. imports, by source, 2013-15, January to September 2015, and January to September 2016

* * * * * * *

Table IV-3 presents data for U.S. importers' shipments of phosphor copper from Korea. U.S. importers of phosphor copper from Korea did not report any internal consumption or exports of subject product. Commercial shipments by quantity increased by *** percent from 2013-15, total shipments by value increased by *** percent from 2013-15, while average unit value decreased by *** percent from 2013-15.

Table IV-3
Phosphor copper: U.S. importers' U.S. shipments, export shipments, and total shipments of U.S. imports from Korea, 2013-15, January to September 2015, and January to September 2016

* * * * * * *

Table IV-4 presents data for U.S. importers' shipments of phosphor copper from all other sources. In interim 2016, ***.

Table IV-4
Phosphor copper: U.S. importers' U.S. shipments, export shipments, and total shipments of U.S. imports from all other sources, 2013-15, January to September 2015, and January to September 2016

* * * * * * *

All imports of phosphor copper from Korea and nonsubject sources consisted solely of product containing 15 percent phosphor content.

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 Tariff Act of 1930, 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

[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)).

imports from such countries are deemed not to be negligible.[4] Imports from Korea accounted for *** percent of total imports of phosphor copper by quantity during March 2015 to February 2016.

APPARENT U.S. CONSUMPTION AND U.S. MARKET SHARES

Table IV-5 and figure IV-1 present data on apparent U.S. consumption and U.S. market shares for phosphor copper. Apparent U.S. consumption based on quantity increased by *** percent from 2013 to 2014, decreased by *** percent from 2014 to 2015 and was *** percent lower during January to September 2016 than during January to September 2015. U.S. producers' U.S. shipments accounted for the largest, but ***, share of apparent U.S. consumption during 2013-15, showing a *** percentage point *** during this period. Shipments of subject imports accounted for *** percent of the quantity of apparent U.S. consumption during 2013 and *** to *** percent in 2015. Nonsubject imports accounted for just *** percent of apparent U.S. consumption in 2013 and were not present in 2014 or 2015.

Apparent U.S. consumption based on value decreased by *** percent from 2013 to 2014, decreased by *** percent from 2014 to 2015, and was *** percent lower during January to September 2016 than in January to September 2015.[5] Unlike subject imports, which are exclusively phosphor copper with 15 percent phosphor content, U.S. producers' U.S. shipments include product with 8 percent phosphor content and other phosphor content, albeit in relatively small quantities relative to its shipments of product with 15 percent phosphor content.[6]

Table IV-5
Phosphor copper: Apparent U.S. consumption, 2013-15, January to September 2015, and January to September 2016

* * * * * * *

Figure IV-1
Phosphor copper: Apparent U.S. consumption, 2013-15, January to September 2015, and January to September 2016

* * * * * * *

[4] Section 771 (24) of the Act (19 U.S.C § 1677(24)).
[5] See table III-6.
[6] See table IV-3.

PART V: PRICING DATA

FACTORS AFFECTING PRICES

Raw material costs

Phosphor copper primarily contains phosphorous (usually 15 percent of total chemical composition) and copper (usually 85 percent of total chemical composition), while also containing traces of iron, lead, and tin.[1] Petitioner Metallurgical Products stated that it purchases its copper domestically in the form of high-grade copper scrap. It added that all phosphor copper producers now purchase phosphorous from China and Vietnam because the remaining U.S. phosphorous producer was purchased by a fertilizer company and now produces phosphorous only for internal consumption.[2]

Raw material costs are a large component of phosphor copper prices, in particular the cost of the copper and phosphorus raw materials. The share of raw materials as percent of the costs of goods sold for phosphor copper decreased from *** in 2013 to *** in 2015. In the first nine months of 2016, this ratio was *** percent. Two of three U.S. producers reported that raw material prices have decreased since January 1, 2013, while the other U.S. producer and all four responding importers reported raw materials prices fluctuating since that time.

Responding firms reported that the price of phosphor copper is largely driven by the price of copper. Specifically, pricing consists of two parts: the price of copper based on a price index and a fabrication adder or premium.3 Petitioner and respondents stated that copper prices are set by the COMEX (Commodity Exchange) in the United States and the London Metal Exchange (LME) in the rest of the world.[4] COMEX copper prices fell from $*** per pound in 2013 to $*** per pound in 2014, to $*** per pound in 2015, and $*** per pound in the first nine months of 2016 ($*** for full-year 2016). Despite this, one producer and all four importers indicated that raw material prices had fluctuated with no clear trend.

Although the prices of both copper and phosphorus have declined since January 2013, the price of copper has declined much farther than the price of phosphorus (Figure V-1). Between January 2013 and January 2016, copper prices decreased by more than 45 percent. By the end of 2016, however, copper prices were only 30 percent below the January 2013 price. A

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[1] Petition, pp. 4 and 16.

[2] Conference transcript, p. 38 (Goodman).

[3] Hearing transcript, p. 24 (Goodman).

[4] Conference transcript, pp. 44-45 (Goodman), hearing transcript, p. 100 (Lutz) and 115 (Cavanaugh). The COMEX and LME pricing series are extremely highly correlated. Monthly indexed prices for these two price series from January 2013 to November 2016 have a simple correlation R^2 of .9991, indicating very little difference between the two series.

recent report indicates that the price of copper is likely to decrease in 2017 as China ramps up production.[5] Trends in copper and phosphorous prices are summarized in figure V-1.

Figure V-1
Trends in copper and phosphorous prices, January 2013-December 2016

* * * * * * *

The full amount of changes in the price of copper are passed through to the price of phosphor copper. Petitioners argue that a decrease in copper prices changes the price of phosphor copper by the full amount of the decrease, but raw material costs only decrease by 85 percent of the copper price decrease since phosphor copper consists of 85 percent copper.[6]

Transportation costs to the U.S. market

Transportation costs to the U.S. market were 3.2 percent[7] for phosphor copper from Korea in 2015.

