Pure Granular Magnesium from China

Investigation No. 731-TA-895 (Third Review)

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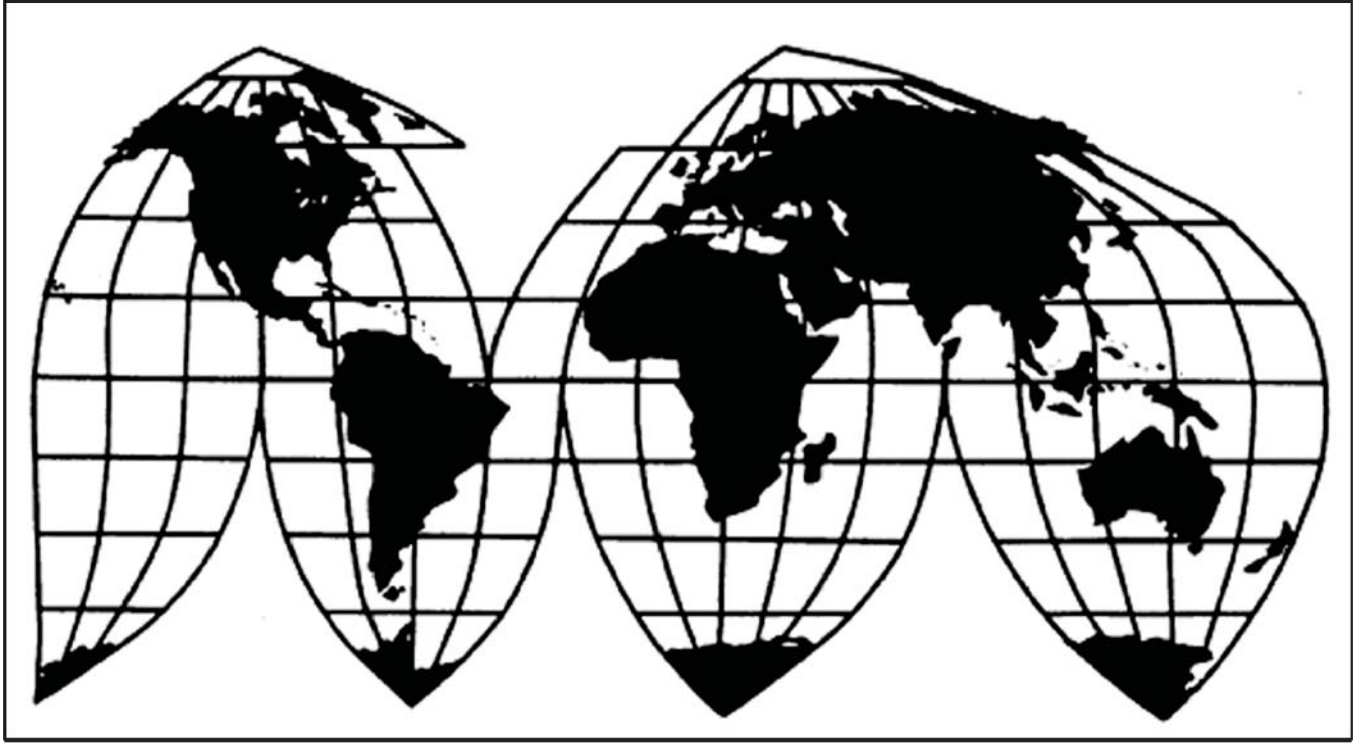
U.S. International Trade Commission



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U.S. International Trade Commission

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UNITED STATES INTERNATIONAL TRADE COMMISSION

Investigation No. 731-TA-895 (Third Review)
Pure Granular Magnesium from China

DETERMINATION

On the basis of the record[1] developed in the subject five-year review, the United States International Trade Commission ("Commission") determines, pursuant to the Tariff Act of 1930 ("the Act"), that revocation of the antidumping duty order on pure granular magnesium from China would be likely to lead to continuation or recurrence of material injury to an industry in the United States within a reasonably foreseeable time.

BACKGROUND

The Commission, pursuant to section 751(c) of the Act (19 U.S.C. 1675(c)), instituted this review on September 1, 2017 (82 F.R. 41651) and determined on December 5, 2017 that it would conduct an expedited review (83 F.R. 4269, January 30, 2018).

[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 this five-year review, we determine under section 751(c) of the Tariff Act of 1930, as amended ("the Tariff Act"), that revocation of the antidumping duty order on pure granular magnesium from China would be likely to lead to continuation or recurrence of material injury to an industry in the United States within a reasonably foreseeable time.[1]

I. Background

The Original Investigations: On October 17, 2000, Magnesium Corporation of America ("Magcorp") and the United Steelworkers of America, Local 8319, and the USWA International filed antidumping duty petitions on imports of pure magnesium from Israel and Russia and on imports of pure granular magnesium from China, and a countervailing duty petition on imports of pure magnesium from Israel.[2] On September 27, 2001, Commerce determined that pure magnesium from Russia was not sold in the United States at less than fair value.[3] Accordingly, the Commission terminated its investigation with respect to Russia.[4] On November 14, 2001, the Commission found that an industry in the United States was materially injured by reason of less than fair value imports of pure granular magnesium from China.[5] It also found that an industry in the United States was not materially injured or threatened with material injury, and that the establishment of an industry in the United States was not materially retarded, by reason of imports from Israel of pure magnesium that were found to have been sold at less than fair value and subsidized by the government of Israel.[6] Commerce issued an antidumping order on imports of pure granular magnesium from China on November 19, 2001.[7]

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[1] While there were some data revisions to the staff report after the closing of the record, we note that such revisions did not affect any Commissioner's analysis or vote in this review. *See* EDIS Doc. 637584.

[2] *Pure Magnesium from China, Israel, and Russia*, 65 Fed. Reg. 63888 (Oct. 25, 2000).

[3] *Notice of Final Determination of Sales at Not Less Than Fair Value: Pure Magnesium From the Russian Federation*, 66 Fed. Reg. 49347, 49349 (Sept. 27, 2001).

[4] *Pure Magnesium From Russia*, 66 Fed. Reg. 50680 (Sept. 27, 2001). Subject imports from Russia were not eligible for cumulation because of Commerce's negative final antidumping duty determination concerning those imports. *See* 19 U.S.C. §1677 (7)(G)(ii)(II); *Pure Magnesium From China and Israel*, Inv. Nos. 701-TA-403 and 731-TA-895 to 896 (Final), USITC Pub. 3467 (Nov. 2001) ("Original Determinations") at 14 n.71.

[5] *Pure Magnesium From China and Israel*, 66 Fed. Reg. 58162 (Nov. 20, 2001); Original Determinations, USITC Pub. 3467.

[6] 66 Fed. Reg. 58162; Original Determinations, USITC Pub. 3467. Pursuant to 19 U.S.C. § 1677(7)(G)(ii)(IV), the Commission was required to first determine whether there was material injury, or the threat thereof, to a domestic industry by reason of subject imports from Israel alone. Because the Commission reached a negative determination with respect to Israel, subject imports from Israel were not eligible for cumulation with subject imports from China. Original Determinations, USITC Pub. 3467 at 14-15.

[7] 66 Fed. Reg. 57936 (Nov. 19, 2001).

The First Review: The Commission instituted the first five-year review of the antidumping duty order on pure granular magnesium from China in October 2006.[8] It conducted an expedited review and reached an affirmative determination.[9] Commerce subsequently issued a notice continuing the order on March 26, 2007.[10]

The Second Review: The Commission instituted the second five-year review of the antidumping duty order on pure granular magnesium from China in February 2012.[11] It conducted an expedited review and reached an affirmative determination.[12] Commerce subsequently issued a notice continuing the order on October 17, 2012.[13]

The Current Review: The Commission instituted the current five-year review on September 1, 2017.[14] The Commission received a joint response to its notice of institution filed by US Magnesium (the successor company to Magcorp) and Local 8319 ("domestic interested parties").[15] No respondent interested party filed a response. On December 5, 2017, the Commission found the domestic interested party group response adequate and the respondent interested party group response inadequate.[16] It determined to conduct an expedited review.[17]

Other Proceedings involving the Same or Similar Merchandise: In addition to the current proceeding involving pure granular magnesium from China, Commerce and the Commission have conducted several proceedings involving various magnesium products.[18] The only orders

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[8] *Pure Magnesium From China*, 71 Fed. Reg. 58001 (Oct. 2, 2006).

[9] *Pure Magnesium from China*, Inv. No. 731-TA-895 (Review), USITC Pub. 3908 (March 2007) ("First Review Determination").

[10] *Pure Magnesium in Granular Form from the People's Republic of China: Continuation of Antidumping Duty Order*, 72 Fed. Reg. 14076 (March 26, 2007).

[11] *Pure Magnesium From China; Institution of a Five-Year Review,* 77 Fed. Reg. 5049 (Feb. 1, 2012).

[12] *Pure Magnesium (Granular) from China*, Inv. No. 731-TA-895 (Second Review), USITC Pub. 4350 (September 2012) ("Second Review Determination").

[13] *Pure Magnesium in Granular Form from the People's Republic of China: Continuation of Antidumping Duty Order*, 77 Fed. Reg. 63787 (Oct. 17, 2012).

[14] *Pure Magnesium (Granular) From China; Institution of a Five-Year Review*, 82 Fed. Reg. 41651 (Sept. 1, 2017).

[15] *Domestic Industry's Response to the Notice of Institution*, EDIS Doc. 624571 (Oct. 2, 2017) ("Response").

[16] Explanation of Commission Determination on Adequacy, EDIS Doc. 631050 (Dec. 5, 2017).

[17] Explanation of Commission Determination on Adequacy. Vice Chairman David S. Johanson voted for a full review. The Commission has determined this review is extraordinarily complicated and therefore determined to exercise its authority to extend the review period by up to 90 days pursuant to 19 U.S.C. § 1675(c)(5)(B). *Id.*

[18] *See e.g.*, 71 Fed. Reg. 38382 (Jul. 6, 2006) (revoking countervailing duty order on imports of pure and alloy magnesium from Canada following negative second review of the order); 69 Fed. Reg. 70649 (Dec. 7, 2004) (revoking antidumping duty order on imports of pure magnesium from Canada); 65 Fed. Reg. 41944 (July 7, 2000) (revoking antidumping duty order on imports of pure magnesium from Russia after no domestic interested party responded to notice instituting first review); 64 Fed. Reg. 46182 (Aug. 24, 1999) (revoking antidumping duty order on imports of pure magnesium from Ukraine (Continued…)

currently in effect involve imports of alloy magnesium from China and pure magnesium (ingot) from China.[19]

II. Domestic Like Product and Industry

A. Domestic Like Product

In making its determination under section 751(c) of the Tariff Act, the Commission defines the "domestic like product" and the "industry."[20] The Tariff Act defines "domestic like product" as "a product which is like, or in the absence of like, most similar in characteristics and uses with, the article subject to an investigation under this subtitle."[21] The Commission's practice in five-year reviews is to examine the domestic like product definition from the original investigation and consider whether the record indicates any reason to revisit the prior findings.[22]

Commerce has defined the imported merchandise within the scope of the order under review as follows:

> *** pure magnesium products, regardless of chemistry, including, without limitation, raspings, granules, turnings, chips, powder, and briquettes, except as noted above.

(…Continued)
following negative final determination by Commission on remand); 60 Fed. Reg. 26456 (May 17, 1995) (not imposing antidumping duty order on imports of alloy magnesium from Russia after Commission's negative final determination); 56 Fed. Reg. 49748 (Oct. 1, 1991) (terminating investigation of imports of pure magnesium from Norway after withdrawal of petition).

[19] In their respective fourth reviews of the antidumping duty order on imports of pure magnesium (ingot) from China, Commerce and the Commission reached affirmative determinations, and Commerce issued a notice continuing the order. *See, e.g.*, *Pure Magnesium from China*, Inv. No. 731-TA-696 (Fourth Review), USITC Pub. 4678 (Mar. 2017); 82 Fed. Reg. 18114 (Apr. 17, 2017). Commerce and the Commission also made affirmative determinations in their second reviews of the antidumping duty order on imports of alloy magnesium from China, and Commerce issued a notice continuing the order. *See, e.g.*, *Alloy Magnesium from China*, Inv. No. 731-TA-1071 (Second Review), USITC Pub. 4618 (Jul. 2016); 81 Fed. Reg. 47351 (Jul. 21, 2016).

[20] 19 U.S.C. § 1677(4)(A).

[21] 19 U.S.C. § 1677(10); *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); *Timken Co. v. United States*, 913 F. Supp. 580, 584 (Ct. Int'l Trade 1996); *Torrington Co. v. United States*, 747 F. Supp. 744, 748-49 (Ct. Int'l Trade 1990), *aff'd*, 938 F.2d 1278 (Fed. Cir. 1991); *see also* S. Rep. No. 249, 96th Cong., 1st Sess. 90-91 (1979).

[22] *See*, *e.g.*, *Internal Combustion Industrial Forklift Trucks from Japan*, Inv. No. 731-TA-377 (Second Review), USITC Pub. 3831 at 8-9 (Dec. 2005); *Crawfish Tail Meat from China*, Inv. No. 731-TA-752 (Review), USITC Pub. 3614 at 4 (July 2003); *Steel Concrete Reinforcing Bar from Turkey*, Inv. No. 731-TA-745 (Review), USITC Pub. 3577 at 4 (Feb. 2003).

> Pure magnesium includes: (1) Products that contain at least 99.95 percent primary magnesium, by weight (generally referred to as "ultra pure" magnesium); (2) products that contain less than 99.95 percent but not less than 99.8 percent primary magnesium, by weight (generally referred to as "pure" magnesium); (3) chemical combinations of pure magnesium and other material(s) in which the pure magnesium content is 50 percent or greater, but less than 99.8 percent, by weight, that do not conform to an "ASTM Specification for Magnesium Alloy" (generally referred to as "off specification pure" magnesium); and (4) physical mixtures of pure magnesium and other material(s) in which the pure magnesium content is 50 percent or greater, but less than 99.8 percent, by weight. Excluded from this *Order* are mixtures containing 90 percent or less pure magnesium by weight and one or more of certain non-magnesium granular materials to make magnesium-based reagent mixtures. The non-magnesium granular materials of which Commerce is aware used to make such excluded reagents are: Lime, calcium metal, calcium silicon, calcium carbide, calcium carbonate, carbon, slag coagulants, fluorspar, nephaline syenite, feldspar, aluminum, alumina (Al_2O_3), calcium aluminate, soda ash, hydrocarbons, graphite, coke, silicon, rare earth metals/mischmetal, cryolite, silica/fly ash, magnesium oxide, periclase, ferroalloys, dolomitic lime, and colemanite. A party importing a magnesium-based reagent which includes one or more materials not on this list is required to seek a scope clarification from Commerce before such a mixture may be imported free of antidumping duties.[23]

Magnesium, a silver-white metallic element, is the lightest of all structural metals with a density approximately 63 percent that of aluminum, the principal metal with which it competes in the U.S. market.[24] Magnesium's light weight and high vibrational-dampening properties have encouraged research to develop magnesium-based alloys with improved physical and

[23] *Pure Magnesium in Granular Form From the People's Republic of China: Final Results of Expedited Third Sunset Review of the Antidumping Duty Order*, 83 Fed. Reg. 1017 (Jan. 9, 2018). There are also existing antidumping duty orders on pure magnesium in ingot form from China. *Pure Magnesium From the People's Republic of China: Continuation of Antidumping Duty Order*, 82 Fed. Reg. 18114 (Apr. 17, 2017). The scope of the order in the current review excludes pure magnesium that is already covered by the existing order on pure magnesium in ingot form. 83 Fed. Reg. at 1017.

[24] Confidential Report, Memorandum INV-PP-151 (Nov. 21, 2017) as revised by Memorandum INV-PP-157 (Dec. 4, 2017)("CR") at I-23; Public Report ("PR") at I-15.

mechanical properties for use as a structural metal in applications where minimizing weight is an important design consideration.[25] The principal end-use applications for magnesium in the United States in 2015 were, in descending order, metals production from reduction of metal-halide compounds, aluminum alloying, die casting, and iron and steel desulfurization.[26]

Magnesium is available in two principal forms: pure and alloy.[27] Pure magnesium in unwrought form contains at least 99.8 percent magnesium by weight.[28] Pure magnesium is widely used in commercial and industrial applications because it is easily machined and lightweight, has a high strength-to-weight ratio, has special chemical and electrical properties, and has special metallurgical and chemical properties that allow it to alloy well with metals, such as aluminum.[29] Pure magnesium is used in a variety of applications, including the production of titanium sponge.[30]

Alloy magnesium consists of magnesium and other metals, typically aluminum and zinc, containing less than 99.8 percent magnesium by weight but more than 50 percent magnesium by weight.[31] Alloy magnesium has certain properties that improve its strength, ductility, workability, corrosion resistance, density, and castability compared to pure magnesium.[32] It is principally used in structural applications, primarily in castings (die, permanent mold, and sand) and extrusions for the automotive industry.[33]

Pure and alloy magnesium are produced as either primary or secondary magnesium. Primary magnesium is produced by decomposing raw materials into magnesium metal.[34] Secondary magnesium is produced by recycling magnesium-based scrap.[35]

Magnesium may be either cast or granular.[36] Cast magnesium is the solid, cooled form (as ingots) of molten magnesium metal. Granular magnesium is cast magnesium that has been ground, chipped, crushed, machined, or atomized into raspings, granules, turnings, chips, powder, or briquettes and includes all non-molten physical forms of magnesium other than castings.[37] Granular magnesium may be either pure or magnesium alloy, but is typically pure or off-specification pure magnesium (magnesium not meeting ASTM specifications for magnesium

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[25] CR at I-23, PR at I-15.

[26] CR at I-23-24, PR at I-15.

[27] CR at I-24-26, PR at I-15-16.

[28] CR at I-24, PR at I-15-I-16.

[29] CR at I-24, PR at I-16.

[30] CR at I-24-25, PR at I-16. Other uses for pure magnesium include aluminum alloys for use in beverage cans, die-cast automotive parts, iron and steel desulfurization, reducing agents for producing various other nonferrous metals, and magnesium anodes for corrosion protection of iron and steel in underground pipes and water tanks in various marine applications. *Id.*

[31] CR at I-25, PR at I-16.

[32] CR at I-25, PR at I-16.

[33] CR at I-25, PR at I-16.

[34] CR at I-26, PR at I-17.

[35] CR at I-26, PR at I-17.

[36] CR at I-27-28, PR at I-18.

[37] CR at I-28, PR at I-18.

alloy).[38] Granular magnesium is typically used in the production of magnesium-based desulfurizing reagent mixtures that are used in steelmaking to reduce the sulfur content of steel.[39]

1. The Original Investigations and Prior Five-Year Reviews

In the original investigations on imports of pure granular magnesium, the Commission defined a single domestic like product, pure magnesium that includes both granular magnesium and magnesium ingot.[40] It found that granular magnesium and magnesium ingot were produced in a continuum of forms and sizes, shared the same chemical properties, were sold in the same channels of distribution, and were interchangeable for significant end uses.[41] It found that although grinding operations generally took place in separate facilities using separate workers, the same production facilities, processes, and workers were used to produce both granular magnesium and magnesium ingot up to the grinding stage.[42] The Commission observed, however, that the record contained some support for finding two domestic like products.[43]

In the expedited first five-year review, the Commission expanded the definition of the domestic like product to encompass alloy magnesium and secondary magnesium, as it had in its two most recent unrelated determinations involving magnesium.[44] It explained that US Magnesium had asked the Commission to define the domestic like product in this way, that no party had argued against the definition, and that there was no information on the record that would call into question the Commission's decision to define the domestic like product in the same manner as in two recent determinations.[45]

In the expedited second five-year review, the Commission again defined the domestic like product as consisting of pure and alloy magnesium, including primary and secondary

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[38] CR at I-28, PR at I-18. Two Commissioners defined two domestic like products, pure granular magnesium and pure magnesium ingot.