U.S. inland transportation costs

*** responding U.S. producers and *** reported that they typically arrange transportation to their customers.[8] U.S. producers reported that their U.S. inland transportation costs ranged from *** to *** percent while *** reported costs of *** percent.

PRICING PRACTICES

Pricing methods

As noted above, pricing in the phosphor copper market is established by two factors: the price of copper and a fabrication adder or premium. Since the cost of copper is fixed to an index, pricing competition takes place mainly in terms of the adder that a supplier charges.[9] Purchaser J.W. Harris noted that the fabrication adder is typically negotiated late in the year for the following year's sales for annual contracts.[10] J.W. Harris provided ***.[11]

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[5] "Copper Prices Set to Drop as China's Jiangxi Looks to Boost Production," Bloomberg News, March 5, 2017, found at https://sg.finance.yahoo.com/news/copper-set-drop-chinas-jiangxi-121607780.html retrieved March 6, 2017.

[6] Hearing transcript, pp. 48-49 (Goodman).

[7] Transportation costs were determined by comparing the c.i.f. value of imports to the Customs value of imports for HTS code 7405.00.1000, using values from 2015.

[8] ***.

[9] Hearing transcript, p. 72 (Pickard).

[10] Hearing transcript, p. 115 (Cavanaugh).

As presented in table V-1, U.S. producers used both transaction-by-transaction negotiation and contracts, while responding importers sold phosphor copper primarily on a transaction-by-transaction basis.

Table V-1
Phosphor copper: U.S. producers and importers reported price setting methods, by number of responding firms

* * * * * * *

As shown in table V-2, U.S. producers reported selling *** and importers reported selling *** in the spot market. *** reported *** contract sales in 2015, but *** were on the spot market. *** reported ***.

Table V-2
Phosphor copper: U.S. producers' and importers' shares of U.S. commercial shipments by type of sale, 2015

* * * * * * *

*** described its *** as generally having a duration of *** days, while *** reported a typical duration of *** days for its *** contracts. *** stated that their contracts allowed for renegotiation during the contract period. However, during the hearing, Mr. Goodman of Metallurgical Products stated that he could name five or six customers with whom it had contracts with prices fixed through December but had to lower its prices in September or October.[12] *** also described its short-term contracts as ***, *** fix ***, and *** fix ***. *** described its *** as having meet-or-release provisions. Metallurgical Products indicated that its phosphor copper contracts contain a provision in which prices are based on the COMEX price of copper plus a negotiated premium. Most of Metallurgical Products's contracts have meet-or-release provisions, in which it can lower the premium to meet a competitor's offer.[13] *** indicated that it ***.

Sales terms and discounts

*** typically quote prices on a delivered basis, although *** quotes prices f.o.b. ***. *** reported no discount policy, but *** indicated that ***. *** reported sales terms of net 30 days. ***.

(…*continued*)

[11] Respondents' posthearing brief, answers to Commissioner questions, p. 31 and exh. 1, attachment 3.

[12] Hearing transcript, pp. 57-58 (Goodman).

[13] Hearing transcript, p. 58 (Goodman).

Price leadership

Three purchasers identified Metallurgical Products as a price leader and two of the three also identified H. Kramer as a price leader. Purchaser *** stated that Metallurgical Products "held firm last year when the influx of imports came in even though they wanted an increase. They have raised their prices with the market this year." Purchaser *** reported that Totall Metal Recycling was offering lower prices than Metallurgical Products.

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 phosphor copper products shipped to unrelated U.S. customers during January 2013 to September 2016.

Product 1.-- 15% phosphor copper shot that meets or exceeds JIS H2501 Grade 1, Class A, 15 P Cu A, P content approximately 14.8%. P 14.7% to 14.9%, P+Cu>99.75%, Fe<0.03%, Pb<0.01%, Sn<0.01%, in drums or comparable containers

Product 2.-- 15% phosphor copper ingot/waffle that meets or exceeds JIS H2501 Grade 1, Class A, 15 P Cu A, P content approximately 14.8%. P 14.7% to 14.9%, P+Cu>99.75%, Fe<0.03%, Pb<0.01%, Sn<0.01%, in drums or comparable containers

Three U.S. producers and two importers provided usable pricing data for sales of the requested products, although not all firms reported pricing for all products for all quarters.[14] Pricing data reported by these firms accounted for approximately *** percent of U.S. producers' shipments of phosphor copper and *** percent of U.S. shipments of subject imports from Korea from January 2013-September 2016.[15]

Pricing data for ***. Among importers, ***. *** provided all of the reported import sales data ***. ***. ***.[16] Price data for products 1 and 2 are presented in tables V-3 and V-4, and figures V-2 and V-3.

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

[15] Data were also requested for pricing products imported from Japan, but no importers provided such data.

[16] In the preliminary phase of this investigation, the two large consignees, ***, reported their data under direct imports, i.e. imports for their own internal consumption. ***, no direct import data were reported in the final phase of this investigation.

Petitioner Metallurgical Products argues that the Commission should consider competition in the "fabrication adders" as the main point of competition in this market.[17] It contends that these adders have declined since 2013, and especially after Totall Metal Recycling entered the industry in the second half of 2015, which would be most pronounced in 2016 after its presence was being felt in the U.S. market for both shot and waffle/ingot forms.[18] Respondents Bongsan and J.W. Harris provided a year-by-year analysis of the AUVs for phosphor copper subtracting out the average cost of copper.[19] Petitioners stated that this analysis was too simplistic.[20] Appendix D presents an analysis based on the difference between the quarterly prices for pricing products 1 and 2 with the price of copper removed.

Table V-3
Phosphor copper: Weighted-average f.o.b. prices and quantities of domestic and imported product 1 and margins of underselling/(overselling), by quarters, January 2013-September 2016

* * * * * * *

Table V-4
Phosphor copper: Weighted-average f.o.b. prices and quantities of domestic and imported product 2 and margins of underselling/(overselling), by quarters, January 2013-September 2016

* * * * * * *

Figure V-2
Phosphor copper: Weighted-average prices and quantities of domestic and imported product 1, by quarters, January 2013-September 2016

* * * * * * *

Figure V-3
Phosphor copper: Weighted-average prices and quantities of domestic and imported product 2, by quarters, January 2013-September 2016

* * * * * * *

Price trends

Prices decreased during 2013-15. Table V-5 summarizes the price trends, by country and by product. As shown in the table, domestic price decreases ranged from *** to *** percent during 2013-15 while the price decrease *** imported from Korea was *** percent.[21] Quarterly price changes for U.S. and Korean products 1 and 2 are depicted in figure V-4. Most quarterly

[17] Hearing transcript, p. 72 (Pickard).
[18] Hearing transcript, pp. 84-85 (Pickard). ***. ***.
[19] Respondents' prehearing brief, p. 18.
[20] Hearing transcript, pp. 74-76 and 84-85 (Pickard).
[21] Between the third quarter of 2015 and the third quarter of 2016, prices for Korean product 2 decreased *** percent.

changes are negative, indicating that prices were declining. Price changes for domestic products 1 and 2 tended to move in tandem throughout the entire period. Korean product 1 tended to change in the same direction as domestic price changes, but lagged one quarter.

Table V-5
Phosphor copper: Summary of weighted-average f.o.b. prices for products 1-2 from the United States and Korea

* * * * * * *

Figure V-4
Phosphor copper: Quarterly prices changes of domestic and imported products 1 and 2, by quarters, January 2013-September 2016

* * * * * * *

Price comparisons

As shown in table V-6, prices for phosphor copper imported from Korea were below those for U.S.-produced product in 16 of 20 instances (*** pounds); margins of underselling ranged from *** to *** percent, averaging *** percent. In the remaining 4 instances (*** pounds), prices for phosphor copper imported from Korea were between *** and *** percent above prices for the domestic product, averaging *** percent.

Table V-6
Phosphor copper: Instances of underselling/overselling and the range and average of margins, by country, January 2013-September 2016

* * * * * * *

LOST SALES AND LOST REVENUE

The Commission requested U.S. producers of phosphor copper to report purchasers where they experienced instances of lost sales or revenue due to competition from imports of phosphor copper from Korea since January 1, 2013. Of the three responding U.S. producers, *** reported that *** had to reduce prices, while *** reported that *** had also rolled back announced price increases. *** reported that *** had lost sales. In the preliminary phase, the Commission requested U.S. producers to submit specific allegations of lost sales and lost revenue. *** submitted lost sale and lost revenue allegations, identifying *** instances where *** lost sales or revenue (*** consisting of lost sales allegations, *** consisting of lost revenue allegations, and *** consisting of both types of allegations, all of which *** and involved *** on ***). ***.

Staff contacted *** purchasers and received responses from *** purchasers.[22] Responding purchasers reported purchasing *** pounds of phosphor copper during 2015 (table V-7). During 2015, purchasers sourced 74.9 percent of their reported purchases from U.S. producers, 24.8 percent of imported Korean product, and 0.3 percent from nonsubject or unknown sources. Of the responding purchasers, three reported decreasing purchases from domestic producers, one reported increasing purchases, one reported fluctuating purchases from domestic producers, and seven reported no change. Explanations for decreasing purchases of domestic product included "reduced usage and the purchase of Korean material in 2015" (***), "No demand" (***), and "Declining production requirements" (***). In the preliminary phase, the responding purchasers described different reasons for declining domestic purchases: *** [23]

Table V-7
Phosphor copper: Purchasers' responses to purchasing patterns

* * * * * * *

***. ***. ***.

Of the 13 responding purchasers, five reported that they had purchased subject imports of phosphor copper instead of U.S. phosphor copper since 2013, and all five indicated that the Korean product was lower-priced. The quantity that shifted to phosphor copper imported from Korea totaled *** pounds since January 1, 2013.[24] This accounts for approximately *** percent of total reported purchases (tables V-7 and V-8).[25] During the preliminary phase, purchaser *** indicated that price was not the reason for purchasing phosphor copper from Korea instead of domestic phosphor copper, noting that "***." During the final phase, it indicated that the price of phosphor copper from Korea was lower.

Table V-8
Phosphor copper: Purchasers' responses to shifting supply sources

* * * * * * *

[22] One purchaser submitted a lost sales/lost revenue survey response in the preliminary phase but did not submit a purchaser questionnaire responses in the final phase.

[23] In its final phase questionnaire, *** reported "fluctuating" purchases of domestic phosphor copper and provided no explanation.

[24] Purchaser *** did not supply a quantity that was shifted, but had noted elsewhere that its total purchases of imported phosphor copper from Korea was ***.

[25] If ***, this would amount to approximately *** percent of total purchases. A similar adjustment could be made for ***, though this would not change this percentage appreciably.

Of the 13 responding purchasers, three reported that U.S. producers had reduced prices in order to compete with lower-priced imports from Korea (table V-9), four reported that U.S. producers did not do so, and six reported that they did not know. Two purchasers that responded affirmatively reported that the estimated price reduction was 10 percent, and one placed it at 2.7 percent, and only at the end of 2015 and start of 2016. During the preliminary phase, purchaser ***, which noted U.S. price reductions of 27.0 percent provided this timeline: "***."