[39] CR at I-28-29, PR at I-18.

[40] Original Determinations, USITC Pub. 3467 at 10. Two Commissioners defined two domestic like products, pure granular magnesium and pure magnesium ingot. *Id*. at 1 n.2.

[41] Original Determinations, USITC Pub. 3467 at 8-9.

[42] Original Determinations, USITC Pub. 3467 at 9.

[43] Original Determinations, USITC Pub. 3467 at 8.

[44] First Review Determination, USITC Pub. 3908 at 12. These determinations were *Magnesium From China and Russia*, Inv. Nos. 731-TA-1071-1072 (Final), USITC Pub. 3763 (April 2005) and *Pure and Alloy Magnesium From Canada and Pure Magnesium from China*, Inv. Nos. 701-TA-309-A-B and 731-TA-696 (Second Review), USITC Pub. 3859 (July 2006)("Canada/China Second Review") (in which the Commission split three-three on the question of domestic like product).

[45] Original Determinations, USITC Pub. 3467 at 6-8; First Review Determination, USITC Pub. 3908 at 12.

magnesium in both cast and granular forms.[46] The Commission observed that this definition conformed with the most recent full review involving a magnesium product.[47] [48]

2. The Current Review

In the current review, domestic interested parties state that they agree with the definition of the domestic like product in the prior reviews.[49] There is no new information in the record indicating that the characteristics of the product at issue have changed since the prior review determinations.[50] We therefore again define the domestic like product as consisting of pure and alloy magnesium, including primary and secondary magnesium and cast and granular magnesium.

B. Domestic Industry

Section 771(4)(A) of the Tariff Act defines the relevant industry 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."[51] 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.

1. The Original Investigations and Prior Five-Year Reviews

In its original determinations, the Commission examined whether grinding operations constituted sufficient production-related activity to qualify grinders as domestic producers,

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[46] Second Review Determination, USITC Pub. 4350 at 7-8.

[47] Second Review Determination, USITC Pub. 4350 at 7. The relevant review was of *Magnesium from China and Russia*, Inv. Nos 731-TA-1071 and 1072 (Review), USITC Pub. 4214 (Feb. 2011).

[48] In its most recent review of the antidumping duty order on imports of pure magnesium (ingot) from China and in its most recent review of the antidumping duty order on imports of alloy magnesium from China, the Commission also defined a single domestic like product consisting of pure and alloy magnesium, including primary and secondary magnesium in both cast and granular forms. *Pure Magnesium (Ingot) from China*, Inv. No. 731-TA-696 (Fourth Review), USITC Pub. 4678 at 5-9 (Mar. 2017); *Alloy Magnesium from China*, Inv. No. 731-TA-1071 (Second Review), USITC Pub. 4618 at 4-7 (July 2016).

[49] Response at 27.

[50] *See generally* CR at I-23-I-34, PR at I-15-I-22.

[51] 19 U.S.C. § 1677(4)(A). The definitions in 19 U.S.C. § 1677 are applicable to the entire subtitle containing the antidumping and countervailing duty laws, including 19 U.S.C. §§ 1675 and 1675a. *See* 19 U.S.C. § 1677.

finding that they did.[52] Based on its definition of the domestic like product, the Commission defined a corresponding industry that included all producers of pure magnesium, except for domestic producer ESM, on the basis that appropriate circumstances existed to exclude it from the domestic industry as a related party.[53]

In the first five-year review, the Commission defined the domestic industry as all domestic producers of pure and alloy magnesium, including primary and secondary magnesium, and magnesium in ingot and granular form.[54] The Commission again included grinders in the domestic industry.[55] The Commission noted that there was limited information in the record concerning related party issues, so it was unable to resolve whether any domestic producers were related parties, let alone whether appropriate circumstances existed to exclude any of these producers from the domestic industry.[56]

In the second five-year review, the Commission continued to find that grinders were a part of the domestic industry.[57] It also found that there was no information on the record sufficient to make a related party determination with respect to two entities which US Magnesium alleged imported subject merchandise.[58] The Commission defined the domestic industry as consisting of all domestic producers, including grinders, of pure and alloy magnesium, including primary and secondary magnesium, and magnesium in ingot and granular form.[59]

2. The Current Review

In the current review, domestic interested parties state that they generally agree with the definition of the domestic industry as defined in the prior reviews.[60] There are no related

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[52] Original Determinations, USITC Pub. 3467 at 9-11. It determined that one firm did not engage in sufficient domestic production of the domestic like product and did not include it as part of the domestic industry. *Id.* at 11.

[53] Original Determinations, USITC Pub. 3467 at 12.

[54] First Review Determination, USITC Pub. 3908 at 16.

[55] First Review Determination, USITC Pub. 3908 at 14-15. It noted that the limited information in that review relating to the production-related activities of grinders did not indicate that the nature of the activities had changed since the original investigations. *Id.*

[56] First Review Determination, USITC Pub. 3908 at 15-16.

[57] Second Review Determination, USITC Pub. 4350 at 8.

[58] Second Review Determination, USITC Pub. 4350 at 8.

[59] Second Review Determination, USITC Pub. 4350 at 8.

[60] *See* Response at 27. Domestic interested parties disagree with the Commission's prior finding that die-casters that recycle their own scrap generated in their die-casting operations should be considered domestic producers of magnesium. Response at 27. Because of the expedited nature of this review, there is limited information on the record regarding die casters' current production-related activities. Because of the absence of any new information on the issue, there is no basis in the current record to make any finding about the nature of die casters' production-related activities contrary to the second reviews.

party issues in this review.[61] Accordingly, we again define a single domestic industry consisting of all domestic producers, including grinders, of pure and alloy magnesium, including primary and secondary magnesium, and magnesium in ingot and granular form.

III. Revocation of the Antidumping Duty Order Would Likely Lead to Continuation or Recurrence of Material Injury Within a Reasonably Foreseeable Time

A. Legal Standards

In a five-year review conducted under section 751(c) of the Tariff Act, Commerce will revoke an antidumping or countervailing duty order unless: (1) it makes a determination that dumping or subsidization is likely to continue or recur and (2) the Commission makes a determination that revocation of the antidumping or countervailing duty order "would be likely to lead to continuation or recurrence of material injury within a reasonably foreseeable time."[62] The Uruguay Round Agreements Act ("URAA") Statement of Administrative Action ("SAA") states that "under the likelihood standard, the Commission will engage in a counterfactual analysis; it must decide the likely impact in the reasonably foreseeable future of an important change in the status quo – the revocation or termination of a proceeding and the elimination of its restraining effects on volumes and prices of imports."[63] Thus, the likelihood standard is prospective in nature.[64] The U.S. Court of International Trade has found that "likely," as used in the five-year review provisions of the Act, means "probable," and the Commission applies that standard in five-year reviews.[65]

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[61] CR at I-41, PR at I-27.

[62] 19 U.S.C. § 1675a(a).

[63] SAA, H.R. Rep. 103-316, vol. I at 883-84 (1994). The SAA states that "{t}he likelihood of injury standard applies regardless of the nature of the Commission's original determination (material injury, threat of material injury, or material retardation of an industry). Likewise, the standard applies to suspended investigations that were never completed." *Id*. at 883.

[64] While the SAA states that "a separate determination regarding current material injury is not necessary," it indicates that "the Commission may consider relevant factors such as current and likely continued depressed shipment levels and current and likely continued {sic} prices for the domestic like product in the U.S. market in making its determination of the likelihood of continuation or recurrence of material injury if the order is revoked." SAA at 884.

[65] *See NMB Singapore Ltd. v. United States*, 288 F. Supp. 2d 1306, 1352 (Ct. Int'l Trade 2003) ("'likely' means probable within the context of 19 U.S.C. § 1675(c) and 19 U.S.C. § 1675a(a)"), *aff'd mem.*, 140 Fed. Appx. 268 (Fed. Cir. 2005); *Nippon Steel Corp. v. United States*, 26 CIT 1416, 1419 (2002) (same); *Usinor Industeel, S.A. v. United States*, 26 CIT 1402, 1404 nn.3, 6 (2002) ("more likely than not" standard is "consistent with the court's opinion;" "the court has not interpreted 'likely' to imply any particular degree of 'certainty'"); *Indorama Chemicals (Thailand) Ltd. v. United States*, 26 CIT 1059, 1070 (2002) ("standard is based on a likelihood of continuation or recurrence of injury, not a certainty"); (Continued…)

The statute states that "the Commission shall consider that the effects of revocation or termination may not be imminent, but may manifest themselves only over a longer period of time."[66] According to the SAA, a "'reasonably foreseeable time' will vary from case-to-case, but normally will exceed the 'imminent' timeframe applicable in a threat of injury analysis in original investigations."[67]

Although the standard in a five-year review is not the same as the standard applied in an original investigation, it contains some of the same fundamental elements. The statute provides that the Commission is to "consider the likely volume, price effect, and impact of imports of the subject merchandise on the industry if the orders are revoked or the suspended investigation is terminated."[68] It directs the Commission to take into account its prior injury determination, whether any improvement in the state of the industry is related to the order or the suspension agreement under review, whether the industry is vulnerable to material injury if an order is revoked or a suspension agreement is terminated, and any findings by Commerce regarding duty absorption pursuant to 19 U.S.C. § 1675(a)(4).[69] The statute further provides that the presence or absence of any factor that the Commission is required to consider shall not necessarily give decisive guidance with respect to the Commission's determination.[70]

In evaluating the likely volume of imports of subject merchandise if an order under review is revoked and/or a suspended investigation is terminated, the Commission is directed to consider whether the likely volume of imports would be significant either in absolute terms or relative to production or consumption in the United States.[71] In doing so, the Commission must consider "all relevant economic factors," including four enumerated factors: (1) any likely increase in production capacity or existing unused production capacity in the exporting country; (2) existing inventories of the subject merchandise, or likely increases in inventories; (3) the existence of barriers to the importation of the subject merchandise into countries other than the United States; and (4) the potential for product shifting if production facilities in the foreign

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(…Continued)
Usinor v. United States, 26 CIT 767, 794 (2002) ("'likely' is tantamount to 'probable,' not merely 'possible'").

[66] 19 U.S.C. § 1675a(a)(5).

[67] SAA at 887. Among the factors that the Commission should consider in this regard are "the fungibility or differentiation within the product in question, the level of substitutability between the imported and domestic products, the channels of distribution used, the methods of contracting (such as spot sales or long-term contracts), and lead times for delivery of goods, as well as other factors that may only manifest themselves in the longer term, such as planned investment and the shifting of production facilities." *Id*.

[68] 19 U.S.C. § 1675a(a)(1).

[69] 19 U.S.C. § 1675a(a)(1). Commerce has made no duty absorption findings. *Issues and Decision Memorandum for the Final Results of the Expedited Third Sunset Review of the Antidumping Duty Order on Pure Magnesium in Granular Form from the People's Republic of China*, A-570-864, ACCESS No. 3658297-01, Department of Commerce (Jan. 3, 2018) at 3-4; CR at I-38-39, PR at I-25.

[70] 19 U.S.C. § 1675a(a)(5). Although the Commission must consider all factors, no one factor is necessarily dispositive. SAA at 886.

[71] 19 U.S.C. § 1675a(a)(2).

country, which can be used to produce the subject merchandise, are currently being used to produce other products.[72]

In evaluating the likely price effects of subject imports if an order under review is revoked and/or a suspended investigation is terminated, the Commission is directed to consider whether there is likely to be significant underselling by the subject imports as compared to the domestic like product and whether the subject imports are likely to enter the United States at prices that otherwise would have a significant depressing or suppressing effect on the price of the domestic like product.[73]

In evaluating the likely impact of imports of subject merchandise if an order under review is revoked and/or a suspended investigation is terminated, the Commission is directed to consider all relevant economic factors that are likely to have a bearing on the state of the industry in the United States, including but not limited to the following: (1) likely declines in output, sales, market share, profits, productivity, return on investments, and utilization of capacity; (2) likely negative effects on cash flow, inventories, employment, wages, growth, ability to raise capital, and investment; and (3) likely negative effects on the existing development and production efforts of the industry, including efforts to develop a derivative or more advanced version of the domestic like product.[74] All relevant economic factors are to be considered within the context of the business cycle and the conditions of competition that are distinctive to the industry. As instructed by the statute, we have considered the extent to which any improvement in the state of the domestic industry is related to the orders under review and whether the industry is vulnerable to material injury upon revocation.[75]

No respondent interested party participated in this expedited review. The record, therefore, contains limited new information with respect to the magnesium industry in China. There also is limited information on the magnesium market in the United States in the current review. Accordingly, for our determination, we rely as appropriate on the facts available from the original investigation and prior reviews, and the limited new information on the record in this third five-year review.

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[72] 19 U.S.C. § 1675a(a)(2)(A-D).

[73] *See* 19 U.S.C. § 1675a(a)(3). The SAA states that "{c}onsistent with its practice in investigations, in considering the likely price effects of imports in the event of revocation and termination, the Commission may rely on circumstantial, as well as direct, evidence of the adverse effects of unfairly traded imports on domestic prices." SAA at 886.

[74] 19 U.S.C. § 1675a(a)(4).

[75] The SAA states that in assessing whether the domestic industry is vulnerable to injury if the order is revoked, 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 may also demonstrate that an industry is facing difficulties from a variety of sources and is vulnerable to dumped or subsidized imports." SAA at 885.

B. Conditions of Competition and the Business Cycle

In evaluating the likely impact of the subject imports on the domestic industry if an order is revoked, the statute directs the Commission to consider all relevant economic factors "within the context of the business cycle and conditions of competition that are distinctive to the affected industry."[76] The following conditions of competition inform our determination.

1. Demand Conditions

In the original investigations, the Commission observed that apparent U.S. consumption for magnesium ingot and granular magnesium declined. It also found that demand for pure magnesium ingot depended largely on the demand for aluminum, particularly aluminum sheet used in the production of beverage cans and other packaging.[77]

In the first five-year review, the Commission found that demand for pure magnesium continued to be largely derived from the demand for its end uses and that apparent U.S. consumption for magnesium ingot and granular magnesium declined.[78]

In the second five-year review, the Commission found that the drivers of demand and principal end uses for magnesium remained largely the same and that demand for magnesium in those end uses in the United States generally tracked overall economic activity.[79] The Commission also observed that apparent U.S. consumption of magnesium fluctuated but declined over the period of review, with some indication that it would increase in the future.[80]

In this third five-year review, demand for magnesium continues to track demand for downstream products and therefore remains tied to overall economic activity in the United States.[81] Apparent U.S. consumption of magnesium was *** MT in 2016.[82] Domestic interested parties argue that future demand is likely to be to be weak given overall growth forecasts for the U.S. and global markets.[83] Moreover, they assert that there has been a significant reduction in demand for pure magnesium in the U.S. market as a result of the announcement by Allegheny Technologies Incorporated ("ATI") that it is closing its titanium sponge production facility in Rowley, Utah; ***.[84]

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[76] 19 U.S.C. § 1675a(a)(4).

[77] Original Determinations, USITC Pub. 3467 at 17.

[78] First Review Determination, USITC Pub. 3908 at 19.

[79] Second Review Determination, USITC Pub. 4350 at 10.

[80] Second Review Determination, USITC Pub. 4350 at 10-11.

[81] CR at I-48, PR at I-31.

[82] CR/PR at Table I-5. We observe that apparent U.S. consumption data in the current review is not comparable to that in the original investigations and prior reviews due to differences in coverage. Apparent U.S. consumption of magnesium was *** MT in 2000, *** MT in 2005, and *** MT in 2011. *Id.*

[83] *See* Response at 26-27.

[84] Response at 27. They contend that ATI's titanium sponge facility ***. *Id.*

2. Supply Conditions

In the original investigations, the Commission found that three producers produced magnesium ingot in the United States and that three grinders produced granular magnesium.[85] In the first five-year review, the Commission found that there was one producer of pure and alloy magnesium (US Magnesium), three producers engaged in grinding operations, and at least three known producers of secondary magnesium in the United States.[86]

In the second five-year review, the Commission observed that the U.S. market continued to be supplied by the domestic like product, subject imports, and nonsubject imports.[87] It also found that there were ten domestic producers of the domestic like product (including producers of primary and secondary magnesium, grinders, and die-casters), with US Magnesium being the largest domestic producer.[88] It further found that US Magnesium had increased its capacity by over 30 percent since the imposition of the antidumping duty order and was engaged in further increasing its capacity.[89] It observed that producers of primary magnesium had a strong incentive to maintain a continuous level of production to avoid deterioration and significant rebuilding costs of the electrolytic cells used to produce primary magnesium.[90]

In this third five-year review, the domestic industry's share of apparent U.S. consumption was *** percent in 2016.[91] Subject and nonsubject imports' shares of apparent U.S. consumption in 2016 were *** and *** percent, respectively.[92] No purchaser responding to the questionnaire that staff circulated in the adequacy phase identified changes in technology or production methods that affected the availability of magnesium, while one identified and anticipated changes in the ability to increase production of magnesium.[93]

In response to the Commission's notice of institution, the domestic interested parties identified nine firms as U.S. producers of the domestic like product, in addition to US Magnesium.[94] It is unclear whether the overall domestic industry's capacity has increased since

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[85] Original Determinations, USITC Pub. 3467 at 10, 16-17.

[86] Second Review Determination, USITC Pub. 4350 at 18.

[87] Second Review Determination, USITC Pub. 4350 at 11.

[88] Second Review Determination, USITC Pub. 4350 at 11.

[89] Second Review Determination, USITC Pub. 4350 at 11.

[90] Second Review Determination, USITC Pub. 4350 at 11.

[91] CR/PR at Table I-6. As observed above, apparent U.S. consumption in the current review is not comparable to that in the original investigations and prior reviews due to differences in coverage. Domestic producers' share of apparent U.S. consumption was *** percent in 2000, *** percent in 2005, and *** percent in 2011. *Id.*

[92] CR/PR at Table I-6.

[93] CR/PR at D-3-4. One purchaser indicated that ***. This purchaser also anticipated that the ***. CR/PR at D-4.

[94] These nine firms are MagPro, AMACOR, MagRe Tech Inc., Rossborough, ESM, Hart Metals Inc., Reade Advanced Materials, Meridian Technologies, and Spartan Light Metal Productions. CR at I-40, PR at I-26.

the prior review, although US Magnesium expanded its production capacity at its Rowley, Utah Facility in 2012 by 21,500 MT.[95] US Magnesium also announced in 2014 plans to expand its production capacity by 13,000 MT, but the plans were delayed until at least 2018 when ATI announced in 2016 its decision to curtail titanium sponge production at its Rowley, Utah facility.[96] According to domestic interested parties, domestic producer ESM broke ground in late 2010 for a new production facility of atomized magnesium metal powder for military applications. Production was anticipated to commence in late second quarter 2011, but supply to customers will not be begin until it obtains approval certifications.[97] Domestic interested parties also assert that Vancouver, British Columbia-based Nevada Clean Magnesium Inc. completed a preliminary economic assessment for a 30,000 MT facility in in Ely, Nevada in 2012, and the facility produced its first magnesium metal from its bench-scale pilot furnace fabrication plant in November 2017.[98]

3. Substitutability

In the original investigations and prior reviews, the Commission found that subject imports from China and the domestic like product are highly substitutable and that price is an import consideration in purchasing decisions.[99]

In this third five-year review, the information available indicates that subject imports from China and the domestic like product continue to be substitutable to at least a moderately high degree and that price remains an important factor in purchasing decisions.[100] Information on the record also indicates that the majority of US Magnesium's sales are through contracts and that most of these contracts cover a period of one year.[101]

C. Likely Volume of Subject Imports

1. The Original Investigations and Prior Five-Year Reviews

In the original investigations, the Commission found that the volume of subject imports of granular magnesium from China and the increase in that volume were significant in all respects.[102] The volume of subject imports from China increased from 1998 to 2000, while the

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[95] Due to differences in coverage, available questionnaire data for the domestic industry's capacity in 2005, 2011, and 2016 are not comparable. CR/PR at B-3 and Table I-2. US Magnesium's capacity increased from *** MT in 2011 to *** MT in 2016. *Id*.