Table V-9
Phosphor copper: Purchasers' responses to U.S. producer price reductions

* * * * * * *

In responding to the lost sales lost revenue survey in the preliminary phase, four purchasers provided additional information on purchases and market dynamics, one of which (***) did not complete a purchaser's questionnaire in the final phase. *** stated that of the three U.S. producers, one "barely operates" and another is a direct competitor, so it needs alternative sources of supply. *** also stated that U.S. producers are limited in the amount of phosphor copper that they can supply. *** stated that it uses phosphor copper to produce ***, which it described as a highly price competitive market internationally, meaning that *** requires low-cost raw materials. The fourth purchaser, ***, stated that it sources from two U.S. producers, and that of those, its secondary supplier offered a lower price but was not awarded additional business because it regards that firm as a second-tier supplier. *** continued, stating that its primary supplier of phosphor copper has not offered any price concessions. *** stated that since it began purchasing *** from Korean suppliers ***, the Korean price has been lower than the U.S. price.

PART VI: FINANCIAL EXPERIENCE OF U.S. PRODUCERS

INTRODUCTION

U.S. producers H. Kramer, Metallurgical Products, and Milward Alloys provided financial data on their operations on phosphor copper. These data are believed to account for all U.S. production of phosphor copper from January 2013 to September 2016. *** reported some sales as *** which accounted for ***.[1] These data are included but not shown separately in this section of the report. *** reported a fiscal year end of December 31, while *** reported a fiscal year end of June 30 (however, *** reported their financial data on a calendar year basis).

OPERATIONS ON PHOSPHOR COPPER

Income-and-loss data for U.S. producers of phosphor copper are presented in table VI-1, while selected financial data, by firm, are presented in table VI-2. The reported profitability of the U.S. industry declined from 2013 to 2015. The reported aggregate net sales quantity declined by *** percent during this time, while the aggregate net sales value declined by *** percent. Operating expenses which include both the cost of goods sold ("COGS") and selling, general, and administrative ("SG&A") expenses declined by *** percent during this time. As a result of the *** decline in revenue compared to operating expenses, operating income declined, consistently, with ***. Gross and net income followed generally similar trends of decreasing profitability during this time; however, all three periods show ***.

In January-September 2016 compared to January-September 2015, the reported aggregate net sales quantity was *** percent lower and the aggregate net sales value was *** percent lower. Operating expenses were *** percent lower in interim 2016 compared to interim 2015. As a result of the *** in operating expenses compared to revenue, both gross and operating income improved; however, *** occurred in both partial year periods. *** between the comparable interim periods.[2]

On a per pound basis, raw material costs decreased, while direct labor, other factory costs, and SG&A expenses remained essentially unchanged from 2013 to 2015. The unit net sales value declined by $*** from 2013 to 2015, while unit operating expenses declined by about $*** during this time.[3] [4] The larger decline in unit net sales value resulted in a continual decline in operating income from 2013 to 2015, with ***.

---

[1] ***. Email from ***, February 2, 2017. ***. Emails from ***, February 24 and February 28, 2017, and ***, March 9, 2017.

[2] ***. U.S. producers' questionnaire response of ***, question III-10a.

[3] Raw material costs declined by $*** from 2013 to 2015, driving the trend in overall operating expenses.

[4] As previously discussed in this report, as well as at the hearing and in submitted briefs, selling prices reflect a pass-through of copper costs and a "fabrication adder" intended to cover all other production costs and generate a profit. See petitioner's posthearing brief, exhibit 1, pp. 5-6.

Table VI-1
Phosphor copper: Results of operations of U.S. producers, 2013-15, January-September 2015, and January-September 2016

* * * * * * *

Table VI-2
Phosphor copper: Selected results of operations of U.S. producers, by firm, 2013-15, January-September 2015, and January-September 2016

* * * * * * *

As a ratio to net sales, direct labor, other factory costs, total COGS, and SG&A expenses generally increased as total net sales value declined; however, raw material costs were fairly consistent as a ratio to net sales during the three full-year periods.

In January-September 2016 compared to January-September 2015, per-pound raw material costs were lower, while direct labor, other factory costs, and SG&A expenses remained relatively stable or were somewhat lower. The net sales value was lower by $***, while total operating expenses declined by $*** during this time.[5] The *** larger decline in operating expenses resulted in an improvement in both per-pound gross and operating income.

Between the comparable interim periods, ratio-to-net sales values for direct labor, other factory costs, and SG&A expenses generally were higher as total net sales value declined; however, raw material costs as well as overall COGS were lower as a ratio to net sales.

Raw material costs accounted for an average *** percent of total COGS for the reporting period,[6] and SG&A expenses accounted for an average *** percent of total operating expenses for the reporting period. As previously stated, the U.S. industry experienced gross profits throughout the period for which data were requested; however, operating losses occurred in *** periods as SG&A expenses exceeded gross profit.

U.S. producers were asked various questions related to raw material purchases in order to determine the effects of fluctuations in raw material costs (primarily copper costs) on reported profitability. According to H. Kramer, ***.[7]

According to Metallurgical Products, the firm's raw material costs reflect spot purchases for both copper (high purity copper scrap) and phosphorous. The firm indicated that its main suppliers of copper are U.S. firms, while its main suppliers of phosphorous are in China and Vietnam.[8] ***.[9] Metallurgical Products utilizes futures contracts to offset the market risk associated with fluctuations in copper prices.[10] ***.[11]

---

[5] Raw material costs were $*** lower in January-September 2016 than in January-September 2015.

[6] Conference testimony indicated that reported total raw material costs mirror the content of the finished goods, and are generally comprised of 85 percent copper costs and 15 percent phosphorous costs. Conference transcript (Goodman), p. 85.

[7] Email from ***, April 8, 2016.

[8] Conference transcript (Goodman), pp. 54, 69, and 84.

[9] U.S. producers' preliminary phase questionnaire response of Metallurgical Products, question III-3.

[10] Conference transcript (Goodman), pp. 86-87.

According to Milward Alloys, ***.[12] ***.[13]

In this final phase of this investigation, U.S. producers were asked to discuss the effects of export shipments on reported profitability. ***.[14] ***.[15]

Variance analysis

The variance analysis presented in table VI-3 is based on the data in table VI-1.[16] The analysis shows that the decrease in operating profitability from 2013 to 2015 is attributable to ***, while the *** operating loss in January-September 2016 compared to January-September 2015 is attributable to ***.

Table VI-3
Phosphor copper: Variance analysis on the operations of U.S. producers, 2013-15, and January-September 2015-16

* * * * * * *

Capital expenditures, total assets, and return on assets

The responding firms' aggregate data on capital expenditures, total assets, and return on assets ("ROA") are shown in table VI-4. *** reported capital expenditure data, and *** reported research and development ("R&D") expenses. Aggregate capital expenditures increased irregularly from 2013 to 2015, and increased between the comparable interim periods. The *** of reported capital expenditures and assets reflect the data of ***. According to ***, the firm's capital expenditures reflect ***.[17] [18]

(…*continued*)

[11] Email from ***, April 8, 2016.

[12] Email from ***, April 11, 2016.

[13] U.S. producers' preliminary phase questionnaire response of Milward Alloys, question III-3, and email response from ***, March 29, 2016.

[14] U.S. producers' questionnaire response of ***, question III-11.

[15] Email from ***, February 24, 2017. ***. ***.

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

[17] U.S. producers' questionnaire response of ***, question III-13. *** noted in response to this question that its reported capital expenditures reflect ***.

[18] ***.

The total assets utilized in the production, warehousing, and sale of phosphor copper declined irregularly from $*** in 2013 to $*** in 2015, and the ROA declined from *** percent in 2013 to *** percent in 2015.[19]

Table VI-4
Phosphor copper: Capital expenditures, total assets, and ROA of U.S. producers, 2013-15, January-September 2015, and January-September 2016

* * * * * * *

Capital and investment

The Commission requested that U.S. producers of phosphor copper describe any negative effects of imports of phosphor copper from Korea on their firms' return on investment or the scale of capital investments, as well as any negative effects on their firms' growth, ability to raise capital, or existing development and production efforts. Responses are shown in tables VI-5a through VI-5c.

Table VI-5a
Phosphor copper: Negative effects of imports as reported by U.S. producer *, by factor**

* * * * * * *

Table VI-5b
Phosphor copper: Negative effects of imports as reported by U.S. producer *, by factor**

* * * * * * *

Table VI-5c
Phosphor copper: Negative effects of imports as reported by U.S. producer *, by factor**

* * * * * * *

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

PART VII: THREAT CONSIDERATIONS AND INFORMATION ON NONSUBJECT COUNTRIES

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

> *In determining whether an industry in the United States is threatened with material injury by reason of imports (or sales for importation) of the subject merchandise, the Commission shall consider, among other relevant economic factors*[1]*--*
>
> *(I) if a countervailable subsidy is involved, such information as may be presented to it by the administering authority as to the nature of the subsidy (particularly as to whether the countervailable subsidy is a subsidy described in Article 3 or 6.1 of the Subsidies Agreement), and whether imports of the subject merchandise are likely to increase,*
>
> *(II) any existing unused production capacity or imminent, substantial increase in production capacity in the exporting country indicating the likelihood of substantially increased imports of the subject merchandise into the United States, taking into account the availability of other export markets to absorb any additional exports,*
>
> *(III) a significant rate of increase of the volume or market penetration of imports of the subject merchandise indicating the likelihood of substantially increased imports,*
>
> *(IV) whether imports of the subject merchandise are entering at prices that are likely to have a significant depressing or suppressing effect on domestic prices, and are likely to increase demand for further imports,*
>
> *(V) inventories of the subject merchandise,*

[1] Section 771(7)(F)(ii) of the Act (19 U.S.C. § 1677(7)(F)(ii)) provides that "The Commission shall consider {these factors} . . . as a whole in making a determination of whether further dumped or subsidized imports are imminent and whether material injury by reason of imports would occur unless an order is issued or a suspension agreement is accepted under this title. The presence or absence of any factor which the Commission is required to consider . . . shall not necessarily give decisive guidance with respect to the determination. Such a determination may not be made on the basis of mere conjecture or supposition."

(VI) the potential for product-shifting if production facilities in the foreign country, which can be used to produce the subject merchandise, are currently being used to produce other products,

(VII) in any investigation under this title which involves imports of both a raw agricultural product (within the meaning of paragraph (4)(E)(iv)) and any product processed from such raw agricultural product, the likelihood that there will be increased imports, by reason of product shifting, if there is an affirmative determination by the Commission under section 705(b)(1) or 735(b)(1) with respect to either the raw agricultural product or the processed agricultural product (but not both),

(VIII) the actual and potential negative effects on the existing development and production efforts of the domestic industry, including efforts to develop a derivative or more advanced version of the domestic like product, and

(IX) any other demonstrable adverse trends that indicate the probability that there is likely to be material injury by reason of imports (or sale for importation) of the subject merchandise (whether or not it is actually being imported at the time).[2]

Information on the volume and pricing of imports of the subject merchandise is presented in *Parts IV* and *V*; 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.

THE INDUSTRY IN KOREA

The Commission issued foreign producers' or exporters' questionnaires to one firm believed to produce and/or export phosphor copper from Korea.[3] A useable response to the Commission's questionnaire was received from Bongsan, the sole producer of phosphor copper in Korea. Bongsan's exports to the United States accounted for all U.S. imports of phosphor

[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."