[96] CR at I-9, PR at I-5.

[97] CR at I-7 to I-8, PR at I-4.

[98] CR at I-8, PR at I-4; Response at 25.

[99] Original Determinations, USITC Pub. 3467 at 18; First Review Determination, USITC Pub. 3908 at 20; Second Review Determination, USITC Pub. 4350 at 12.

[100] Final Comments at 4.

[101] Response at 21; Final Comments at 12-13.

[102] Original Determinations, USITC Pub. 3467 at 18-19.

Commission attributed the lower volume of subject imports in the first half of 2001 as compared to the second half of 2000 to the pendency of the investigations.[103]

In the first five-year review, the Commission found that subject producers in China collectively had substantial production capacity that had continued to increase in recent years, produced large and increasing quantities of granular pure magnesium, demonstrated an ability to shift production from one form of magnesium to another, exported substantial and growing quantities of subject merchandise, and continued to rely on the U.S. market even under the discipline of the order.[104] The Commission observed that the record provided some evidence that producers in China benefitted from export tax rebates and faced tariff barriers in Brazil.[105] Based on these factors, as well as its findings in the original investigations, the Commission concluded that the volume of the subject merchandise from China would likely be significant, both in absolute terms and relative to consumption and production in the United States, absent the restraining effect of the order.[106]

In the second five-year review, the Commission found that the likely volume of subject imports, both in absolute terms and as a share of the U.S. market, would likely be significant if the order were revoked.[107] It found that China was the world's largest magnesium producer and that producers there had massive primary magnesium production capacity and considerable unused capacity, and planned increases in production capacity.[108] It found that the industry producing magnesium in China was export oriented, with more than half of its 2011 production being exported.[109] According to the Commission, producers of magnesium in China could switch easily between production of alloy and pure magnesium.[110] It found that given the existing antidumping duty orders in place against alloy magnesium, China would have a strong incentive to shift production if the orders were revoked.[111] It also found that exports of magnesium from China continued to face trade barriers in Brazil.[112]

2. The Current Review

Subject import volume from China peaked in 2000 at 15,262 MT.[113] Despite the presence of the order, imports of magnesium from China have remained in the U.S. market at

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[103] Original Determinations, USITC Pub. 3467 at 18.
[104] First Review Determination, USITC Pub. 3908 at 20-23.
[105] First Review Determination, USITC Pub. 3908 at 20-23.
[106] First Review Determination, USITC Pub. 3908 at 20-23.
[107] Second Review Determination, USITC Pub. 4350 at 14.
[108] Second Review Determination, USITC Pub. 4350 at 13.
[109] Second Review Determination, USITC Pub. 4350 at 13.
[110] Second Review Determination, USITC Pub. 4350 at 13.
[111] Second Review Determination, USITC Pub. 4350 at 13.
[112] Second Review Determination, USITC Pub. 4350 at 14.
[113] CR/PR at Table I-5.

appreciable levels.[114] The volume of subject imports fluctuated but decreased overall from 2012 to 2016.[115] Subject imports' share of the market was *** percent in 2016.[116]

Due to the expedited nature of this review, the record contains limited information on the industry in China. The information available indicates that the magnesium industry in China has substantial capacity and excess capacity to produce magnesium. Domestic interested parties provided information that the magnesium industry in China increased its capacity by 48.1 percent from 2010 to 2015 and projects further capacity increases.[117] Domestic interested parties assert that in 2015 the industry in China had an estimated capacity of 1.6 million MT to produce primary magnesium and a capacity utilization rate of 53 percent.[118]

The record indicates that the magnesium industry in China is significantly export oriented. China is presently the world's largest exporter of pure granular magnesium; its exports of pure granular magnesium totaled 73,220 MT in 2016.[119] Magnesium from China is currently subject to antidumping duties in Brazil.[120] Furthermore, nonsubject imports of pure magnesium ingot and alloy magnesium from China are subject to separate antidumping duty orders.[121] The Commission found in the prior reviews of the present order that Chinese producers can switch production among different forms of magnesium, and there is no indication on the record of this review that this condition of competition has changed.[122] [123]

Given the Chinese industry's available and growing capacity and its export orientation, and the increase in subject imports from China during the original investigations, we find that if the order were revoked, producers in China would likely export substantial additional volumes of subject merchandise to the United States. We consequently find that upon revocation, the volume of subject imports would likely be significant within a reasonably foreseeable time.

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[114] CR/PR at Table I-4.

[115] CR/PR at Table I-4. Imports of magnesium from China decreased from 4,605 MT in 2012 to 3,651 MT in 2013 and then increased to 5,577 MT in 2014, before decreasing to 4,045 MT in 2015 and 860 MT in 2016. *Id.*

[116] CR/PR at Table I-6. As observed above, apparent U.S. consumption in the current review is not comparable to that in the original investigations and prior reviews due to differences in coverage. Subject imports' share of the market was *** percent in the original investigations. *Id.*

[117] Response at 15; Final Comments at 8.

[118] Response at 16; Final Comments at 8. They argue that current capacity utilization levels may be lower given soft worldwide demand and low prices for magnesium. *Id.*

[119] CR/PR at Table I-9.

[120] CR at I-54-55, PR at I-34.

[121] *Magnesium Metal From the People's Republic of China: Continuation of Antidumping Duty Order*, 81 Fed. Reg. 47351 (July 21, 2016); *Pure Magnesium From the People's Republic of China: Continuation of Antidumping Duty Order*, 82 Fed. Reg. 18114 (Apr. 17, 2017).

[122] First Review Determination, USITC Pub. 3908 at 22; Second Review Determination, USITC Pub. 4350 at 13.

[123] Because foreign producers in China and importers of subject merchandise from China did not participate in this review, the record does not contain data addressing existing inventories of subject merchandise or the potential for product shifting.

D. Likely Price Effects

1. The Original Investigations and Prior Five-Year Reviews

In the original investigations, the Commission found that subject imports from China were highly substitutable for domestically produced pure magnesium, particularly in the production of reagent mixtures for the desulfurization segment of the U.S. market, and that price was an important consideration in purchasing decisions. Direct pricing data as well as average unit values collected in the original investigations showed considerable underselling by subject imports from China at significant margins, as well as declining prices for the domestic like product and subject imports. Subject imports from China undersold the domestic like product in all possible price comparisons at average margins that increased from 49.1 percent in 1998 to 72.7 percent in 1999 and 79.5 percent in 2000. The Commission found that subject imports from China had adverse price effects throughout the market. For example, it found the low-priced subject imports from China drove domestic producers and one Israeli producer largely out of the desulfurization segment of the U.S. market, leading to intensified price competition in the aluminum alloying segment of the market between the domestic like product, magnesium ingot imports from Israel, and nonsubject magnesium ingot imports. Moreover, it found that the prices of subject imports from China in the desulfurization segment of the market were even lower than magnesium ingot prices to that and other segments of the market. For these reasons, the Commission found significant underselling by subject imports from China, and that subject imports depressed prices for the domestic like product to a significant degree.[124]

In the first five-year review, the Commission found that, absent the antidumping duty order, competitive conditions would return to those prevailing prior to the imposition of the order. In conjunction with its finding of a likely significant volume of subject imports from China in the event of revocation, the substitutability of domestic and subject product, the importance of price in the market, the significant underselling and other price effects in the original investigations, and subject imports' continuing presence in the U.S. market notwithstanding the order, the Commission found that subject imports would likely have adverse effects on domestic prices in a market that already appeared to face lower and declining prices. The Commission relied on pricing patterns for subject imports both during and subsequent to the original period of investigation to conclude that subject imports would likely be priced aggressively if the order were revoked.[125] Based on these factors, the Commission concluded that revocation of the antidumping duty order on pure magnesium would be likely to lead to significant underselling of the domestic like product by subject imports and significant price depression and suppression.

In the second five-year review, the Commission found that magnesium of the same type was a fungible, commodity product, and that price was an important factor in purchasing

[124] Original Determinations, USITC Pub. 3467 at 19-20.

[125] First Review Determination, USITC Pub. 3908 at 23-25.

decisions. As no product specific pricing data were available, it relied on publicly available pricing data for magnesium, which generally showed that domestic prices were consistently higher than subject and nonsubject prices during this review. It found that given the likely significant volume of subject imports, subject imports from China likely would significantly undersell the domestic like product to gain market share and likely would have significant depressing or suppressing effects on the prices of the domestic like product if the antidumping duty order were revoked.[126]

2. The Current Review

The record does not contain current pricing comparisons due to the expedited nature of this review. As we found above, subject import volume from China would likely increase to significant levels upon revocation. Additionally, subject producers would likely resume the behavior observed in the original investigations, exporting subject merchandise at low prices to gain market share. These subject imports would likely undersell the domestic like product, as they did during the original investigations.[127] Consequently, there would likely be significant underselling by subject imports from China.

Because price continues to be an important factor in purchasing decisions, and given the substitutability of subject imports and the domestic like product, the likely significant volume of subject imports, which would likely undersell the domestic like product, would likely force the domestic industry either to lower prices or lose sales. In light of these considerations, we conclude that, absent the disciplining effect of the order, subject imports from China would likely have a significant depressing or suppressing effect on prices for the domestic like product within a reasonably foreseeable time.

E. Likely Impact

1. The Original Investigations and Prior Five-Year Reviews

In the original investigations, the Commission found that subject imports were having a significant adverse impact on the domestic industry. Specifically, the Commission found that significant volumes of subject imports from China at low prices displaced the domestic like product in the desulfurization segment of the market and intensified competition throughout the U.S. market, including in the aluminum alloying segment where the domestic like product

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[126] Second Review Determination, USITC Pub. 4350 at 15.

[127] Domestic interested parties contend that subject imports are likely to undersell the domestic like product based on published weekly spot prices for pure and alloy magnesium from China and the European Union ("EU"), which are significantly below domestic producers' spot prices and lower than ***. Response at 20-21; Final Comments at 12. They also assert that imports of pure granular magnesium from China to Canada are priced lower than the prices of the domestic like product and are indicative of the prices that would prevail in the absence of an order. Response at 21; Final Comments at 12-13.

also competed with imports from other countries. Domestic producer Magcorp declared bankruptcy at the end of the period of investigation, Northwest announced the closure of its production facilities in June 2001, and the condition of magnesium ingot producers declined. It also found that the grinders experienced declining performance throughout the period of investigation, although it observed that the data concerning grinders were less meaningful because they included some data for reagent production.[128]

In the first five-year review, given the limited available industry performance data, the Commission found that it was unable to determine whether the industry was currently vulnerable.[129] It found that revocation of the antidumping duty order likely would lead to significant increases in the volume of subject imports from China at prices that would likely undersell the domestic like product and significantly depress U.S. prices. In addition, the likely volume and price effects of the subject imports likely would cause the domestic industry to lose market share, with a significant adverse impact on the domestic industry' production, capacity utilization, shipments, sales, and revenue levels, which in turn would have a direct adverse impact on the domestic industry's profitability and its ability to raise capital and make and maintain necessary capital investments. Accordingly, based on the limited record in the expedited review, the Commission concluded that, if the antidumping duty order were revoked, subject imports from China likely would have a significant impact on the domestic industry within a reasonably foreseeable time.[130]

In the second five-year review, the Commission again found that the limited information on the record was insufficient to make a finding as to whether the domestic industry was vulnerable.[131] It found that if the order were revoked, the likely adverse volume and price effects of the subject imports would likely have a significant impact on the production, shipments, sales, market share, and revenues of the domestic industry. It observed that declines in these indicators of industry performance would have a direct adverse impact on the industry's profitability and employment, as well as its ability to raise capital, to make and maintain capital investments, and to fund research and development.[132] While the Commission considered the role of weakened demand due to the 2009 recession and the presence of significant quantities of nonsubject imports throughout the second review, it found that the effects of these factors were not likely to sever the causal nexus between subject imports from China and their likely significant adverse impact on the domestic industry if the orders were revoked.[133]

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[128] Original Determinations, USITC Pub. 3467 at 20-22.
[129] First Review Determination, USITC Pub. 3908 at 26-27.
[130] First Review Determination, USITC Pub. 3908 at 27.
[131] Second Review Determination, USITC Pub. 4350 at 17.
[132] Second Review Determination, USITC Pub. 4350 at 17.
[133] Second Review Determination, USITC Pub. 4350 at 18.

2. The Current Review[134]

Because of the expedited nature of this review, information on the record concerning the recent performance of the domestic industry producing magnesium is limited. This limited information is insufficient for us to make a finding as to whether the domestic industry is vulnerable to continuation or recurrence of material injury in the event of revocation of the order.

Available information indicates that the condition of the domestic industry has improved since the original investigations.[135] Capacity utilization in 2016 was *** percent, which was higher than the *** percent reported in 2000.[136] U.S. commercial shipments were higher in 2016, at *** MT, than in the prior reviews or the original investigations.[137] The domestic industry reported operating income of $*** in 2016.[138] Its ratio of operating income to net sales was *** percent in 2016, which is higher than in the original investigations (*** percent).[139]

As previously discussed, revocation of the order on pure granular magnesium from China would likely lead to a significant volume of subject imports that would undersell the domestic like product and have significant effects on the domestic industry's prices. Consequently, given the substitutable nature of subject imports from China and the domestic like product and available information on capacity in China, the likely significant volume of subject imports from China would place pricing pressure on domestic producers, forcing them to either cut prices or cede market share to subject imports. The likely significant volume of subject imports and their price effects would negatively affect domestic capacity, production, capacity utilization, shipments, net sales values and quantities, employment levels, operating income, operating margins, and capital investments.

We have also considered the role of factors other than subject imports, including the presence of nonsubject imports, so as not to attribute any injury from other factors to the subject imports. We observe that there are several nonsubject countries whose industries supply magnesium to the U.S. market.[140] Although the volume of nonsubject imports has increased since the prior reviews, as a whole their volume is small.[141] In the event of

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[134] As a result of its expedited review of the antidumping duty order, Commerce determined that revocation of the order would be likely to lead to the continuation or recurrence of dumping at weighted-average margins of up to 305.56 percent. 83 Fed. Reg. at 1017-1018.

[135] Due to differences in coverage, available questionnaire data for the domestic industry's trade and financial indicators in 2005, 2011, and 2016 are not comparable.

[136] CR/PR at B-3 and Table I-2.

[137] CR/PR at B-3 and Table I-2. U.S. commercial shipments were *** MT in 2000. CR/PR at Table I-2.

[138] CR/PR at B-3. The domestic industry's 2016 operating income was higher than that reported in the original investigations ($***). CR/PR at B-3 and Table I-2.

[139] CR/PR at B-3 and Table I-2.

[140] CR/PR at Table I-4.

[141] CR/PR at Table I-4.

revocation, the small presence of nonsubject imports would not prevent subject imports from China from entering the U.S. market at levels and prices that would cause injury to the domestic injury if the instant order on imports from China were revoked.

Accordingly, we conclude that, if the antidumping duty order on pure granular magnesium from China were revoked, subject imports from China would likely have a significant impact on the domestic magnesium industry within a reasonably foreseeable time.

IV. Conclusion

For the above reasons, we determine that revocation of the antidumping duty order on pure granular magnesium from China would likely lead to continuation or recurrence of material injury to an industry in the United States within a reasonably foreseeable time.

INFORMATION OBTAINED IN THIS REVIEW

BACKGROUND

On September 1, 2017, the U.S. International Trade Commission ("Commission") gave notice, pursuant to section 751(c) of the Tariff Act of 1930, as amended ("the Act"),[1] that it had instituted a review to determine whether revocation of antidumping duty order on pure granular magnesium from China would likely lead to the continuation or recurrence of material injury to a domestic industry.[2] All interested parties were requested to respond to this notice by submitting certain information requested by the Commission.[3] [4] The following tabulation presents information relating to the background and schedule of this proceeding:

Effective or statutory date	Action
September 1, 2017	Notice of initiation and institution by Commerce and Commission
December 5, 2017	Commission vote on adequacy
January 9, 2018	Commerce results of its expedited review
February 27, 2018	Determination and views to Commerce

[1] 19 U.S.C. 1675(c).

[2] *Pure Magnesium (Granular) from China; Institution of a Five-Year Review*, 82 FR 41651, September 1, 2017. In accordance with section 751(c) of the Act, the U.S. Department of Commerce ("Commerce") published a notice of initiation of a five-year review of the subject antidumping duty order concurrently with the Commission's notice of institution. *Initiation of Five-Year (Sunset) Reviews*, 82 FR 42073, September 6, 2017. Pertinent *Federal Register* notices are referenced in app. A, and may be found at the Commission's website (www.usitc.gov).

[3] As part of their response to the notice of institution, interested parties were requested to provide company-specific information. That information is presented in app. B. Summary data compiled in prior proceedings is presented in app. C.

[4] Interested parties were also requested to provide a list of three to five leading purchasers in the U.S. market for the subject merchandise. Presented in App. D are the responses received from purchaser surveys transmitted to the purchasers identified in the adequacy phase of this review.

RESPONSES TO THE COMMISSION'S NOTICE OF INSTITUTION

Individual responses

The Commission received one submission in response to its notice of institution in the subject review. It was filed on behalf of the following entities:

1. US Magnesium LLC ("US Magnesium") and;
2. The United Steel, Paper and Forestry, Rubber, Manufacturing, Energy, Allied Industrial and Service Workers International Union, Local 8319 ("Local 8319").

Both are collectively referred to herein as "domestic interested parties." A complete response to the Commission's notice of institution requires that the responding interested party submit to the Commission all the information listed in the notice. Responding firms are given an opportunity to remedy and explain any deficiencies in their responses.

Table I-1
Pure granular magnesium: Summary of responses to the Commission's notice of institution

Type of interested party	Completed responses	
	Number	Coverage
Domestic:		
U.S. producer – US Magnesium[2]	1	***%[1]

[1] In their response to the notice of institution, domestic interested parties estimated that US Magnesium accounts for this share of total U.S. production of pure granular magnesium during 2016. Domestic interested parties have based their computation on an estimate of the primary and secondary magnesium ingot produced in the United States as well as the granular magnesium produced from non-US Magnesium produced magnesium ingot. Granular magnesium produced from magnesium ingot supplied by US Magnesium was not included so as to avoid double counting. Although US Magnesium does not consider die-casters which recycle their own scrap to be domestic producers of magnesium, it has included estimates of their recycled product in estimated total production. *Domestic Interested Parties' Response to the Notice of Institution*, October 2, 2017, Attachment 12.

[2] As part of its submission, US Magnesium and Local 8319 filed a joint response to the notice of institution. *Domestic Interested Parties' Response to the Notice of Institution*, p. 1.

Party comments on adequacy

The Commission received one submission from parties commenting on the adequacy of responses to the notice of institution and whether the Commission should conduct an expedited or full review. This submission was filed on behalf of the following entities: (1) US Magnesium and (2) Local 8319. Domestic interested parties argued that the Commission should find the respondent interested party group response to be inadequate since there was no complete submission by any respondent interested party. Therefore, because of the inadequate response by the respondent interested parties and the fact that there have been no major changes in the conditions of competition in the market since the Commission's last five-

year review, they request that the Commission conduct an expedited review of the antidumping order on pure granular magnesium.[5]

RECENT DEVELOPMENTS IN THE INDUSTRY

Since the Commission's last five-year review, the following snapshot of developments in the pure granular magnesium industry are provided by the domestic interested parties:[6]

1. MagPro, a new producer of magnesium, was established in Tennessee after the imposition of the Order and before this period of review;
2. Non-subject imports, particularly from Israel's Dead Sea Magnesium plant have played a role in meeting U.S. demand for magnesium;
3. Import volumes have fallen since the imposition of the antidumping duty order;
4. Prices in the U.S. market for all forms of unwrought magnesium have improved significantly;
5. The U.S. Geological Survey ("USGS") reflects two new entrants into the global magnesium industry: South Korea (2012) and Malaysia (2011 and 2013);
6. Between March 13, 2012 and January 13, 2015, five individuals entered guilty plea agreements related to their involvement in a sophisticated scheme designed to avoid the payment of antidumping duties pursuant to the Commission's order;
7. Without a similar antidumping order in place, 2016 import statistics from Canada indicate that the Chinese exports account for 98 percent of Canadian imports at a significantly lower price point of the subject product;
8. A significant source of domestic demand for pure granular magnesium, Allegheny Technologies Incorporated announced that they will close their newly-constructed titanium sponge facility;
9. In 2004 and 2005, Brazil has instituted similar antidumping duties against magnesium products from China. That order was continued in 2010 and remains in effect today.

Counsel for the petitioners, citing the Commission's finding in its most recent review of the antidumping orders on magnesium alloy imported from China that pure magnesium ingots, pure granular magnesium, and magnesium alloy imported from China together constituted a single domestic like product,[7] argues that findings for these other forms of magnesium are relevant for consideration in this review of pure granular magnesium.[8]

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[5] *Domestic Interested Parties' Comments on Adequacy*, November 13, 2017, p. 1-2, 4.

[6] *Domestic Interested Parties' Comments on Adequacy*, October 2, 2017, Attachments.

[7] *Pure Magnesium (Ingot) From China, Inv. No. 731-TA-696 (Fourth Review)*, USITC Publication 4618, March 2017, pp. I-9 to I-11, I-17 to I-18.

[8] *Domestic Interested Parties' Response to the Notice of Institution*, October 2, 2017, pp. 5-6.

United States:

- **ESM Special Metals & Technologies** ("ESM-SMT") broke ground in October 2010 for a new facility at its existing production site in Saxonburg, PA, to manufacture atomized magnesium metal powder for military countermeasure flares, ordinance, welding, and other applications. Production was anticipated to commence in late second-quarter 2011, but ESM-SMT will not be supplying customers until it obtains product testing and approval certifications from the U.S. Defense Department for its products to be used by military contractors.[9]
- Vancouver, BC-based **Nevada Clean Magnesium Inc.** ("Nevada CMI," formerly Molycor Gold Corp. prior to 2012) has been evaluating the resource base of its Tami-Mosi magnesium property near Ely, NV since 2007.[10] In January 2012, the firm completed a preliminary economic assessment for a 30,000 metric tons per year processing facility to produce primary magnesium metal from high-purity dolomite (a calcium-magnesium carbonate mineral) mined from a deposit on the project site,[11] with subsequent revisions announced in July 2014.[12] Nevada CMI completed the bench-scale pilot furnace fabrication plant to evaluate the recovery of magnesium from dolomite in April 2017[13] and produced its first magnesium metal in November 2017.[14]
- **U.S. Magnesium LLC** expanded the production capacity at its electrolytic processing facility in Rowley, UT that recovers magnesium metal from brine deposits on the shores of the Great Salt Lake.[15] Expansion by 21,500 metric tons per year was completed in July

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[9] Riley, Anne, "ESM Eyes 2nd-qtr. Start for New Specialty Magnesium Plant, *American Metal Market*, March 11, 2011; *Businesswire*, "ESM-SMT is Pleased to Announce the Inauguration of the Newest Atomized Magnesium Metal Powder Production Facility in North America," February 24, 2011. *Domestic Interested Parties' Response to the Notice of Institution*, October 2, 2017, Attachment 2.

[10] Molycor Gold Corp., "Positive Preliminary Economic Assessment Study Completed for Tami-Mosi Magnesium Project," press release, August 5, 2011. Cited by Kramer, Deborah A., "Magnesium (Advance Release)," *2011 Minerals Yearbook*, USGS, November 2012, p. 45.2.

[11] Fundamental Research Corp., "Molycor Gold Corporation (TSXV: MOR, Frankfurt: M1V, OTCPK: MLLYFF)— Positive PEA on Tami Mosi Magnesium Project," January 19, 2012. Cited by Bray, E. Lee, "Magnesium (Advance Release)," *2012 Minerals Yearbook*, USGS, November 2013, p. 45.2. Nevada CMI, company Internet websites, "About Nevada Clean Magnesium Inc.;" and "Tami-Mosi, Nevada, USA (Magnesium)," 2016.

[12] Nevada CMI, "Nevada Clean Magnesium Files Amended and Restated 43-101 Technical Report," press release, July 10, 2014; and "Nevada Clean Magnesium Receives Final Designs for Pilot Reduction Furnace for Tami-Mosi Project in Nevada," press release, July 21, 2014. Cited by Bray, E. Lee, "Magnesium (Advance Release)," *2014 Minerals Yearbook*, USGS, February 2016, p. 45.1.

[13] Nevada CMI, "Bench Pilot Furnace Fabrication Completed," press release, April 4, 2017.

[14] Nevada CMI, "Nevada Clean Magnesium Produces Magnesium Metal from Its Bench Scale Pilot Furnace," press release, November 6, 2017.

[15] U.S. Magnesium, company Internet website, "About Us," 2011.

2012, to raise total processing capacity to 63,500 metric tons per year,[16] with increased orders being cited as the reason for accelerating the start-up ahead of the planned year-end completion date.[17] In 2014, plans were announced for further expansion by 13,000 metric tons per year to a total of 76,500 metric tons per year, initially by the end of 2015[18] but later revised to the end of 2016.[19] However, expansion plans were subsequently announced as being placed on-hold until 2018 or later, after local-customer Allegheny Technologies Inc. announced in August 2016 its decision to curtail titanium sponge production at its nearby Rowley, UT facility.[20]

Australia:

- **Latrobe Magnesium Ltd.** ("LMG") completed the two-year commercial feasibility study in September 2017 for a 3,000 metric tons per year primary magnesium plant in Latrobe Valley, Victoria, that will use the combined hydromet/thermal reduction processes to extract magnesium from industrial fly-ash waste generated by three local, brown coal-fired electric power plants.[21] Plant construction also was scheduled to commence in September 2017 with completion and initial magnesium production anticipated in September 2018. Expansion of production capacity to 40,000 metric tons per year is planned for September 2019.[22] LMG plans to enter into long-term contracts to sell the magnesium to Australian, Japanese, and U.S. distributors.[23]

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[16] Waite, Suzy, "U.S. Mag Run Rate Increases as Utah Expansion Finished," *American Metal Market*, July 11, 2012, p. 11. Cited by Bray, E. Lee, "Magnesium (Advance Release)," *2012 Minerals Yearbook*, USGS, November 2013, p. 45.2.

[17] McBeth, Karen, "U.S. Magnesium Accelerates Expansion, Expects Output Mid-Year," *Platts Metals Week*, April 11, 2011, pp. 14–15. Cited by Kramer, Deborah A., "Magnesium (Advance Release)," *2011 Minerals Yearbook*, USGS, November 2012, p. 45.2.

[18] Cowden, Michael, "U.S. Magnesium to Increase Capacity," *American Metal Market,* February 12, 2015. Cited by Bray, E. Lee, "Magnesium (Advance Release)," *2014 Minerals Yearbook*, USGS, February 2016, p. 45.1; and *2013 Minerals Yearbook*, February 2015, p. 45.1.

[19] McBeth, Karen, "Allegheny Technologies to Idle Utah Titanium Sponge Plant, Affects US Magnesium," *Platts Metals Daily,* August 25, 2016. Cited by Bray, E. Lee, "Magnesium (Advance Release)," *2015 Minerals Yearbook*, USGS, February 2017, p. 45.2.

[20] Maltais, Kirk, "US Mag's Rowley Plant Expansion on Hold," *American Metal Market*, October 17, 2016. *Domestic Interested Parties' Response to the Notice of Institution*, October 2, 2017, Attachment 13.

[21] LMG, company Internet websites: "Company Summary," June 7, 2017; "Economics" June 25, 2015; "Overview," October 7, 2014; "Technology," October 22, 2014; See also: LMG, "Latrobe Magnesium First Community Briefing for Latrobe Valley Magnesium Plant," press release, November 5, 2015. Cited by Bray, E. Lee, "Magnesium (Advance Release)," *2015 Minerals Yearbook*, USGS, February 2017, p. 45.3.

[22] LMG, company Internet websites: "Company Summary," June 7, 2017; "Timetable," June 25, 2015.

[23] LMG, company Internet websites: "Company Summary," June 7, 2017; "Economics" June 25, 2015; "Overview," October 7, 2014.

Canada:

- **Alliance Magnesium Inc.** ("AMI") started-up a 200 metric tons per year pilot plant in May 2015 to test recovery of magnesium from asbestos mine tailings in Asbestos, Quebec.[24] AMI announced in May 2017 that the pilot plant produced the first magnesium ingots,[25] and subsequently in September 2017, that it achieved 140 days of magnesium production.[26] If the process is commercially feasible, AMI plans to construct a 50,000 metric tons per year smelter by 2020.[27]
- **Mag One Products Inc.** ("Mag One") received a grant in November 2015 from the Canadian government's Industrial Research Assistance Program to develop the technology to recover magnesium from asbestos mine tailings. If successful, then Mag One plans to build a magnesium smelter near Danville, Quebec.[28] Previously, in October 2014, Mag One (formerly Acana Capital Corp.) acquired North American Magnesium Products LLC (Knoxville, TN) which developed a thermal process to recover magnesium from asbestos.[29]
- **West High Yield Resources Inc.** received a permit in November 2015 to extract samples from a serpentine deposit at its Record Ridge project in British Columbia. If tests for recovery of magnesium are successful, the company plans to construct both a mine and smelter.[30]

[24] AMI, "Clean Tech Magnesium Pilot Plant Starts," press release, May 19, 2015. Cited by Bray, E. Lee, "Magnesium (Advance Release)," *2015 Minerals Yearbook*, USGS, February 2017, p. 45.3.

[25] AMI, "Alliance Magnesium Produces Its First Magnesium Ingots and Also Concludes a $4.1 Million Loan," news release, May 1, 2017.

[26] AMI, "Alliance Magnesium to Complete 140 Days of Magnesium Production," news release, September 20, 2017.

[27] AMI, "Alliance Magnesium to Complete 140 Days of Magnesium Production," news release, September 20, 2017.

[28] Mag One, "Mag One Receives Financial Support from the Canadian Government," press release, November 3, 2015. Cited by Bray, E. Lee, "Magnesium (Advance Release)," *2015 Minerals Yearbook*, USGS, February 2017, p. 45.3.

[29] Janda, Lucky, "Acana to Acquire North American Magnesium Products," press release, October 16, 2014; Mag One, "NAMP Technology," 2015. http://magoneproducts.com/namp-technology/. Cited by Bray, E. Lee, "Magnesium (Advance Release)," *2014 Minerals Yearbook*, USGS, February 2016, p. 45.3.

[30] Mining and smelting operations were reportedly anticipated to commence in June 2016. West High Yield Resources Inc., "West High Yield Announces Two 10,000 Tonne Bulk Sample Permit Approvals," press release, November 3, 2015; West High Yield Resources Inc. Internet website, 2014, http://whyresources.com. Cited by Bray, E. Lee, "Magnesium (Advance Release)," *2015 Minerals Yearbook*, USGS, February 2017, p. 45.3.

China:

- **Baotou Tianhong Magnesium Co. Ltd.** ("Baotou") announced in 2012 the gradual shut-down of its 20,000 metric tons per year Baotou smelter as production increases at its equivalent-production capacity Jinxin smelter.[31] Baotou subsidiary, **Jinxin Magnesium Co. Ltd.**, restarted production in October 2012 at its 20,000 metric tons per year smelter in Inner Mongolia.[32]
- Hong Kong-based **Century Sunshine Group Holdings Ltd.** ("Century Sunshine") anticipated completing the expansion of its smelter in Baishan, Jilin Province to 75,000 metric tons per year by the end of 2016.[33] Previously, Century Sunshine expanded annual production capacity from 16,000 metric tons to 25,000 metric tons in 2014.[34]
- In October 2012, **Chaohu Yunhai Magnesium Co. Ltd.** ("Chaohu Yunhai") commissioned its 50,000 metric tons per year smelter located in Anhui Province. Expansion to 100,000 metric tons per year is planned but the construction schedule was not provided.[35]
- **China Magnesium Industry Ltd.** ("China Magnesium") anticipated completing expansion of its smelter production capacity five-fold to 15,000 metric tons from 3,000 metric tons by the end of 2015.[36]
- **Gansu Tianyuan Magnesium Co. Ltd.** ("Gansu Tianyuan") commenced constructing an magnesium alloy smelter in Gansu Province, but production capacity and construction schedule were not available.[37]
- **Globright Optical Technology Co.** ("Globright") reportedly planned in 2014 to construct a smelter in Hebi, Henan Province to produce magnesium alloy for lighting products, but did not disclose the production capacity or construction schedule.[38]

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[31] Chao, Mikeala, "Inner Mongolia Jinxin to Start Magnesium Production on October 20," October 8, 2012. Cited by Bray, E. Lee, "Magnesium," *2012 Minerals Yearbook*, USGS, August 2016, p. 45.3.

[32] Chao, Mikeala, "Inner Mongolia Jinxin to Start Magnesium Production on October 20," October 8, 2012. Cited by Bray, E. Lee, "Magnesium," *2012 Minerals Yearbook*, USGS, August 2016, p. 45.3.

[33] Leung, Joshua, "Century Sunshine Jan-Sept Mg Sales Rise 11% to 18, 276 MT," *Platts Metals Daily*, November 19, 2015, p. 7. Cited by Bray, E. Lee, "Magnesium (Advance Release)," *2015 Minerals Yearbook*, USGS, February 2017, p. 45.3.

[34] Leung, Joshua, "Century Sunshine's Jan-Sep Basic Mg Sales Surge 36%," *Platts Metals Daily*, November 25, 2014, p. 6. Cited by Bray, E. Lee, "Magnesium (Advance Release)," *2014 Minerals Yearbook*, USGS, February 2016, p. 45.3.

[35] Shair, Wendy, "Chaohu Yunhai to Produce 20,000 MT Magnesium Alloy," *Platts Metals Daily*, May 14, 2013, p. 7. Cited by Bray, E. Lee, "Magnesium (Advance Release)," *2013 Minerals Yearbook*, USGS, February 2015, p. 45.3.

[36] Leung, Joshua, "China Magnesium to Expand Capacity by End-2015," *Platts Metals Daily*, July 9, 2014, pp. 4-5. Cited by Bray, E. Lee, "Magnesium (Advance Release)," *2014 Minerals Yearbook*, USGS, February 2016, p. 45.4.

[37] Chao, Mikeala, "Gansu Tianyuan Breaks Ground for Magnesium Alloy Industrial Park," *Metals-Pages*, August 17, 2012. Cited by Bray, E. Lee, "Magnesium," *2012 Minerals Yearbook*, USGS, August 2016, p. 45.3.

- **Hebi Mingyuan Magnesium Ltd's.** ("Hebi Mingyuan") construction of a 55,000 metric tons magnesium facility in Hebi, Henan Province, commenced in December 2012.[39]
- Completion was reportedly delayed to mid-2016 for **Qinghal Salt Lake Magnesium Industry Co. Ltd's**. ("QSLM") 100,000 metric tons per year smelter to produce magnesium from lake brines in Golmud, Qinghai Province,[40] among the largest such facilities in the world. The Phase Two plan is to expand the smelter's capacity by another 50,000 metric tons per year, with the ultimately capacity reaching 450,000 metric tons per year at completion.[41] Magontec Ltd. (Australia) is constructing a 56,000 metric tons cast house to be supplied with molten magnesium from the Golmud smelter.[42] The cast house building was completed in December 2014, with plans for equipment installation through first-quarter 2015 and commissioning thereafter.[43]
- **SRM Science and Technology Co.** ("SRM") constructed in 2014, a 30,000 metric tons per year magnesium alloy facility in Xiangtan, Hunan Province.[44]
- **Shaanxi Fugu Tianyu Mineral Industrial Group Co. Ltd.** ("Tianyu") commissioned its new 30,000 metric tons per year magnesium facility in Shaanxi Province during fourth-quarter 2012.[45]
- **Taiyuan Yiwei Magnesium Co. Ltd.** ("Yiwei") cited coking-gas shortages, low magnesium prices, and weak export demand for producing only 30,000 metric tons in 2012, below its 134,000 metric tons per year capacity.[46]

(…*continued*)

[38] Shair, Wendy, "China's Globright to Build Hebi Mg Alloy Project," *Platts Metals Daily*, July 3, 2014, p. 4. Cited by Bray, E. Lee, "Magnesium (Advance Release)," *2014 Minerals Yearbook*, USGS, February 2016, p. 45.4.

[39] Construction was reportedly anticipated to be completed in second-half 2014. Shair, Karen, "Hebi Mingyuan Starts Building Magnesium Plant," *Platts Metals Daily*, December 18, 2012, p. 7. Cited by Bray, E. Lee, "Magnesium," *2012 Minerals Yearbook*, USGS, August 2016, p. 45.3.

[40] Leung, Joshua, "Market Participants Wary After China's Shaanxi Magnesium Producers Set Price Floor," *Platts Metals Daily*, November 12, 2015; Magontec Ltd., *Annual Report 2015*, 2016, pp. 5 and 14. Cited by Bray, E. Lee, "Magnesium (Advance Release)," *2015 Minerals Yearbook*, USGS, February 2017, p. 45.3.

[41] Magontec Ltd., *Annual Report 2015*, 2016, p. 5. *Domestic Interested Parties' Response to the Notice of Institution*, October 2, 2017, Attachment 6.

[42] Magontec Ltd., *Annual Report 2015*, 2016, pp. 5 and 14. Cited by Bray, E. Lee, "Magnesium (Advance Release)," *2015 Minerals Yearbook*, USGS, February 2017, p. 45.3.

[43] Magontec Ltd., *Annual Report 2015*, 2016, p. 5. *Domestic Interested Parties' Response to the Notice of Institution*, October 2, 2017, Attachment 6.

[44] Production was reportedly anticipated to commence in 2015. Leung, Joshua, "China's SRM to Start Mg Alloy Plant by Q4," *Platts Metals Daily*, May 15, 2014, p. 5. Cited by Bray, E. Lee, "Magnesium (Advance Release)," *2014 Minerals Yearbook*, USGS, February 2016, p. 45.3.

[45] Tianyu also reportedly planned to expand production in first-quarter 2013. *Platts Metals Week*, "Tianyu to Open New Magnesium Lines," April 23, 2012, p. 10; Yee, Alvin, "Tainyu Eyes Tripling of Magnesium Ingot Output in 2013," *Platts Metals Daily*, January 24, 2013, p. 6. Cited by Bray, E. Lee, "Magnesium," *2012 Minerals Yearbook*, USGS, August 2016, p. 45.3.