[3] This firm was identified through a review of information submitted in the petition and contained in *** records.

copper from Korea over the period being examined. Bongsan was established in 1995 and started producing phosphor copper in 1996, when its factory was completed.[4] The facility was ISO 9001 certified in 2006.[5] Bongsan reports producing three standards of phosphor copper: Bongsan Standard, JIS H2501, and ASTM B-644.[6] The Bongsan Standard requires higher purity of phosphor copper compared to the JIS and ASTM standard and lower concentrations of iron, lead, and silicon. Bongsan also reports that it sells phosphor copper in waffle and shot forms.[7] Bongsan's e-catalog prices are based on the London Metals Exchange (LME) price (average of previous month), production cost, and transportation.[8] Delivery for orders below 20 tons is within two weeks after accepting the order and delivery orders for over 20 tons is four weeks after accepting the order.[9]

Table VII-1 presents information on the production, exports, and total shipments of Korean producer Bongsan. Bongsan's production capacity[10] *** during 2013-15 and was *** percent higher in January to September 2016 than in January to September 2015. Production increased by *** percent from 2013 to 2015 and was *** percent higher in January to September 2016 than in January to September 2015.[11] Total shipments increased by *** percent during 2013 to 2015 and were *** percent higher in January to September 2016 than in January to September 2015. Total shipments are projected to increase by *** pounds from 2015 to 2016 and decrease by *** pounds from 2016 to 2017.[12] Total exports increased by *** percent *** pounds from 2013 to 2015 and were *** percent higher in January to September 2016 than in January to September 2015. Exports to the United States increased by *** percent *** pounds from 2013 to 2015 and exports to all other markets[13] increased by *** percent *** pounds from 2013 to 2015.

[4] Bongsan e-catalog, found at "http://www.bsan.co.kr/," retrieved April 8, 2016. Korea had an eight percent import duty imposed on phosphor copper, which was eliminated in 2012 when the United States and Korea entered into a free trade agreement. Petitioner's postconference brief, Exh. 1, p. 15.

[5] Bongsan e-catalog, found at "http://www.bsan.co.kr/," retrieved April 8, 2016.

[6] Ibid.

[7] Ibid.

[8] Ibid.

[9] Ibid.

[10] Production capacity was reported based on operating *** hours per week, *** weeks per year. Capacity constraints were reported to be ***.

[11] ***.

[12] Ibid.

[13] Bongsan identified its principal markets as ***.

Table VII-1
Phosphor copper: Data on industry in Korea, 2013-15, January to September 2015, and January to September 2016 and projection calendar years 2016 and 2017

* * * * * * *

Alternative products

Table VII-2 presents overall capacity and production for Korean producer Bongsan. Bongsan reported that it also produces *** on the same equipment and machinery used to produce phosphor copper. These products represented a *** share of Bongsan's overall production, accounting for no more than *** percent of its overall production since 2013. Phosphor copper accounted for *** percent of Bongsan's sales in 2015.

Table VII-2
Phosphor copper: Data for Korea producer Bongsan, overall capacity and production on the same equipment as subject production, 2013-15, January to September 2015, and January to September 2016

* * * * * * *

Korea exports by destination market

Table VII-3 presents data from Global Trade Information Services (GTIS) on Korean exports of master alloys of copper by destination market for HS subheading 7405.00. HS subheading 7405.00 is a broader category that covers all master alloys of copper, not just the subject product. The United States is the single largest destination for Korean exports of phosphor copper, accounting for 33.4 percent of its exports in 2015. Japan accounted for the second largest share of exports, 15.3 percent in 2015, and all other countries accounted for 10 percent or less of exports from Korea.

Table VII-3
Phosphor copper: Korea exports by destination market, 2013-15

Destination market	Calendar year		
	2013	2014	2015
	Quantity (pounds)		
Korea exports to the United States	1,212,188	1,379,387	1,726,811
Korea exports to other major destination markets.--			
Japan	521,503	886,502	791,719
Taiwan	672,693	590,838	515,881
Turkey	348,330	266,759	460,766
United Kingdom	637,135	740,752	440,924
Poland	165,347	275,578	324,079
Malaysia	257,941	190,259	224,871
Brazil	171,960	160,937	180,779
Thailand	183,098	111,516	164,546
All other destination markets	467,644	564,943	340,539
Total Korea exports	4,637,839	5,167,471	5,170,914
	Value (1,000 dollars)		
Korea exports to the United States	4,291	4,607	4,754
Korea exports to other major destination markets.--			
Japan	1,826	2,943	2,125
Taiwan	2,436	2,013	1,488
Turkey	1,212	874	1,285
United Kingdom	2,149	2,322	1,128
Poland	583	946	888
Malaysia	914	636	626
Brazil	601	532	484
Thailand	695	425	490
All other destination markets	1,595	1,857	914
Total Korea exports	16,303	17,156	14,181

Table continued on next page.

Table VII-3–Continued
Phosphor copper: Korean exports by destination market, 2013-15

Destination market	Calendar year		
	2013	2014	2015
	Unit value (dollars per pound)		
Korea exports to the United States	3.54	3.34	2.75
Korea exports to other major destination markets.--			
Japan	3.50	3.32	2.68
Taiwan	3.62	3.41	2.88
Turkey	3.48	3.28	2.79
United Kingdom	3.37	3.13	2.56
Poland	3.53	3.43	2.74
Malaysia	3.54	3.34	2.78
Brazil	3.49	3.31	2.68
Thailand	3.80	3.81	2.98
All other destination markets	3.41	3.29	2.68
Total Korea exports	3.52	3.32	2.74
	Share of quantity (percent)		
Korea exports to the United States	26.1	26.7	33.4
Korea exports to other major destination markets.--			
Japan	11.2	17.2	15.3
Taiwan	14.5	11.4	10.0
Turkey	7.5	5.2	8.9
United Kingdom	13.7	14.3	8.5
Poland	3.6	5.3	6.3
Malaysia	5.6	3.7	4.3
Brazil	3.7	3.1	3.5
Thailand	3.9	2.2	3.2
All other destination markets	10.1	10.9	6.6
Total Korea exports	100.0	100.0	100.0

Source: Official Korean exports statistics under HTS subheading 7405.00 as reported by Korea Customs and Trade Development Institution in the GTIS/GTA database, accessed March 6, 2017.

U.S. INVENTORIES OF IMPORTED MERCHANDISE

Table VII-4 presents data on U.S. importers' reported inventories of phosphor copper. ***. ***.[14] ***.

[14] ***. ***.

Table VII-4
Phosphor copper: U.S. importers' inventories, 2013-15, January to September 2015, and January to September 2016

* * * * * * *

U.S. IMPORTERS' OUTSTANDING ORDERS

The Commission requested importers to indicate whether they imported or arranged for the importation of phosphor copper from Korea after September 30, 2015. These data are presented in table VII-5. ***. ***.[15]

Table VII-5
Phosphor copper: Arranged imports, October 2016 through September 2017

* * * * * * *

ACTIONS IN THIRD-COUNTRY MARKETS

There are no known trade remedy actions in third-country markets covering phosphor copper from Korea.

INFORMATION ON NONSUBJECT COUNTRIES

In assessing whether the domestic industry is materially injured or threatened with material injury "by reason of subject imports," the legislative history states "that the Commission must examine all relevant evidence, including any known factors, other than the dumped or subsidized imports, that may be injuring the domestic industry, and that the Commission must examine those other factors (including non-subject imports) 'to ensure that it is not attributing injury from other sources to the subject imports.'"[16]

Table VII-6 presents global exports of copper master alloys (HS 7405.00) by country. This HS subheading covers all master alloys of copper, not just the subject product. Belgium and the United Kingdom are the largest exporters of master alloys of copper. However, because phosphor copper is not broken out from other master alloys of copper in the HS, global trade data do not provide a sufficient amount of specificity to determine which countries produce and export phosphor copper.

[15] ***.

[16] *Mittal Steel Point Lisas Ltd. v. United States*, Slip Op. 2007-1552 at 17 (Fed. Cir. Sept. 18, 2008), quoting from Statement of Administrative Action on Uruguay Round Agreements Act, H.R. Rep. 103-316, Vol. I at 851-52; *see also Bratsk Aluminum Smelter v. United States*, 444 F.3d 1369 (Fed. Cir. 2006).

Table VII-6
Phosphor copper: Global exports by reporting country, 2013-15

Exporter	Calendar year		
	2013	2014	2015
	Quantity (pounds)		
United States	12,254,285	9,491,901	7,265,486
Korea	4,637,839	5,167,471	5,170,914
All other major reporting exporters.--			
Belgium	25,412,214	24,542,491	26,403,191
United Kingdom	14,719,586	15,243,891	14,501,988
United Arab Emirates	1,056,906	9,026	3,332,435
Kazakhstan	3,052,958	2,695,957	2,704,160
Germany	2,383,415	2,156,489	2,272,062
Senegal	1,024,300	1,037,739	2,006,859
India	1,892,942	1,644,014	1,403,651
Japan	1,166,890	1,406,142	1,151,345
Poland	326,725	216,156	996,515
South Africa	99,457	482,920	823,498
All other exporters	14,348,353	10,729,270	3,650,366
Total global exports	82,375,869	74,823,467	71,682,470
	Value (1,000 dollars)		
United States	29,591	24,149	15,686
Korea	16,303	17,156	14,181
All other major reporting exporters.--			
Belgium	97,693	89,262	79,478
United Kingdom	48,760	48,536	37,298
United Arab Emirates	2,105	72	3,504
Kazakhstan	26,304	23,711	21,190
Germany	10,538	9,169	8,893
Senegal	1,967	1,751	1,759
India	6,746	5,657	4,502
Japan	4,700	5,640	4,224
Poland	1,420	430	1,403
South Africa	287	1,268	1,104
All other exporters	40,464	35,110	20,101
Total global exports	286,878	261,912	213,322

Table continued on next page.

Table VII-6 – Continued
Phosphor copper: Global exports by reporting country, 2013-15

Exporter	Calendar year		
	2013	2014	2015
	Unit value (dollars per pound)		
United States	2.41	2.54	2.16
Korea	3.52	3.32	2.74
All other major reporting exporters.--			
Belgium	3.84	3.64	3.01
United Kingdom	3.31	3.18	2.57
United Arab Emirates	1.99	7.97	1.05
Kazakhstan	8.62	8.80	7.84
Germany	4.42	4.25	3.91
Senegal	1.92	1.69	0.88
India	3.56	3.44	3.21
Japan	4.03	4.01	3.67
Poland	4.35	1.99	1.41
South Africa	2.89	2.63	1.34
All other exporters	2.82	3.27	5.51
Total global exports	3.48	3.50	2.98
	Share of quantity (percent)		
United States	14.9	12.7	10.1
Korea	5.6	6.9	7.2
All other major reporting exporters.--			
Belgium	30.8	32.8	36.8
United Kingdom	17.9	20.4	20.2
United Arab Emirates	1.3	0.0	4.6
Kazakhstan	3.7	3.6	3.8
Germany	2.9	2.9	3.2
Senegal	1.2	1.4	2.8
India	2.3	2.2	2.0
Japan	1.4	1.9	1.6
Poland	0.4	0.3	1.4
South Africa	0.1	0.6	1.1
All other exporters	17.4	14.3	5.1
Total global exports	100.0	100.0	100.0

Source: Official exports statistics under HTS subheading 7405.00 as reported by various national statistical authorities in the GTIS/GTA database, accessed March 6, 2017.