- **Wenxi Baiyu Magnesium Corp.** commenced production at its recently completed 30,000 metric tons magnesium alloy facility in Wenxi, Shanxi Province in January 2014.[47]
- **Wulong Group Ltd.** ("Wulong") commenced production in March 2013 at its recently completed 60,000 metric tons per year smelter in Yuanqu County, Shanxi Province.[48]

(Republic of) Korea:

- In October 2012, POSCO Co. Ltd. ("POSCO") commenced shipping magnesium ingots from its newly completed 10,000 metric tons per year Okgye primary magnesium facility in Gangneung, Gangwon Province. POSCO reportedly plans to expand production capacity at this facility to 100,000 metric tons by 2018. The Okgye facility supplies Korean magnesium die casters and POSCO's 3,000 metric tons per year magnesium sheet facility at Suncheon, Jeollanam Province.[49]

Malaysia:

- Hong Kong-based **CVM Minerals Ltd.** cited financial problems and weak market conditions for the delayed ramp-up of its Perak smelter in 2013, after experiencing technical problems during start-up in 2012, from the 2011 capacity expansion to 15,000 metric tons.[50]

Norway:

- SiMag (a subsidiary of Serenity Capital Pte. Ltd.) received funding from Innovation Norway's Scheme for Environmental Technologies to construct a 15,000 metric tons per year secondary magnesium smelter at the Heroya Industrial Park to be completed in

(…*continued*)

[46] However, Yiwei also reportedly planned to increase production to 40,000 metric tons in 2013. Shair, Karen, "Yiwei Plans 2013 Magnesium Output at 40,000 MT," *Platts Metals Daily*, January 11, 2013, pp. 7-8. Cited by Bray, E. Lee, "Magnesium," *2012 Minerals Yearbook*, USGS, August 2016, p. 45.3.

[47] Shair, Wendy, "China's Baiyu to Start Up New Mg Alloy Line at End-Jan," *Platts Metals Daily*, January 17, 2014, p. 7. Cited by Bray, E. Lee, "Magnesium (Advance Release)," *2014 Minerals Yearbook*, USGS, February 2016, p. 45.3.

[48] Shair, Wendy, "Wulong Completes 60,000 MT Magnesium Alloy Project," *Platts Metals Daily*, March 5, 2013, p. 7. Cited by Bray, E. Lee, "Magnesium (Advance Release)," *2013 Minerals Yearbook*, USGS, February 2015, p. 45.3.

[49] *Platts Metals Week*, "Posco's Mg Plant on Track for June," April 30, 2012; POSCO, "Conference Inviting Magnesium Refining Clients, press release, October 26, 2012. Cited by Bray, E. Lee, "Magnesium," *2012 Minerals Yearbook*, USGS, August 2016, p. 45.4.

[50] Shair, Wendy, "Malaysian Mg Producer CVM Minerals Narrows H1 Losses," *Platts Metals Daily*, August 29, 2013, pp. 6-7. Cited by Bray, E. Lee, "Magnesium (Advance Release)," *2013 Minerals Yearbook*, USGS, February 2015, p. 45.4.

2015. A 50,000 metric tons per year primary magnesium smelter is planned but the construction schedule was not specified.[51]

Romania:

- **Magontec Ltd.** completed construction of a secondary magnesium facility in Santana and production commenced the second-quarter 2012 to serve Eastern European markets.[52]

Turkey:

- **Esan Eczacibasi** completed constructing its 15,000 metric tons per year magnesium smelter at Eskisehir in September 2015 and is evaluating possibly expanding its production capacity to 30,000 metric tons per year.[53]

THE ORIGINAL INVESTIGATION AND SUBSEQUENT REVIEWS

The original investigation

The original investigation resulted from a petition filed on October 17, 2000 with Commerce and the Commission by Magnesium Corp. of America ("Magcorp"), the predecessor of present-day U.S. producer US Magnesium,[54] which covered imports of pure magnesium from Israel and Russia, as well as imports of pure magnesium in granular form from the People's Republic of China ("China") and Local 8319.[55] The allegation was that an industry in the United States was materially injured and threatened with material injury by reason of imports of pure magnesium from Israel and Russia, and pure granular magnesium from China, that were alleged to be sold in the United States at less than fair value ("LTFV"), and by reason of imports of pure magnesium from Israel that were alleged to be subsidized by the government of Israel.

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[51] Himie, Ase, "SiMg Receives NOR 20 Million in Funding from Innovation Norway— a Flying Start for Phase 1," Heroya Industrial Park news release, May 26, 2014. Cited by Bray, E. Lee, "Magnesium (Advance Release)," *2014 Minerals Yearbook*, USGS, February 2016, p. 45.4.

[52] Magontec Ltd., "New Plant for Magnesium Recycling in Romania," press release, April 2012. Cited by Bray, E. Lee, "Magnesium," *2012 Minerals Yearbook*, USGS, August 2016, p. 45.4.

[53] McBeth, Karen, "Turkish Magnesium Producer Esan at 25% of Capacity," *Platts Metals Daily*, May 17, 2016. Cited by Bray, E. Lee, "Magnesium (Advance Release)," *2015 Minerals Yearbook*, USGS, February 2017, p. 45.4.

[54] On October 26, 2000, the petitioners amended the petition to include the United Steel Workers of America, Local 8319, as a co-petitioner, and on April 20, 2001, they amended the petition to add "concerned employees of the Northwest Alloys, Inc." as co-petitioners. Confidential Staff Report ("CR") at I-4 n.9, Public Staff Report ("PR") at I-4 n.9.

[55] CR at I-4, PR at I-4.

The investigation of subject imports from Russia was terminated following a final negative dumping determination by the Department of Commerce ("Commerce").[56] The U.S. International Trade Commission ("Commission") made a negative injury determination on subject imports from Israel. The Commission determined that an industry in the United States was materially injured by reason of imports of pure magnesium in granular form from China that Commerce found had been sold in the United States at less than fair market value.[57]

On September 27, 2001, Commerce determined that imports of pure granular magnesium from China were being sold at LTFV.[58] On November 13, 2001, the Commission transmitted its determination to Commerce that the domestic industry was materially injured by reason of LTFV imports of pure granular magnesium from China.[59] On November 19, 2001, Commerce issued its antidumping duty order with the final weighted-average dumping margins ranging from 26.67 to 305.56 percent.[60]

The first five-year review

The Commission instituted its first review of the antidumping duty order on pure magnesium in granular form from China on October 2, 2006.[61] On January 5, 2007, the Commission determined that an expedited five-year review of the antidumping duty order should proceed.[62] Effective February 6, 2007, Commerce found that revocation of the antidumping duty order on pure magnesium in granular form from China would likely lead to continuation or recurrence of dumping at the following weighted-average margins: 24.67 percent (Minmetals) and 305.56 percent (all others).[63] In March 2007, the Commission determined that revocation of the antidumping duty order would be likely to lead to continuation or recurrence of material injury to an industry in the United States within a reasonably foreseeable time.[64] Commerce published notice of the continuation of the

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[56] *Notice of Final Determination of Sales at Not Less Than Fair Value: Pure Magnesium From the Russian Federation*, 66 FR 49347 (Sept. 27, 2001); *Pure Magnesium From Russia*, 66 FR 50680, October 4, 2001.

[57] Original Determination at 15-22.

[58] *Notice of Final Determination of Sales at Less Than Fair Value: Pure Magnesium in Granular Form From the People's Republic of China*, 66 FR 49345, September 27, 2001.

[59] *Pure Magnesium From China and Israel; Determinations, 66 FR 58162, November 20, 2001.*

[60] *Antidumping Duty Order: Pure Magnesium In Granular Form From The People's Republic Of China*, 66 FR 57936, November 19, 2001.

[61] *Pure Magnesium from China*, 71 FR 58001, October 2, 2006.

[62] *Pure Magnesium from China*, 72 FR 3876, January 26, 2007.

[63] *Pure Magnesium in Granular Form from the People's Republic of China: Final Results of the Expedited Sunset Review of the Antidumping Duty Order*, 72 FR 5417, February 6, 2007.

[64] *Pure Magnesium From China*, 72 FR 10258, March 7, 2007.

antidumping duty order concerning pure magnesium in granular form from China on March 26, 2007.[65]

Commerce's final result of expedited second five-year review

Commerce published the final results of its expedited second five-year review on June 5, 2012. Commerce concluded that revocation of the antidumping investigation on pure magnesium in granular form from China would likely lead to a continuation or recurrence of dumping at the following weighted average margins: 24.67 percent (Minmetals) and 305.56 percent (all others).[66] Commerce reported that for the final results of this expedited second five-year review, it found the same margins as reported in its original investigations because those margins were the only calculated rates that reflected the behavior of exporters without the discipline of an order and information from subsequent reviews of the order did not warrant the use of a more recently calculated dumping margin.[67]

Commerce's administrative reviews

There have been no completed administrative reviews or new shipper reviews since the issuance of the antidumping duty order. There have also been no changed circumstances reviews or duty absorption findings concerning the antidumping duty order.[68] The antidumping duty order remains in effect for all manufacturers, producers, and exporters of pure magnesium in granular form from China.[69]

Commerce's scope reviews

Commerce made two scope rulings prior to the first five-year reviews. On August 21, 2002, Commerce issued a scope ruling that found pure magnesium in granular form ground in Canada or another third country from pure magnesium ingots produced in China was within the scope of the order. On September 18, 2006, Commerce also determined that pure magnesium

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[65] *Pure Magnesium in Granular Form from the People's Republic of China: Continuation of Antidumping Duty Order*, 72 FR 14076, March 26, 2007.

[66] *Pure Magnesium in Granular Form from the People's Republic of China: Final Results of Expedited Sunset Review of Antidumping Duty Order*, 77 FR 33165, June 5, 2012.

[67] *Issues and Decision Memorandum for the Final Results of the Expedited Second Sunset Review of the Antidumping Duty Order on Pure Magnesium in Granular Form from the People's Republic of China*, May 29, 2012, p. 6.

[68] Commerce initiated a review of pure magnesium in granular form covering the period November 1, 2010 through October 31, 2011, citing one respondent, China Minmetals Non-ferrous Metals Co., Ltd. On December 30, 2011. *Initiation of Antidumping and Countervailing Duty Administrative Reviews and Request for Revocation in Part*, 76 FR 82268, 82273, December 30, 2011.

[69] *Issues and Decision Memorandum for the Final Results of the Expedited Second Sunset Review of the Antidumping Duty Order on Pure Magnesium in Granular Form from the People's Republic of China*, May 29, 2012, p. 2.

manufactured in the United States, exported to China for atomization, and returned to the United States was not within the scope of the order since the atomization process did not substantially transform pure magnesium.[70]

Commerce has issued two additional scope rulings since the 2007 continuation of the antidumping duty order. On October 27, 2011, Commerce issued a scope ruling finding that pure magnesium in granular form ground in Mexico from pure magnesium ingots produced in China was within the scope of the order. On October 28, 2011, Commerce once again determined that pure magnesium manufactured in the United States, exported to China for atomization, and returned to the United States was not within the scope of the order.[71]

The second five-year review

In May 2012, the Commission determined that it would conduct an expedited review of the antidumping duty order on pure granular magnesium from China. On June 5, 2012, Commerce published its determination that revocation of the antidumping duty order on pure granular magnesium from China would be likely to lead to continuation or recurrence of harm.[72] On September 25, 2012, the Commission notified Commerce of its determination that material injury would be likely to continue or recur within a reasonably foreseeable time.[73] Following affirmative determinations in the five-year reviews by Commerce and the Commission, effective, October 17, 2012, Commerce issued a continuation of the antidumping duty order on imports of pure granular magnesium from China.[74]

PRIOR RELATED INVESTIGATIONS

On December 17, 1999, the Commission received a request from the United States Trade Representative ("USTR") for an investigation under section 332(g) of the Tariff Act of 1930 for the purpose of providing advice concerning possible modifications to the U.S. Generalized System of Preferences ("GSP") for several products including alloy and granular magnesium. Subsequently, on December 23, 1999, the Commission instituted investigation No.

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[70] *Issues and Decision Memorandum from the Final Results of the Expedited Second Sunset Review of the Antidumping Duty Order on Pure Magnesium in Granular Form from the People's Republic of China*, May 29, 2012, p. 2.

[71] *Issues and Decision Memorandum for the Final Results of the Expedited Second Sunset Review of the Antidumping Duty Order on Pure Magnesium in Granular Form from the People's Republic of China*, May 29, 2012, pp. 2-3.

[72] *Pure Magnesium in Granular Form From the People's Republic of China: Final Results of Expedited Second Sunset Review of Antidumping Duty Order*, 77 FR 33165, June 5, 2012.

[73] *Pure Magnesium (Granular) From China*, 77 FR 59979, October 1, 2012.

[74] *Pure Magnesium in Granular Form from the People's Republic of China: Continuation of Antidumping Duty Order*, 77 FR 63787, October 17, 2012.

332-410.[75] After a public hearing was held on February 2, 2000, the Commission presented its advice to the USTR on March 16, 2000.[76] In a Presidential Proclamation of June 29, 2000, the President added granular magnesium to the list of GSP-eligible articles.[77]

There are no recent actions taken by the Commission or Commerce.

THE PRODUCT

Commerce's scope

Commerce has defined the subject merchandise as:[78]

"The scope of this order excludes pure magnesium that is already covered by the existing order on pure magnesium in ingot form, and currently classifiable under item numbers 8104.11.00 and 8104.19.00 of the Harmonized Tariff Schedule of the United States (''HTSUS'').[79]

The scope of this order includes imports of pure magnesium products, regardless of chemistry, including, without limitation, raspings, granules, turnings, chips, powder, and briquettes, except as noted above.

Pure magnesium includes: (1) Products that contain at least 99.95 percent primary magnesium, by weight (generally referred to as ''ultra pure'' magnesium); (2) products that contain less than 99.95 percent but not less than 99.8 percent primary magnesium, by weight (generally referred to as ''pure'' magnesium); (3) chemical combinations in which the pure magnesium content is 50 percent or greater, but less than 99.8 percent, by weight, that do not conform to an ''ASTM Specification for Magnesium Alloy'' 3 (generally referred to as ''off specification pure'' magnesium); and (4) physical mixtures of pure magnesium and other material(s) in which the pure magnesium content is 50 percent or greater, but less than 99.8 percent, by weight. Excluded from this order are mixtures containing 90 percent or less pure magnesium by weight and one or more of certain nonmagnesium granular materials to make magnesium-based reagent mixtures. The non-magnesium granular materials of which the

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[75] *Advice Concerning Possible Modifications to the U.S. Generalized System of Preferences*, 64 FR 73574, December 30, 1999.

[76] *See Advice Concerning Possible Modifications to the U.S. Generalized System of Preferences*, Inv. No. 332-410, USITC Publication 3288 (March 2000).

[77] *Proclamation 7325 of June 29, 2000 to Modify Duty-Free Treatment Under the Generalized System of Preferences and for Other Purposes*, 65 FR 41313, July 3, 2000.

[78] *Pure Magnesium in Granular Form From the People's Republic of China: Final Results of Expedited Second Sunset Review of Antidumping Duty Order*, 77 FR 33165, June 5, 2012.

[79] Commerce further explained that: "There is an existing antidumping duty order on pure magnesium from the People's Republic of China (PRC). The scope of this order excludes pure magnesium that is already covered by the existing order on pure magnesium in ingot form, and currently classifiable under item numbers 8104.11.00 and 8104.19.00 of the Harmonized Tariff Schedule of the United States ("HTSUS")." Ibid.

Department is aware used to make such excluded reagents are: lime, calcium metal, calcium silicon, calcium carbide, calcium carbonate, carbon, slag coagulants, fluorspar, nephaline syenite, feldspar, aluminum, alumina (Al_2O_3), calcium aluminate, soda ash, hydrocarbons, graphite, coke, silicon, rare earth metals/mischmetal, cryolite, silica/fly ash, magnesium oxide, periclase, ferroalloys, dolomitic lime, and colemanite. A party importing a magnesium-based reagent which includes one or more materials not on this list is required to seek a scope clarification from the Department before such a mixture may be imported free of antidumping duties.

The merchandise subject to this order is currently classifiable under item 8104.30.00 of the HTSUS. Although the HTSUS subheading is provided for convenience and customs purposes, our written description of the scope of this order is dispositive."

Description and uses[80]

Magnesium, the eighth most abundant element in the earth's crust and the third most plentiful element dissolved in seawater, is a silver-white metallic element. It is the lightest of all structural metals with a density approximately 63 percent of that of aluminum, the principal metal with which it competes in the U.S. market. Magnesium's low weight and high vibrational-dampening properties have encouraged the development of magnesium-based alloys with improved physical and mechanical properties for use as a structural metal in applications where minimizing weight is an important design consideration. The principal end-use applications for magnesium in the United States in 2015 were, in descending order, metals production from reduction of metal-halide compounds, aluminum alloying, die casting, and iron and steel desulfurization.[81]

Pure Magnesium

Pure magnesium[82] in unwrought form[83] contains at least 99.8 percent magnesium by weight, and includes both ultra-pure or ultra-high purity ("UHP") and commodity-grade magnesium. UHP magnesium is unwrought magnesium that contains at least 99.95 percent magnesium by weight, and is typically used as a processing reagent by the pharmaceutical and chemical industries. Commodity-grade magnesium is unwrought magnesium that contains at

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[80] Unless otherwise noted, this information is based on *Pure Granular Magnesium From China, Inv. No. 731-TA-895 (Second Review)*, USITC Publication 4350, September 2012, pp. I-6 through I-21.

[81] Bray, E. Lee, "Magnesium (Advanced Release)," *2015 Minerals Yearbook*, USGS, February 2017, p. 45.2.

[82] Unless otherwise noted, the term "pure magnesium" consists of both pure magnesium ingot and pure granular magnesium.

[83] "Unwrought" magnesium is pure magnesium that has not been further worked. "Wrought" magnesium is magnesium that has been further worked by mechanical processes into desired shapes, e.g., extrusions, rolled products, wire, forgings, etc. Wrought magnesium is not within the scope of any of the current antidumping duty orders in place for magnesium imported from China.

least 99.8 percent magnesium but less than 99.95 percent magnesium by weight, and is most commonly used in the aluminum alloying industry.

Pure magnesium is widely used in commercial and industrial applications because it is easily machined and lightweight, has a high strength-to-weight ratio, and has special chemical and electrical properties. Its metallurgical and chemical properties allow pure magnesium to readily alloy with other metals such as aluminum. Pure magnesium is typically sold to end users who then combine it with other elements for use in a final product. Generally, a magnesium ingot in its pure state has little direct commercial application except when alloyed. Pure magnesium is typically used in the production of aluminum alloys for use in beverage cans, in die-cast automotive parts, in iron and steel desulfurization, as a reducing agent for producing various other nonferrous metals (e.g., titanium, zirconium, hafnium, uranium, and beryllium), and in magnesium anodes for corrosion protection of iron and steel in underground pipes and water tanks and in various marine applications. Pure magnesium also is used in the production of titanium sponge, which is a precursor form for the production of titanium metal products for use in aerospace, medical, and industrial applications.

Magnesium Alloy

Magnesium alloy (alloy magnesium) consists of chemical combinations of magnesium and other metals, typically aluminum and zinc, containing less than 99.8 percent magnesium but more than 50 percent magnesium by weight, with magnesium the largest metallic element in the alloy by weight. Magnesium alloy is typically produced to meet various industry-recognized American Society for Testing and Materials ("ASTM") specifications for magnesium alloy such as AM50A, AM60B, and AZ91D.[84] Magnesium alloy has a high strength-to-weight ratio and is easily machined, making it ideal for use in a number of structural components; for example, the alloying elements contained in magnesium alloy are critical in imparting to the product the structural characteristics necessary for use in die-casting applications. Thus, it is principally used in structural applications, primarily in castings (die, permanent mold, and sand) and extrusions for the automotive industry. Magnesium alloy has certain properties that improve its strength, ductility, workability, corrosion resistance, density, or castability compared to pure magnesium. In contrast, pure magnesium is not used in structural applications because its low tensile and yield strengths.