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
81 FR 13822, March 15, 2016	*Phosphor Copper From Korea; Institution of Antidumping Duty Investigation and Scheduling of Preliminary Phase Investigation*	https://www.federalregister.gov/documents/2016/03/15/2016-05746/phosphor-copper-from-korea-institution-of-antidumping-duty-investigation-and-scheduling-of
81 FR 19552, April 5, 2016	*Phosphor Copper from the Republic of Korea: Initiation of Less-Than-Fair-Value Investigation*	https://www.federalregister.gov/documents/2016/04/05/2016-07801/phosphor-copper-from-the-republic-of-korea-initiation-of-less-than-fair-value-investigation
81 FR 25714, April 29, 2016	*Phosphor Copper From Korea; Preliminary Determination*	https://www.federalregister.gov/documents/2016/04/29/2016-10055/phosphor-copper-from-korea
81 FR 51858, August 5, 2016	*Phosphor Copper From the Republic of Korea: Postponement of Preliminary Determination of Antidumping Duty Investigation*	https://www.federalregister.gov/documents/2016/08/05/2016-18544/phosphor-copper-from-the-republic-of-korea-postponement-of-preliminary-determination-of-antidumping
81 FR 71049, October 14, 2016	*Phosphor Copper From the Republic of Korea: Affirmative Preliminary Determination of Sales at Less-Than-Fair-Value, Negative Preliminary Determination of Critical Circumstance*	https://www.federalregister.gov/documents/2016/10/14/2016-24818/phosphor-copper-from-the-republic-of-korea-affirmative-preliminary-determination-of-sales-at-less
81 FR 74763, October 27, 2016	*Phosphor Copper From the Republic of Korea: Postponement of Final Determination of Sales at Less-Than-Fair-Value*	https://www.federalregister.gov/documents/2016/10/27/2016-26027/phosphor-copper-from-the-republic-of-korea-postponement-of-final-determination-of-sales-at-less-than
81 FR 78852, November 9, 2016	*Phosphor Copper from Korea; Scheduling of the Final Phase of an Antidumping Duty Investigation*	https://www.federalregister.gov/documents/2016/11/09/2016-27016/phosphor-copper-from-korea-scheduling-of-the-final-phase-of-an-antidumping-duty-investigation
81 FR 12433, March 3, 2017	*Phosphor Copper From the Republic of Korea: Final Affirmative Determination of Sales at Less Than Fair Value and Negative Final Determination of Critical Circumstances*	https://www.federalregister.gov/documents/2017/03/03/2017-04130/phosphor-copper-from-the-republic-of-korea-final-affirmative-determination-of-sales-at-less-than

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: Phosphor Copper from Korea

Inv. No.: 731-TA-1314 (Final)

Date and Time: February 28, 2017 - 9:30 a.m.

Sessions were held in connection with this investigation in the Main Hearing Room (Room 101), 500 E Street, S.W., Washington, DC.

OPENING REMARKS:

Petitioner (**Daniel B. Pickard**, Wiley Rein LLP)
Respondents (**David Schwartz**, Thompson Hine LLP)

In Support of the Imposition of Antidumping Duty Order:

Wiley Rein LLP
Washington, DC
on behalf of

Metallurgical Products Company

Michael H. Goodman, President, Metallurgical Products Company

Erica Schafer, Sales Associate, Metallurgical Products Company

Holly Hart, Assistant to the President, Legislative Director, United Steelworkers ("USW")

Daniel B. Pickard)
) – OF COUNSEL
Usha Neelakantan)

In Opposition to the Imposition of
Antidumping Duty Order:

Thompson Hine LLP
Washington, DC
on behalf of

J.W. Harris Co. Inc. d/b/a The Harris Products Group (A Lincoln Electric Company)
Bongsan Co., Ltd

Thomas Cavanaugh, Supply Chain Manager, J.W. Harris Co. Inc.

Jennifer Lutz, Senior Economist, Economic Consulting Services, LLC

Curtis Eward, Staff Economist, Economic Consulting Services, LLC

David Schwartz) – OF COUNSEL

REBUTTAL/CLOSING REMARKS:

Petitioner (**Daniel B. Pickard**, Wiley Rein LLP)
Respondents (**David Schwartz**, Thompson Hine LLP; and **Jennifer Lutz**, Economic Consulting Services, LLC)

-END-

APPENDIX C

SUMMARY DATA

Table C-1
Phosphor copper: Summary data concerning the U.S. market, 2013-15, January to September 2015, and January to September 2016

* * * * * * *

APPENDIX D

PRICE DATA WITH COPPER PRICES REMOVED

Pricing in the phosphor copper market consists of two parts: the price of copper based on a price index and a fabrication adder or premium.[1] Domestic sources use COMEX as the pricing index and the rest of the world, including Korea, uses LME prices as the pricing index.[2] Price differences between the pricing product data and copper index prices are presented in table D-1 and figure D-1.[3] Overall, domestic price differences were higher in the last quarter of the period than in the first quarter for both products, although not for the entire period. Domestic price differences were increasing into the first half of 2015 for both products 1 and 2. Price differences peaked in the second or third quarters of 2015, and price differences have become smaller in 2016. Because the COMEX and LME copper price indices track each other so closely, the gap between domestic and Korean prices in this appendix are very similar to the gaps between domestic and Korean prices presented in part V.

Table D-1
Phosphor copper: Weighted-average f.o.b. price differences between domestic and imported products 1 and 2 and average copper index prices, by quarters, January 2013-September 2016

* * * * * * *

Figure D-1
Phosphor copper: Weighted-average f.o.b. price differences between domestic and imported products 1 (shot) and 2 (ingot) and average copper index prices, by quarters, January 2013-September 2016

* * * * * * *

[1] Hearing transcript, p. 24 (Goodman).
[2] Hearing transcript, p. 100 (Lutz) and 115 (Cavanaugh).
[3] Overall, domestic price differences would give approximations to fabrication adders, but not exact fabrication adders. The exact price difference for any transaction would be determined by the copper price that was relevant at that time or day rather than a quarterly or monthly average index price.