"Off-specification Pure" Magnesium

Off-specification pure magnesium is pure primary magnesium containing magnesium scrap, secondary magnesium, oxidized magnesium, or impurities (whether or not intentionally

[84] The ASTM specifications designate the chemical composition of the alloy. The first two letters designate the two most prevalent alloying elements— e.g., "A" for aluminum, "M" for manganese, or "Z" for zinc— while the numbers represent the percent of other elements contained in the alloy, by weight. For example, AZ91D contains 9 percent aluminum, 1 percent zinc, and 90 percent magnesium.

added) that cause the primary magnesium content to fall below 99.8 percent by weight. Off-specification pure magnesium products contain 50 percent or greater, but less than 99.8 percent primary magnesium, by weight; do not conform to ASTM specifications for magnesium alloy; and generally do not contain individually or in combination, 1.5 percent or more, by weight, of the following alloying elements: aluminum, manganese, zinc, silicon, thorium, zirconium, and rare earths. Typically, producers do not set out to produce off-specification pure magnesium. Rather, its production results from starting or re-starting the primary magnesium production process, or some malfunction in the production process.

Primary Versus Secondary Magnesium

"Primary magnesium" refers to unwrought magnesium metal shapes (principally ingot) which are produced by decomposing virgin raw materials into magnesium metal. "Secondary magnesium" is pure or magnesium alloy that is produced by recycling magnesium-based scrap. Most primary and secondary magnesium alloy is similar physically and chemically. However, primary pure magnesium is not used in automotive die castings. Only higher purity secondary magnesium alloy, typically produced from scrap recovered from used automotive parts, is acceptable for use in automotive die-casting applications.

Magnesium Scrap

Magnesium scrap is typically divided into two categories, depending upon its origin. "Old (postconsumer) scrap" becomes available to producers of secondary magnesium after durable and nondurable consumer products are discarded from end-use categories such as packaging, building and construction, automobiles, electrical products, machinery and equipment, etc. "New (process) scrap" is metal that never reaches the end-use consumer, but rather, is generated by fabricators in the process of converting wrought and cast products into consumer or industrial products.[85] "Home scrap" is a sub-type of new scrap that is recycled within the company that generated the scrap and consequently seldom enters the commercial secondary magnesium market. "Prompt scrap" is another sub-type of new scrap from a fabricator that either does not choose to or is not equipped to recycle the scrap. This scrap then enters the secondary magnesium market. New scrap may include solids, clippings, stampings, and cuttings; borings and turnings that are generated during machining operations; and melt residues in the forms of skimmings, drosses, spillings, and sweepings.

[85] New magnesium-based scrap typically falls into one of four "type" categories. Type I is high-grade scrap recovered from die-casting operations, which is uncontaminated by oils. Types II, III, and IV are lower-grade scrap categories, typically either oil-contaminated scrap, dross from magnesium-processing operations, or chips and fines. Type-I scrap is either reprocessed at the die-casting facility or sold to a scrap processor. The other types of scrap are either consumed directly in steel desulfurization applications (as chips and fines) or sold to scrap processors.

Cast Versus Granular Magnesium

"Cast magnesium" is the solid, cooled form (as ingots) of molten magnesium metal. Most pure and magnesium alloy ingots are sold in standard bar sizes ranging in weight from 12 to 500 pounds per bar. Ingots may vary somewhat in dimension as some die casters may require bars of certain dimensions to fit the specific configuration of their furnaces. "Granular magnesium" is cast magnesium that has been ground, chipped, crushed, machined, or atomized into raspings, granules, turnings, chips, powder, or briquettes and is different from cast magnesium in size, dimensions, and shape. Granular magnesium includes all non-molten physical forms of magnesium other than castings. Although the chemical compositions of cast magnesium and granular magnesium are identical since granular magnesium is typically ground from cast magnesium, granular magnesium is much more volatile than cast magnesium. Granular magnesium may be either pure or magnesium alloy. However, based on information obtained in the previous investigations of granular magnesium imported from China, granular magnesium is typically pure magnesium or "off specification" pure magnesium (magnesium alloy not meeting ASTM specifications for magnesium alloy).[86] Most aluminum producers purchase larger pure cast shapes such as rounds, billets, peg-lock ingots, or T-shapes; whereas die casters sometimes require magnesium in the form of ingot as an input of their furnace. Other die casters can purchase ingots and granular primary magnesium alloy for use in magnesium alloy castings, and/or recycle scrap magnesium generated in their die-casting operations into secondary magnesium alloy.[87] Granular magnesium, on the other hand, typically is used in the production of magnesium-based desulfurizing reagent mixtures that are used in steelmaking to reduce the sulfur content of steel.[88] Lesser amounts of granular magnesium are used in defense applications, such as military ordnance and flares.

[86] "Off-specification pure" magnesium falls within the scope of the antidumping duty on magnesium from China in granular form that is subject to this review.

[87] Normally, die-casting companies pay to have the magnesium metal slivers removed because they are difficult to recycle, but some facilities have a process to economically recycle the turnings. Kramer, Deborah A., Mineral Industry Surveys, Magnesium in the First Quarter 2011, USGS, May 2011.

[88] Firms that grind magnesium ingots into granular form are known as "grinders." U.S. grinders typically sell three different steel desulfurization blends: (1) containing 90 percent pure magnesium powder and 10 percent lime (calcium oxide), (2) containing 25 percent magnesium and 75 percent lime; and (3) containing 8-10 percent magnesium with the remainder lime and calcium carbonate. Fluorspar (calcium fluoride) and a fluidizer are also incorporated into these products.

Manufacturing process[89]

Primary Magnesium

Worldwide, most magnesium is derived from magnesium-bearing minerals— dolomite (calcium-magnesium carbonate), magnesite (magnesium carbonate), brucite (magnesium hydroxide), and olivine (iron-magnesium silicate)— seawater, and well and lake brines.[90] Large deposits of dolomite are widely distributed throughout the world, and are mined by open-pit methods. However, in the United States, primary magnesium production is performed by extracting magnesium from brines of the surface waters of the Great Salt Lake in Utah (by US Magnesium).[91]

Magnesium metal is normally produced by either an electrolytic process or a silicothermic process, with the electrolytic process dominating in terms of the volume of United States and world production. The silicothermic process (also known as the Pidgeon process) is used by a majority of the largest producers in China. The silicothermic process was reported to be less cost-effective than the electrolytic process for production of magnesium.

US Magnesium uses the electrolytic method to produce magnesium. Figure 1 is a schematic diagram of US Magnesium's production process. In the electrolytic process, seawater or brine is evaporated and further treated to produce a concentrated solution of magnesium chloride, which is further concentrated and dried to yield magnesium-chloride powder. The powder is then melted, further purified, and fed into electrolytic cells operating at 700 degrees Celsius. Direct electric current is passed through the cells to break down the magnesium chloride into chlorine gas and molten magnesium metal.[92] The metal rises to the surface where it is guided into storage wells and cast into ingots.

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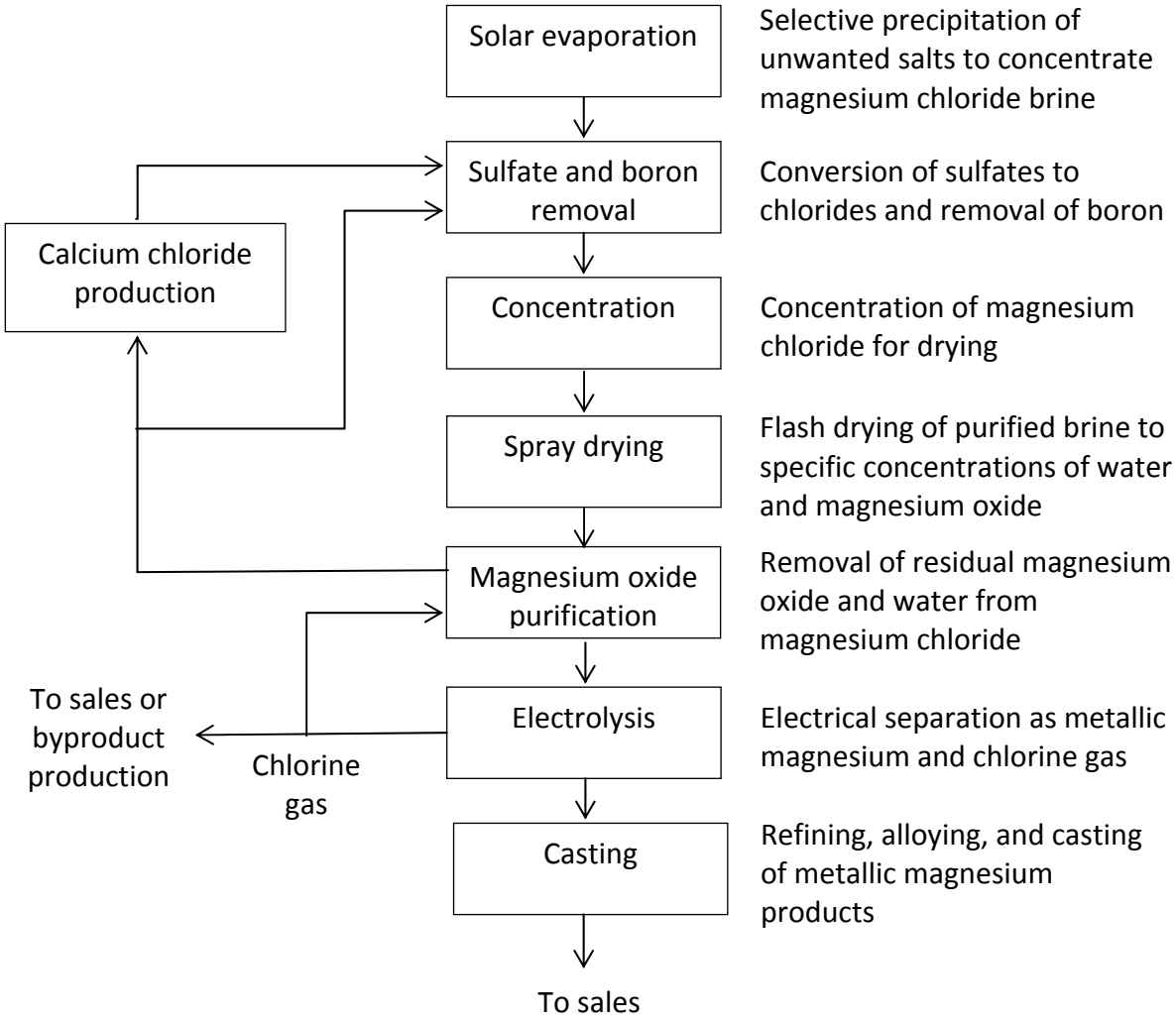
[89] Unless otherwise noted, this information is based on *Pure Granular Magnesium From China, Inv. No. 731-TA-895 (Second Review)*, USITC Publication 4350, September 2012, pp. I-16 through I-19.

[90] The magnesium content of magnesium-bearing ores typically ranges from nearly 22 percent for dolomite to 69 percent for brucite. The magnesium content of seawater is 0.13 percent, which is much lower than that of the lowest grade of magnesium ore deposits; however, seawater has the advantage of being abundant, accessible, and of consistent magnesium content, allowing for easier standardization of the refining process.

[91] The former U.S. producer Northwest Alloys used dolomite in its process but ceased production of magnesium in October 2001.

[92] The electrolytic cells must be kept in constant operation because if they are shut down, then the refractory lining requires rebuilding or replacement, which is both costly and time consuming.

Figure I-1
Schematic diagram of US Magnesium's production process flow chart



Source: US Magnesium.

Once the electrolytic or silicothermic reduction of magnesium is completed, the manufacturing processes used for the production of both pure and magnesium alloy ingot are very similar. In US Magnesium's facility that produces both pure and alloy magnesium, the same production employees work on both lines.

Both primary pure and alloy magnesium begin with the production of molten pure magnesium. For US Magnesium, the production process for pure and magnesium alloy is identical to the point when alloys are added to the pure magnesium to make magnesium alloy. US Magnesium makes both pure and alloy magnesium using the same machinery, equipment, and workers. For both primary pure and alloy magnesium, the production of molten pure magnesium is either cast directly into the form of pure magnesium ingots or alloyed by the

addition of alloying elements and scrap magnesium prior to casting to produce magnesium alloy ingots. US Magnesium reported that the amount of value added to the magnesium in the alloying phase is small.

Primary magnesium is typically cast into ingots or slabs. Aluminum producers usually purchase larger pure cast shapes such as rounds, billets, peg-lock ingots, or T-shapes. Producers of magnesium powder for steel desulfurization applications typically purchase smaller ingots or magnesium "chips" that are then ground into powder[93] and used internally to produce magnesium-based reagent mixtures or, to a lesser extent, pyrotechnic products. Die casters purchase ingots and granular primary magnesium alloy for use in magnesium alloy castings, and/or recycle scrap magnesium generated in their die casting operations into secondary magnesium alloy. The production facilities, processes, and employees of cast and granular magnesium do not overlap. Primary and secondary producers of cast magnesium in ingot form extract magnesium from raw materials or scrap and cast it into magnesium ingots or slabs. Granular production facilities (known as "grinders") purchase cast magnesium in ingot form, transform the physical shape by grinding it, and then sell powdered/granule magnesium to end users.

Magnesium, in either molten or ingot form, is also used in the production of titanium sponge, which is a precursor form for the production of titanium metal products. In the Kroll reduction process, titanium sponge results from the reduction of titanium tetrachloride with magnesium.[94]

Secondary Magnesium

Secondary magnesium is produced from the recovery of magnesium-based scrap.[95] The magnesium scrap arrives at the recycler, either in loose forms or contained in boxes. After the

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[93] Magnesium chips are ground into powder using a particle reduction process. Magnesium powder can also be produced from molten pure magnesium by atomization (spraying through nozzles); however, this technique is less frequently used than grinding.

[94] The titanium tetrachloride is reacted in a molten pool of magnesium metal in which the temperature and composition of the mixture are carefully controlled. Along with pure titanium metal sponge, molten magnesium chloride (the result of magnesium reacting with the molten titanium tetrachloride) is a product of the reaction. The magnesium chloride can be further refined back into pure magnesium in an electrolytic cell. The electrolytic cell separates the magnesium metal from the chlorine, which is also collected for sale. All titanium tetrachloride producers use chlorine gas in the production of titanium tetrachloride. For more information, see: "Manufacturing Process" in *Titanium Sponge From Japan and Kazakhstan, Inv. No. 701-TA-587 and 731-TA-1385-1386 (Preliminary)*, USITC Publication 4736, October 2017, pp. I-10 through I-12.

[95] However, recycled magnesium alloy contained in used aluminum beverage cans ("UBCs") often remains within the UBC material flow cycle, since an approximately two-thirds (67 percent in 2012) of all U.S. UBCs are recovered for melting, casting, and rolling into can stock for the production of new aluminum beverage cans. According to statistics of the Aluminum Association, Can Manufacturers Institute ("CM"), and Institute of Scrap Recycling Industries ("ISRI"), the U.S. aluminum industry recycled

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magnesium is separated out from other alloys by the recycler, the sorted magnesium is heated in a steel crucible to nearly 675 degrees Celsius. Alloying elements (such as aluminum, manganese, or zinc) can be added to the molten magnesium and the alloyed magnesium can then be cast in ingot molds by hand ladling, pumping, or tilt pouring. Secondary magnesium ingot can be processed by direct grinding into powder for iron and steel desulfurization applications.

U.S. tariff treatment

Pure granular magnesium is currently provided for in HTS subheading 8104.30.00 for raspings, turning and granules, graded according to size, and powders.[96] Pure granular magnesium imported from China enters the U.S. market at a column 1-general duty rate of 4.4 percent ad valorem.[97] U.S. imports from China of mixtures containing 90 percent or less pure magnesium by weight and one or more of certain nonmagnesium granular materials to make magnesium-based reagent mixtures are not subject to this review. U.S. imports of pure magnesium in ingot form and alloy magnesium from China, subject to current antidumping duty orders, are also not the subject of this review.[98]

The definition of the domestic like product

The domestic like product is defined as the domestically produced product or product which are like, or in the absence of like, most similar in characteristics and uses with, the subject merchandise. The history of defining the domestic like product for this investigation is described below.[99]

(…*continued*)
some 62 billion domestic and imported UBCs, and shipped some 92 billion new cans, in 2012. Aluminum Association, "Aluminum Can Continues Leadership In Sustainable Packaging As Most Recycled Beverage Container," October 24, 2013.

Conversely, aluminum beverage can manufacturers are sensitive to the presence of beryllium in melted scrap. Therefore, these firms generally do not purchase recycled magnesium alloy produced from scrap. *Magnesium From China and Russia*, Investigation Nos. 731-TA-1071-1072 (Review), USITC Pub. 4214, February 2011, p. I-25.

[96] HTS subheading 8104.30.00 may contain either pure or alloy magnesium products. However, the Commission reported that more than 95 percent of the entries under this subheading are pure magnesium products containing at least 99.8 percent magnesium by weight. *Pure Magnesium From China*, Investigation No. 731-TA-895 (Review), USITC Pub. 3908, March 2007, p. I-9.

[97] *Harmonized Tariff Schedule of the United States (2017) — Revision 1*, USITC Publication 4706, July 2017, p. 81-4.

[98] Pure magnesium in ingot form is generally classified under HTS subheading 8104.11.00 and magnesium alloy is generally classified under HTS subheading 8104.19.00.

[99] *Magnesium from China, Israel, Russia and Ukraine, Inv. Nos. 731-TA-696-698 (Final)*, USITC Publication 2885, May 1995, pp. 7-9; *Pure Magnesium from China, Israel, and Russia, Inv. Nos. 701-TA-403 (Preliminary) and 731-TA-895-897 (Preliminary)*, USITC Publication 3376, December 2000, p. 7.

(1) In the original investigation, the Commission majority defined a single domestic like product: pure magnesium that included both granular pure magnesium and pure magnesium ingot. In the preliminary phase of the original investigation, the Commission rejected a request to expand the domestic like product to include alloy magnesium and, in its final determination in the original investigation, the Commission reiterated that finding. Based on its definition of a single domestic like product that included pure magnesium in ingot and granular form, the Commission defined a corresponding domestic industry that included all producers of pure magnesium, including grinders.[100]

(2) In its first five-year review of the order concerning pure granular magnesium from China, the Commission defined a single domestic like product encompassing primary and secondary magnesium, including pure and alloy magnesium, whether ingot or granular form. In accordance with its domestic like product determination in that first five-year review, the Commission determined that there was one domestic industry composed of the domestic producers of pure and alloy magnesium, including primary and secondary magnesium, and magnesium in ingot and granular form. As in the original investigation, the Commission also included grinders in the domestic industry producing magnesium.[101]

(3) In its second five-year review of the order concerning pure granular magnesium from China, the Commission's determinations concerning magnesium were made in connection with the following five-year review: (1) the full five-year review concerning *Magnesium from China and Russia, Investigation Nos. 731-TA-1071-1072 (Review)*, USITC Pub. 4214, February 2011, in which the scope of the subject merchandise concerning China was alloy magnesium and the scope of the subject merchandise concerning Russia was pure and alloy magnesium, and (2) the expedited five-year review concerning *Pure Magnesium from China, Investigation No. 731-TA-696 (Third Review)*, USITC Pub. 4274, October 2011, in which the scope of the subject merchandise was pure magnesium ingot. Although the domestic like product determinations in the underlying proceedings concerning those recently completed five-year reviews varied,[102] the Commission consistently found in the

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[100] *Pure Magnesium from China and Israel, Inv. Nos. 701-TA-403 and 731-TA-895-896 (Final)*, USITC Pub. 3467, November 2001, pp. 6-16.

[101] Although the Commission majority included grinders in the domestic industry producing magnesium, one Commissioner did not include grinders in the domestic industry based on the finding that such firms did not engage in sufficient production-related activities. *Pure Magnesium from China, Inv. No. 731-TA-895 (Review)*, USITC Pub. 3908, March 2007, pp. 6-16.

[102] In the original injury determinations concerning *Pure Magnesium from China*, the Commission found pure and alloy magnesium to be separate domestic like products. In the first five-year review of that order, the Commission continued to define the like product as pure magnesium. In the second five-year review of the order (which was conducted simultaneously with five-year reviews of pure and alloy magnesium from Canada), the Commission was evenly divided on the question of whether pure and

(*continued*...)

2011 five-year reviews that pure and alloy magnesium were part of the same domestic like product. The Commission found that cast and granular magnesium, and primary and secondary magnesium, were part of the same domestic like product in both proceedings concluded in 2011. Based on the Commission's definition of a single domestic like product in those reviews, it determined that there was one domestic industry composed of the domestic producers of pure and alloy magnesium,[103] including primary and secondary magnesium, and magnesium in ingot and granular form.[104]

(…*continued*)
alloy magnesium were one or two domestic like products. *Pure Magnesium from China, Investigation No. 731-TA-696 (Third Review)*, USITC Pub. 4274, October 2011, pp. 6-7. The original injury determinations concerning *Magnesium from China and Russia* were the first in which the Commerce Department defined pure and alloy magnesium as a single class or kind of merchandise. The Commission found in those original investigations that circumstances had changed sufficiently from other investigations involving magnesium products so as to blur the dividing line between pure and alloy magnesium. Therefore, the Commission determined that pure and alloy magnesium constituted a single domestic like product. The Commission also found that cast and granular magnesium, and primary and secondary magnesium, were part of the same like product. *Magnesium from China and Russia*, Investigation No. 731-TA-1071-1072 (Final), USITC Pub. 3763, April 2005, pp. 6-11.

[103] Although having previously defined pure and alloy magnesium as separate domestic like products in *Pure and Alloy Magnesium From Canada and Pure Magnesium from China, Investigation Nos. 701-TA-309-A-B and 731-TA-696 (Second Review)*, USITC Pub. 3859, July 2006, and *Pure Magnesium From China, Investigation No. 731-TA-895 (Review)*, USITC Pub. 3908, March 2007, Commissioner Aranoff concurred with the definition of a single domestic like product consisting of pure and alloy magnesium, noting that the record in those previous cases presented different circumstances and fact patterns.

[104] *Magnesium From China and Russia, Investigation Nos. 731-TA-1071-1072 (Review)*, USITC Pub. 4214, February 2011, pp. 4-12; *Pure Magnesium from China, Investigation No. 731-TA-696 (Third Review)*, USITC Pub. 4274, October 2011, pp. 4-8. Domestic die casters that recycled magnesium scrap were found by the Commission to be part of the domestic industry in its original 2005 determinations and 2011 first five-year reviews concerning alloy magnesium from China and pure and alloy magnesium from Russia; however, in the second five-year reviews on pure and alloy magnesium from Canada and pure magnesium completed in 2006, the Commission concluded that domestic die casters did not engage in sufficient production–related activities in their scrap recycling operations to be included in the domestic industry(ies). *Magnesium From China and Russia, Investigation Nos. 731-TA-1071-1072 (Final)*, USITC Pub. 3763, April 2005, p. 12, fn. 62; *Magnesium from China and Russia, Inv. Nos. 731-TA-1071-1072 (Review)*, USITC Pub. 4214, February 2011, pp. 11-12; and *Pure and Alloy Magnesium from Canada and Pure Magnesium from China, Inv. Nos. 701-TA-309-A-B and 731-TA-696 (Second Review)*, USITC Pub. 3859, July 2006, pp. 14-15. Domestic grinders were also found by the Commission majority to be part of a single domestic industry in its original 2005 determinations underlying the reviews concerning alloy magnesium from China and pure and alloy magnesium from Russia, although two Commissioners making determinations in the original investigations found cast and granular magnesium to be separate domestic like products and found grinders to be a separate industry. *Magnesium from China and Russia, Inv. No. 731-TA-1071-1072 (Final)*, USITC Pub. 3763, April 2005, p. 12. In the second five-year reviews on pure and alloy magnesium from Canada and pure magnesium from China completed in 2006, the Commission included grinders in the domestic industry producing magnesium, but noted the lack of
(*continued*...)

In its notice of institution for this review, the Commission solicited comments from interested parties regarding what they deemed to be the appropriate definition of the domestic like product. According to their response to the notice of institution, the domestic interested parties generally agree with the Commission's definition of the domestic like product and the domestic industry. However, they assert that, the Commission should not consider die-casters who simply recycle "runaround scrap" and are not producing a saleable product to be a domestic producer of magnesium.[105]

ACTIONS AT COMMERCE

Commerce has not conducted any changed circumstances reviews, critical circumstances reviews, scope rulings, duty absorption findings, company revocations, or anti-circumvention findings since the completion of the last five-year review.[106] In addition, Commerce has not made any duty absorption findings or issued any company revocations or scope rulings since the imposition of the order.

Current five-year review

Commerce is conducting an expedited review with respect to pure granular magnesium and intends to issue the final results of this review based on the facts available no later than February 8, 2018.[107]

(…*continued*)
information with respect to such producers. *Pure and Alloy Magnesium from Canada and Pure Magnesium from China, Inv. Nos. 701-TA-309-A-B and 731-TA-696 (Second Review)*, USITC Publication 3859, July 2006, p. 14. As previously indicated, in its 2007 review determination concerning pure magnesium from China, the Commission majority included grinders in the domestic industry producing magnesium, although one Commissioner did not include grinders in the domestic industry based on the finding that such firms did not engage in sufficient production-related activities. *Pure Magnesium from China, Inv. No. 731-TA-895 (Review)*, USITC Publication 3908, March 2007, pp. 14-15.

[105] *Domestic Interested Parties' Response to the Notice of Institution,* October 2, 2017, pp. 27-28. *See also* Pub. 3763 at 12, n. 62.

[106] Commerce initiated a review of pure magnesium in granular form covering the period November 1, 2010 through October 31, 2011, citing one respondent, China Minmetals Non-ferrous Metals Co., Ltd., on December 30, 2011. *Initiation of Antidumping and Countervailing Duty Administrative Reviews and Request for Revocation in Part*, 76 FR 82268, 82273, December 30, 2011.

[107] *Letter from Irene Darzenta Tzafolias, Director, Office VIII, U.S. Department of Commerce to Michael G. Anderson*, November 15, 2017.

THE INDUSTRY IN THE UNITED STATES

U.S. producers

During the final phase of the original investigation, the Commission received U.S. producer questionnaires from seven firms, which accounted for approximately one hundred percent of U.S. production of pure granular magnesium in the United States during 2000. During the first five-year review, the Commission received one response to the notice of institution, which accounted for approximately one hundred percent of U.S. production of pure granular magnesium in the United States during 2006. During the second five-year review, the Commission received a response from one firm, which accounted for approximately *** percent of magnesium in the United States during 2012.[108]

In response to the Commission's notice of institution in this third five-year review, the U.S. producers list the following nine firms (one firm fewer than the previous five-year review) as U.S. producers of the domestic like product: MagPro, AMACOR, MagRe Tech Inc., Rossborough, ESM, Hart Metals Inc., Reade Advanced Materials, Meridian Technologies, and Spartan Light Metal Productions.[109] Each producer has been individually described in the August 10, 2012 Staff Report to the Commission.[110]

Definition of the domestic industry and related party issues

The domestic industry is defined as the U.S. producers as a whole of the domestic like product, or those producers whose collective output of the domestic like product constitutes a major proportion of the total domestic production of the product. Under the related parties provision, the Commission may exclude a related party for purposes of its injury determination if "appropriate circumstances" exist.[111] In its prior five-year review determinations, the Commission defined the domestic industry as all U.S. producers of pure and alloy magnesium, including primary and secondary magnesium, magnesium in ingot and granular form, and including grinders.[112]

In its notice of institution for this review, the Commission solicited comments from interested parties regarding the appropriate definition of the domestic industry and inquired as

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[108] *Pure Magnesium (Granular) from China, Investigation No. 731-TA-895 (Second Review): Pure Magnesium (Granular) from China—Staff Report*, INV-KK-086, August 10, 2012, pp. I-34-I-36; *The Domestic Industry's Response to the Notice of Institution by U.S. Magnesium LLC*, November 21, 2006, p. 17.

[109] *Domestic Interested Parties' Response to the Notice of Institution*, October 2, 2017, Attachment 14.

[110] *Pure Magnesium (Granular) from China, Investigation No. 731-TA-895 (Second Review): Pure Magnesium (Granular) from China—Staff Report*, INV-KK-086, August 10, 2012, p. I-36-I-42.

[111] Section 771(4)(B) of the Tariff Act of 1930, 19 U.S.C. § 1677(4)(B).

[112] *Pure Magnesium (Granular) from China, Investigation No. 731-TA-895 (Second Review)*, USITC Publication 4350, September 2012, pp. 6-7.

to whether any related parties issues existed. The domestic interested parties did not cite any potential related parties issues and agreed with the Commission's prior definition of the domestic industry.[113]

U.S. producers' trade and financial data

The Commission asked domestic interested parties to provide trade and financial data in their response to the notice of institution of the current five-year review.[114] Table I-2 presents a compilation of trade and financial data submitted by U.S. producers in the original investigations and the first and second five-year reviews.

Table I-2
Magnesium: Trade and financial data submitted by U.S. producers, 2000, 2005, and 2011

* * * * * * *

U.S. IMPORTS AND APPARENT CONSUMPTION

U.S. importers

During the final phase of the original investigation, the Commission identified five importers of the merchandise.[115] US Magnesium indicated in its response to the Commission's notice of institution in the first five-year review of the order that it did not have information on firms that imported granular magnesium from China at that time.[116] In its response to the Commission's notice of institution in the second five-year review, US Magnesium listed three U.S. importers of the subject merchandise from China: Seychelle Environmental Technologies, Rossborough, and ESM.[117] Although the Commission did not receive responses from any respondent interested parties in this current review, in its response to the Commission's notice of institution, the domestic interested parties provided a list of five U.S. importers of the subject merchandise from China: Seychelle Environmental Technologies, Rossborough, ESM, United States Steel, and Odermath (USA), Inc.[118]

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[113] *Domestic Interested Parties' Response to the Notice of Institution,* October 2, 2017, pp. 27-28.

[114] Individual company trade and financial data are presented in app. B.

[115] *Investigation No. 701-TA-403 and 731-TA-895-896 (Final): Pure Magnesium from China and Israel –Staff Report*, INV-Y-219, October 24, 2001 p. IV-1.

[116] *Investigation No. 731-TA-895 (Review): Pure Magnesium from China—Staff Report*, INV-EE-009, February 1, 2007, p. I-39.

[117] *Investigation No. 731-TA-895 (Second Review): Pure Magnesium from China – Staff Report*, INV-KK-086, August 10, 2012, p. I-51.

[118] *Domestic Interested Parties' Response to the Notice of Institution*, October 2, 2017, Attachment 15.

U.S. imports

Tables I-3 and I-4 present the quantity, value, and unit value for imports from China, as well as the other top sources of U.S. imports. In general, the quantity of imports of pure granular magnesium decreased from 2000 to 2011, as did the correlating value. Generally, imports of the subject merchandise fell to negligible levels during the period immediately following the imposition and first continuation of the antidumping order and then increased some in subsequent years.[119] US Magnesium has argued that some data may represent misclassified merchandise (i.e., desulfurization reagents) entered incorrectly under 8104.30.00 and which are excluded from the scope of the antidumping duty order. US Magnesium has also argued, as it does in response to the instant notice of institution, that the antidumping duty order and resulting decline in U.S. imports of the subject magnesium has provided significant benefits to the domestic magnesium industry.[120]

[119] *Investigation No. 731-TA-895 (Second Review): Pure Magnesium from China – Staff Report*, INV-KK-086, August 10, 2012, p. I-52.

[120] *Investigation No. 731-TA-895 (Second Review): Pure Magnesium from China – Staff Report*, INV-KK-086, August 10, 2012, p. I-52; *Domestic Interested Parties' Response to the Notice of Institution*, October 2, 2017, p. 11.

Table I-3
Magnesium: U.S. imports from all sources: 2000, 2005, and 2011

Source	Original Investigation[1]	Review 1	Review 2
	2000	2005	2011
	Quantity (metric tons)		
Pure granular magnesium:			
China	15,262	1,484	3,283
Canada[2]	5,993	758	962
All other sources	104	269	616
Total	21,359	2,510	4,861
Pure magnesium ingot:			
China (nonsubject) [3]	244	19	65
All other sources[4]	22,689	28,693	14,250
Total	22,933	28,712	14,315
Alloy magnesium:			
China[5]	6,671	36	6
All other sources[6]	31,744	41,384	7,361
Total	38,415	41,420	7,367
	Landed, duty-paid value ($1,000)		
Pure granular magnesium:			
China	33,527	4,211	9,436
Canada	12,583	2,500	4,062
All other sources[2]	448	1,448	2,607
Total	46,558	8,159	16,105
Pure magnesium ingot:			
China (nonsubject) [3]	345	35	463
All other sources[4]	62,200	85,248	70,205
Total	62,545	85,283	70,668
Alloy magnesium:			
China[5]	13,497	89	33
All other sources[6]	114,399	137,364	42,235
Total	127,896	137,453	42,268

[1] For 1998 and 1999 data, *See Investigation No. 731-TA-895 (Second Review): Pure Magnesium from China – Staff Report*, INV-KK-086, August 10, 2012.

[2] Canada was the primary other source of pure granular magnesium in 2000 and 2005.

[3] Imports of pure magnesium ingot from China were under an antidumping duty order throughout the period.

[4] Russia, Israel, and Canada were the primary sources of the nonsubject pure magnesium ingot during 2000 and 2005. China was a substantial source in 1998 but not in subsequent years.

[5] Imports of alloy magnesium from China were placed under an antidumping duty order in April 2005.

[6] Canada was the primary source of nonsubject alloy magnesium in 2000 and 2005.

Source: Official Commerce statistics (HTS subheadings 8104.11.00, 8104.30.00, and 8104.19.00 for pure magnesium ingot, pure granular magnesium, and alloy magnesium, respectively), as cited in *Pure Magnesium (Granular) from China, Inv. No. 731-TA-895 (Second Review)*, USITC Publication 4350, September 2012, table I-7.

Table I-4
Pure granular magnesium: U.S. imports from all sources, 2012-16

Item	2012	2013	2014	2015	2016
	Quantity (metric tons)				
China (subject)	4,605	3,651	5,577	4,045	860
Other sources (nonsubject)	19	30	10	26	81
Switzerland	10	11	37	26	24
Russia	0	28	45	69	14
Germany	76	97	88	48	50
Canada	985	885	1,048	1,190	755
Brazil	155	0	0	0	0
Austria	251	94	143	191	370
Australia	36	11	110	0	50
Total imports	6,136	4,807	7,058	5,595	2,204
	Landed, duty-paid value ($1,000)				
China (subject)	12,929	10,081	14,555	9,873	1,850
Other sources (nonsubject)	131	222	96	253	393
Switzerland	226	267	375	311	229
Russia	0	183	281	482	69
Germany	510	511	253	143	143
Canada	4,724	3,400	4,521	5,001	3,418
Brazil	833	0	0	0	0
Austria	1,285	677	922	1,136	1,807
Australia	256	58	320	0	411
Total imports	20,897	15,402	21,327	17,200	8,323

Note.--Because of rounding, figure may not add to total shown.

Source: Official statistics of Commerce for HTS subheading 8104.30.00.

Apparent U.S. consumption and market shares

The demand for magnesium in the United States is derived primarily from the final product demand in its major end-use segments: aluminum alloying for aluminum packaging, die casting for use in the automotive/transportation industry, iron and steel desulfurization for use in the construction industry, and various uses in the defense, aerospace, and chemical intermediates industries.[121] Demand for magnesium in these end uses in the United States generally tracks overall economic activity.

Table I-5 presents data on U.S. producers' U.S. shipments, U.S. imports, and apparent U.S. consumption. This table illustrates a general downward trend of U.S. consumption from 2000 to 2016. Since the initial investigation, U.S. consumption for magnesium has fallen *** metric tons. Due to an increase in use for iron and steel desulfurization as the U.S. steel industry recovered somewhat from the economic downturn, U.S. consumption of primary magnesium in the United States increased slightly from 2009 to 2010.[122]

[121] *Domestic Interested Parties' Response to the Notice of Institution*, October 2, 2017, pp. 24-27.
[122] *Staff Report to the Commission, 731-TA-895 (Second Review)*, August 10, 2012, p. I-60.

Table I-5
Magnesium: U.S. producers' U.S. shipments, U.S. imports, and apparent U.S. consumption, 2000, 2005, 2011, and 2016

Item	2000	2005	2011	2016
	Quantity (metric tons)			
U.S. producers' U.S. shipments	***	***	***	***
U.S. imports from—				
China	15,262	1,484	3,283	860
All other	67,444	71,158	23,260	1,344
Total imports	82,706	72,642	26,543	2,204
Apparent U.S. consumption	***	***	***	***

Source: For the years 2000, 2005, and 2011, data are compiled using data submitted in each Commission prior proceeding. *See app. C and official Commerce statistics (HTS subheadings 8104.11.00, 8104.30.00, and 8104.19.00 for pure magnesium ingot, pure granular magnesium, and alloy magnesium, respectively)*. For the year 2016, U.S. producers' U.S. shipments are compiled from the domestic interested parties' response to the Commission's notice of institution and U.S. imports are compiled using official Commerce statistics under HTS subheading 8104.30.00 (pure granular magnesium).

Table I-6 presents data on U.S. market shares of U.S. apparent consumption. The domestic interested parties state that China has significant unused capacity and that it is highly export oriented.[123] Although they state that the global market outlook for the subject product remains uncertain, they argue that the domestic industry has benefitted from the antidumping duty order. Table I-5 supports this assertion. In spite of declines in U.S. consumption indicated in table I-5, table I-6 shows an increase in the U.S. producers' share of demand. From the imposition of the initial antidumping order, U.S. producer share has *** of the market value to *** and the Chinese share has ***, which is lower than all other sources of import.

Table I-6
Magnesium: U.S. market shares of U.S. apparent consumption, 2000, 2005, 2011, and 2016

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[123] *Domestic Interested Parties' Response to the Notice of Institution*, October 2, 2017, p. 23.

THE INDUSTRY IN CHINA

Background

The Chinese magnesium metal producing industry at the time of the original investigation was characterized by a large number of production facilities manufacturing magnesium ingot. The total number of magnesium metal-producing plants in China was estimated at 84, with production dominated by nearly 60 export-oriented plants.[124] According to the China Magnesium Association ("CMA"), only 22 Chinese manufacturers had plants with an annual capacity of over 3,000 metric tons. The number of Chinese facilities producing magnesium was also reported during the original investigation to depend largely on the price level of magnesium ingot. In 1997, when magnesium ingot prices had been relatively higher, there were an estimated 400 magnesium plants in China. During the original investigation, the Commission received completed foreign producer questionnaire responses from only two Chinese firms (Shanxi Wenxi Yinguang Magnesium in Shanxi Province and Nanjing Ube Magnesium in Jingsu Province). ***.[125]

US Magnesium indicated in the expedited first five-year review that the Chinese magnesium industry had developed very rapidly since the original investigation and most of the world's supply of magnesium was produced in China at that time. It also argued in that first review that the Chinese magnesium industry continued to be export-oriented and remained the low-price supplier of magnesium to the world market.

Although the Commission did not receive responses from any respondent interested parties in its second five-year review, in its response to the Commission's notice of institution in the second five-year review, US Magnesium listed eight producers of the subject merchandise.[126] In response to the notice of institution in this third five-year review, US Magnesium listed the following nine producers of the subject merchandise: Yinguang Magnesium Industry Group Co., Ltd., Ningxia Hui-Ye Magnesium Group Co., Ltd., Wenxi Hongfu Magnesium Industry Co., Ltd., Hebi Grand Magnesium Co. Ltd., Taiyuan Yiwei Magnesium Industry Co. Ltf., Tangshan Weihao Magnesium Powder Co. Ltd., ESM Tianjin Co Ltd, Wealth International Trade & Investment, and International Challenge Inc.

Capacity and production

Capacity and production data specific to the subject merchandise (pure granular magnesium) in China are not available. Presented in Table I-7 are data published by the USGS on primary magnesium capacity and production in China for 2011-15. These data show that the capacity to produce primary magnesium in China at year-end 2011 was reported at just over 1.1

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[124] *Pure Magnesium (Granular) from China, Investigation No. 31-TA-891 (Second Review)*, INV-KK-086, August 10, 2012, p. I-64.

[125] Ibid., pp. I-64-I-65.

[126] Ibid., p. I-65.

million metric tons, which is nearly six times the 188,000 metric tons reported in 2000.[127] Primary magnesium production in China amounted to 852,000 metric tons during 2015, up by 177,000 metric tons (26.2 percent) from the amount produced in 2011. Calculated capacity utilization of primary magnesium production facilities in China rose from 60.3 percent in 2011 to a peak rate of 67.5 percent in 2013 but subsequently turned down to 53.3 percent during 2015.

Table I-7
Primary magnesium: Capacity and production data for China, 2011-15

Item	2011	2012	2013	2014	2015[1]
Capacity (metric tons)[2]	1,120,000	1,150,000	1,140,000	1,600,000	1,600,000
Production (metric tons)	675,000	698,000	770,000	874,000	852,000
Capacity utilization (percent)	60.3	60.7	67.5	54.6	53.3

[1] Most recent year for which data are available.
[2] Capacity data include capacity at both operating plants as well as at plants on a standby basis, at the end of each annual reporting period.

Source: U.S. Geological Survey, "Magnesium," *Minerals Yearbook* (various years); *Domestic Interested Parties' Response to the Notice of Institution*, October 2, 2017, attachment 7.

Table I-8 presents export data for pure granular magnesium from China in descending order of quantity for 2012-16. The domestic interested parties noted that U.S. import quantities from China under HTS 8104.30.0000 started increasing in 2010, and continued throughout this period of review (2012-16), from zero in 2008 and 2009, to 4,045 metric tons in 2015, and falling to 860 metric tons in 2016.[128] The domestic interested parties also continued to contend, as in the previous (second) review of the antidumping order, that at least some portion of these reported imports consisted of misclassified, out-of-scope material.[129]

[127] Kramer, Deborah A., "Magnesium," *Minerals Yearbook 2000*, USGS, 2001, p. 48.12.

[128] *Domestic Interested Parties' Response to the Notice of Institution*, October 2, 2017, p. 13 and attachment 3.

[129] US Magnesium indicated that it provided AMS (Automated Manifest System) records during the second review of the order, that showed desulfurization reagents being imported under HTS 8104.30.0000, but that Commerce had specifically excluded magnesium-based reagent mixtures from the scope of the order. For more information, see explanatory footnote no. 42 to the *Domestic Interested Parties' Response to the Notice of Institution*, October 2, 2017, pp. 13-14.

Table I-8
Pure granular magnesium: Exports of pure granular magnesium from China, by destination, 2012-16

Item	Calendar year				
	2012	2013	2014	2015	2016
	Quantity (metric tons)				
Canada	9,355	11,148	21,058	19,591	16,484
Netherlands	12,308	14,253	18,232	12,696	11,725
Turkey	7,561	9,358	8,125	8,788	8,517
India	4,444	4,672	4,949	6,189	7,417
Japan	4,886	5,249	5,938	5,877	5,275
South Africa	1,406	1,659	2,467	1,608	3,237
United Kingdom	3,212	4,168	4,215	3,576	2,832
Slovenia	1,680	2,622	2,170	1,734	2,732
Mexico	2,555	2,494	2,896	2,960	2,518
Germany	6,023	5,680	4,316	1,249	2,131
United States	21,245	13,209	5,484	3,729	787
All other	12,994	10,859	8,126	9,699	9,565
Total	87,669	85,371	87,976	77,696	73,220

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

Source: China Customs. IHS Markit, Global Trade Atlas, HS subheading 8104.30. These data may be overstated as HS 8404.30 may contain pure granular magnesium outside the scope of this review.

ANTIDUMPING OR COUNTERVAILING DUTY ORDERS IN THIRD-COUNTRY MARKETS

In April 2003, Brazil initiated antidumping investigations on imports from China of magnesium ingot, powder, and granules and on October 11, 2004, imposed antidumping duties of $0.99 per kilogram ($0.449 per pound) on magnesium granules. In October 2005, Brazil expanded the duties to include magnesium alloy from China.[130] The first review of the antidumping duties on imports of magnesium granules from China concluded with the Brazilian Ministry of Commerce announcing its decision, on October 7, 2010, to extend the order for another 5 years. The second review concluded with the announced decision on July 21, 2016, to extend the order for another 5 years.[131]

THE GLOBAL MARKET

Table I-9 presents the largest global export sources of pure granular magnesium during 2012-16.

Table I-9
Pure granular magnesium: Global exports by major sources, 2012-16

Item	2012	2013	2014	2015	2016
	Quantity (metric tons)				
China	87,669	85,371	87,976	77,696	73,220
Germany	6,616	7,030	7,037	6,679	5,584
Netherlands	1,505	1,278	4,024	2,333	2,584
United States	936	605	752	1,094	1,039
Turkey	705	946	1,007	1,013	909
Canada	988	886	1,056	1,190	788
Poland	673	925	846	823	722
Slovakia	375	168	280	310	720
Taiwan	627	496	697	683	670
Croatia	0	0	126	0	669
All other	3,582	3,590	3,223	3,217	2,375
Total	103,676	101,295	107,024	95,038	89,280

Note.--Because of rounding, figures may not add to total shown.

Source: IHS Markit, Global Trade Atlas, HS subheading 8104.30. These data may be overstated as HS 8404.30 may contain pure granular magnesium outside the scope of this review.

[130] *Pure Granular Magnesium From China*, Inv. No. 731-TA-895 (Second Review), USITC Publication 4350, September 2012, p. I-53.

[131] World Trade Organization (WTO), Committee on Anti-Dumping Practices, *Semi-annual Report Under Article 16.4 of the Agreement, Brazil*, G/ADP/N/300/BRA, October 2, 2017, p. 11.

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
82 FR 41651 September 1, 2017	*Pure Magnesium (Granular) from China; Institution of a Five-Year Review*	https://www.gpo.gov/fdsys/pkg/FR-2017-09-01/pdf/2017-18359.pdf
82 FR 42073 September 6, 2017	*Initiation of Five-Year (Sunset) Reviews*	https://www.gpo.gov/fdsys/pkg/FR-2017-09-06/pdf/2017-18763.pdf

APPENDIX B

COMPANY-SPECIFIC DATA

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APPENDIX C

SUMMARY DATA COMPILED IN PRIOR PROCEEDINGS

Table C-1
Pure magnesium ingot: Summary data concerning the U.S. market, 1998-2000, January-June 2000, and January-June 2001

(Quantity=*metric tons*; value=*1,000 dollars*; unit values, unit labor costs, and unit expenses are *per metric tons*; and period changes=*percent*, except where noted)

Item	Calendar year			January-June		Period changes			
	1998	1999	2000	2000	2001	1998-2000	1998-99	1999-2000	Jan.-June 2000-Jan.-June 2001
U.S. consumption quantity: Amount	***	***	***	***	***	***	***	***	***
Producers' share[1]	***	***	***	***	***	***	***	***	***
Importers' share:[1]									
Israel	***	***	***	***	***	***	***	***	***
China	***	***	***	***	***	***	***	***	***
Other sources	***	***	***	***	***	***	***	***	***
Total	***	***	***	***	***	***	***	***	***
U.S. consumption value: Amount	***	***	***	***	***	***	***	***	***
Producers' share[1]	***	***	***	***	***	***	***	***	***
Importers' share:[1]									
China	***	***	***	***	***	***	***	***	***
Israel	***	***	***	***	***	***	***	***	***
Other sources	***	***	***	***	***	***	***	***	***
Total	***	***	***	***	***	***	***	***	***
U.S. imports from--									
Israel:									
Quantity	7,991	11,778	6,317	3,303	1,755	-21.0	47.4	-46.4	-46.9
Value	25,624	38,160	19,304	10,434	5,335	-24.7	48.9	-49.4	-48.9
Unit value	$3,206.48	$3,239.93	$3,055.96	$3,159.02	$3,039.38	-4.7	1.0	-5.7	-3.8
Ending inventory	***	***	***	***	***	***	***	***	***
China:									
Quantity	2,194	0	244	186	83	-88.9	-100.0	(2)	-55.2
Value	5,469	0	345	264	97	-93.7	-100.0	(2)	-63.3
Unit value	2,493	(2)	$1,413.45	$1,421.09	$1,165.36	-43.3	(2)	(2)	-18.0
Ending inventory	***	***	***	***	***	***	***	***	***
Other sources:									
Quantity	16,275	15,077	16,372	8,103	7,077	0.6	-7.4	8.6	-12.7
Value	49,402	43,678	42,896	22,035	17,402	-13.2	-11.6	-1.8	-21.0
Unit value	$3,035.47	$2,897.01	$2,620.12	$2,719.42	$2,458.94	-13.7	-4.6	-9.6	-9.6
Ending inventory	***	***	***	***	***	***	***	***	***
All sources:									
Quantity	26,460	26,855	22,933	11,592	8,915	-13.3	1.5	-14.6	-23.1
Value	80,495	81,838	62,545	32,733	22,834	-22.3	1.7	-23.6	-30.2
Unit value	$3,042.11	$3,047.41	$2,727.33	$2,823.84	$2,561.13	-10.3	0.2	-10.5	-9.3
Ending inventory	***	***	***	***	***	***	***	***	***

(Quantity=*metric tons*; value=*1,000 dollars*; unit values, unit labor costs, and unit expenses are *per metric tons*; and period changes=*percent*, except where noted)

Item	Calendar year			January-June		Period changes			
	1998	1999	2000	2000	2001	1998-2000	1998-99	1999-2000	Jan.-June 2000-Jan.-June 2001
U.S. producers'--									
Capacity quantity	***	***	***	***	***	***	***	***	***
Production quantity	***	***	***	***	***	***	***	***	***
Capacity utilization[1]	***	***	***	***	***	***	***	***	***
U.S. shipments:									
Quantity	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Export shipments:									
Quantity	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***	***	***	***
Inventories/total shipments[1]	***	***	***	***	***	***	***	***	***
Production workers	***	***	***	***	***	***	***	***	***
Hours worked (*1,000 hours*)	***	***	***	***	***	***	***	***	***
Wages paid (*1,000 dollars*)	***	***	***	***	***	***	***	***	***
Hourly wages	***	***	***	***	***	***	***	***	***
Productivity (*tons per hour*)	***	***	***	***	***	***	***	***	***
Unit labor costs	***	***	***	***	***	***	***	***	***
Net sales:									
Quantity	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
COGS	***	***	***	***	***	***	***	***	***
Gross profit or (loss)	***	***	***	***	***	***	***	***	***
SG&A expenses	***	***	***	***	***	***	***	***	***
Operating income	***	***	***	***	***	***	***	***	***
Capital expenditures[3]	***	***	***	***	***	***	***	***	***
Unit COGS	***	***	***	***	***	***	***	***	***
Unit SG&A expenses	***	***	***	***	***	***	***	***	***
Unit operating income	***	***	***	***	***	***	***	***	***
COGS/sales[1]	***	***	***	***	***	***	***	***	***
Operating income or (loss)/sales[1]	***	***	***	***	***	***	***	***	***

[1] Period changes are in percentage points.
[2] Not applicable.
[3] Capital expenditures reported for primary producers and grinders.

Note.–Financial data are reported on a fiscal year basis and may not necessarily be comparable to data reported on a calendar year basis. Because of rounding, figures may not add to the totals shown.

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

Table C-2
Pure granular magnesium: Summary data concerning the U.S. market, 1998-2000, January-June 2000, and January-June 2001

(Quantity=*metric tons*; value=*1,000 dollars*; unit values, unit labor costs, and unit expenses are *per metric tons*; and period changes=*percent*, except where noted)

Item	Calendar year			January-June		Period changes			
	1998	1999	2000	2000	2001	1998-2000	1998-99	1999-2000	Jan.-June 2000-Jan.-June 2001
U.S. consumption quantity: Amount	***	***	***	***	***	***	***	***	***
Producers' share[1]	***	***	***	***	***	***	***	***	***
Importers' share:[1]									
China	***	***	***	***	***	***	***	***	***
Israel	***	***	***	***	***	***	***	***	***
Subtotal	***	***	***	***	***	***	***	***	***
Other sources	***	***	***	***	***	***	***	***	***
Total	***	***	***	***	***	***	***	***	***
U.S. consumption value: Amount	***	***	***	***	***	***	***	***	***
Producers' share[1]	***	***	***	***	***	***	***	***	***
Importers' share:[1]									
China	***	***	***	***	***	***	***	***	***
Israel	***	***	***	***	***	***	***	***	***
Subtotal	***	***	***	***	***	***	***	***	***
Other sources	***	***	***	***	***	***	***	***	***
Total	***	***	***	***	***	***	***	***	***
U.S. imports from-- China:									
Quantity	9,972	13,185	15,262	6,277	2,281	53.0	32.2	15.8	-63.7
Value	27,562	35,463	33,527	13,184	5,279	21.6	28.7	-5.5	-60.0
Unit value	$2,763.80	$2,689.61	$2,196.78	$2,100.41	$2,314.51	-20.5	-2.7	-18.3	10.2
Ending inventory	***	***	***	***	***	***	***	***	***
Israel:									
Quantity	0	0	0	0	0	(2)	(2)	(2)	(2)
Value	0	0	0	0	0	(2)	(2)	(2)	(2)
Unit value	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)
Ending inventory	***	***	***	***	***	***	***	***	***
Subtotal:									
Quantity	9,972	13,185	15,262	6,277	2,281	53.0	32.2	15.8	-63.7
Value	27,562	35,463	33,527	13,184	5,279	21.6	28.7	-5.5	-60.0
Unit value	$2,763.80	$2,689.61	$2,196.78	$2,100.41	$2,314.51	-20.5	-2.7	-18.3	10.2
Ending inventory	***	***	***	***	***	***	***	***	***
Other sources:									
Quantity	4,662	5,433	6,097	3,483	1,037	31.0	17.0	12.2	-70.2
Value	15,423	14,460	13,031	7,398	2,866	-16.0	-6.0	-9.9	-61.3
Unit value	$3,308.47	$2,661.49	$2,137.34	$2,124.05	$2,763.84	-35.4	-19.6	-19.7	30.1
Ending inventory	***	***	***	***	***	***	***	***	***

(Quantity=*metric tons*; value=*1,000 dollars*; unit values, unit labor costs, and unit expenses are *per metric tons*; and period changes=*percent*, except where noted)

Item	Calendar year			January-June		Period changes			
	1998	1999	2000	2000	2001	1998-2000	1998-99	1999-2000	Jan.-June 2000-Jan.-June 2001
All sources:									
Quantity	14,634	18,618	21,359	9,760	3,318	46.0	27.2	14.7	-66.0
Value	42,985	49,922	46,558	20,583	8,145	8.3	16.1	-6.7	-60.4
Unit value	$2,937.31	$2,681.41	$2,179.81	$2,108.84	$2,454.96	-25.8	-8.7	-18.7	16.4
Ending inventory	***	***	***	***	***	***	***	***	***
U.S. producers'--									
Capacity quantity	***	***	***	***	***	***	***	***	***
Production quantity	***	***	***	***	***	***	***	***	***
Capacity utilization[1]	***	***	***	***	***	***	***	***	***
U.S. shipments:									
Quantity	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Export shipments:									
Quantity	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***	***	***	***
Inventories/total shipments[1]	***	***	***	***	***	***	***	***	***
Production workers	***	***	***	***	***	***	***	***	***
Hours worked (*1,000 hours*)	***	***	***	***	***	***	***	***	***
Wages paid (*1,000 dollars*)	***	***	***	***	***	***	***	***	***
Hourly wages	***	***	***	***	***	***	***	***	***
Productivity (*tons per hour*)	***	***	***	***	***	***	***	***	***
Unit labor costs	***	***	***	***	***	***	***	***	***

[1] Period changes are in percentage points.
[2] Not applicable.

Note.–Financial data are reported on a fiscal year basis and may not necessarily be comparable to data reported on a calendar year basis. Because of rounding, figures may not add to the totals shown.

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

APPENDIX D

PURCHASER QUESTIONNAIRE RESPONSES

As part of their response to the notice of institution, interested parties were asked to provide a list of three to five leading purchasers in the U.S. market for the domestic like product. A response was received from domestic interested parties and it named the following five firms as the top purchasers of pure granular magnesium: ***. Purchaser questionnaires were sent to these firms and received from (***). *** indicated that they did not purchase the subject product, but *** indicated that it did and provided a response to the Commission's questions, as presented below.

1. a.) Have any changes occurred in technology; production methods; or development efforts to produce pure granular magnesium that affected the availability of pure granular magnesium in the U.S. market or in the market for pure granular magnesium in China since 2011?

   b.) Do you anticipate any changes in technology; production methods; or development efforts to produce pure granular magnesium that will affect the availability of pure granular magnesium in the U.S. market or in the market for pure granular magnesium in China within a reasonably foreseeable time?

   * * * * * * *

2. a.) Have any changes occurred in the ability to increase production of pure granular magnesium (including the shift of production facilities used for other products and the use, cost, or availability of major inputs into production) that affected the availability of pure granular magnesium in the U.S. market or in the market for pure granular magnesium in China since 2011?
   b.) Do you anticipate any changes in the ability to increase production (including the shift of production facilities used for other products and the use, cost, or availability of major inputs into production) that will affect the availability of pure granular magnesium in the U.S. market or in the market for pure granular magnesium in China within a reasonably foreseeable time?

   * * * * * * *

3. a.) Have any changes occurred in factors related to the ability to shift supply of pure granular magnesium among different national markets (including barriers to importation in foreign markets or changes in market demand abroad) that affected the availability of pure granular magnesium in the U.S. market or in the market for pure granular magnesium in China since 2011?

   b.) Do you anticipate any changes in factors related to the ability to shift supply among different national markets (including barriers to importation in foreign markets or changes in market demand abroad) that will affect the availability of pure granular magnesium in the U.S. market or in the market for pure granular magnesium in China within a reasonably foreseeable time?

   * * * * * * *

a.) Have there been any changes in the end uses and applications of pure granular magnesium in the U.S. market or in the market for pure granular magnesium in China since 2011?

b.) Do you anticipate any changes in the end uses and applications of pure granular magnesium in the U.S. market or in the market for pure granular magnesium in China within a reasonably foreseeable time?

* * * * * * *

4. a.) Have there been any changes in the existence and availability of substitute products for pure granular magnesium in the U.S. market or in the market for pure granular magnesium in China since 2011?

   b.) Do you anticipate any changes in the existence and availability of substitute products for pure granular magnesium in the U.S. market or in the market for pure granular magnesium in China within a reasonably foreseeable time?

* * * * * * *

a.) Have there been any changes in the level of competition between pure granular magnesium produced in the United States, pure granular magnesium produced in China, and such merchandise from other countries in the U.S. market or in the market for pure granular magnesium in China since 2011?

b.) Do you anticipate any changes in the level of competition between pure granular magnesium produced in the United States, pure granular magnesium produced in China, and such merchandise from other countries in the U.S. market or in the market for pure granular magnesium in China within a reasonably foreseeable time?

* * * * * * *

5. a.) Have there been any changes in the business cycle for pure granular magnesium in the U.S. market or in the market for pure granular magnesium in China since 2011?

   b.) Do you anticipate any changes in the business cycle for pure granular magnesium in the U.S. market or in the market for pure granular magnesium in China within a reasonably foreseeable time?

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