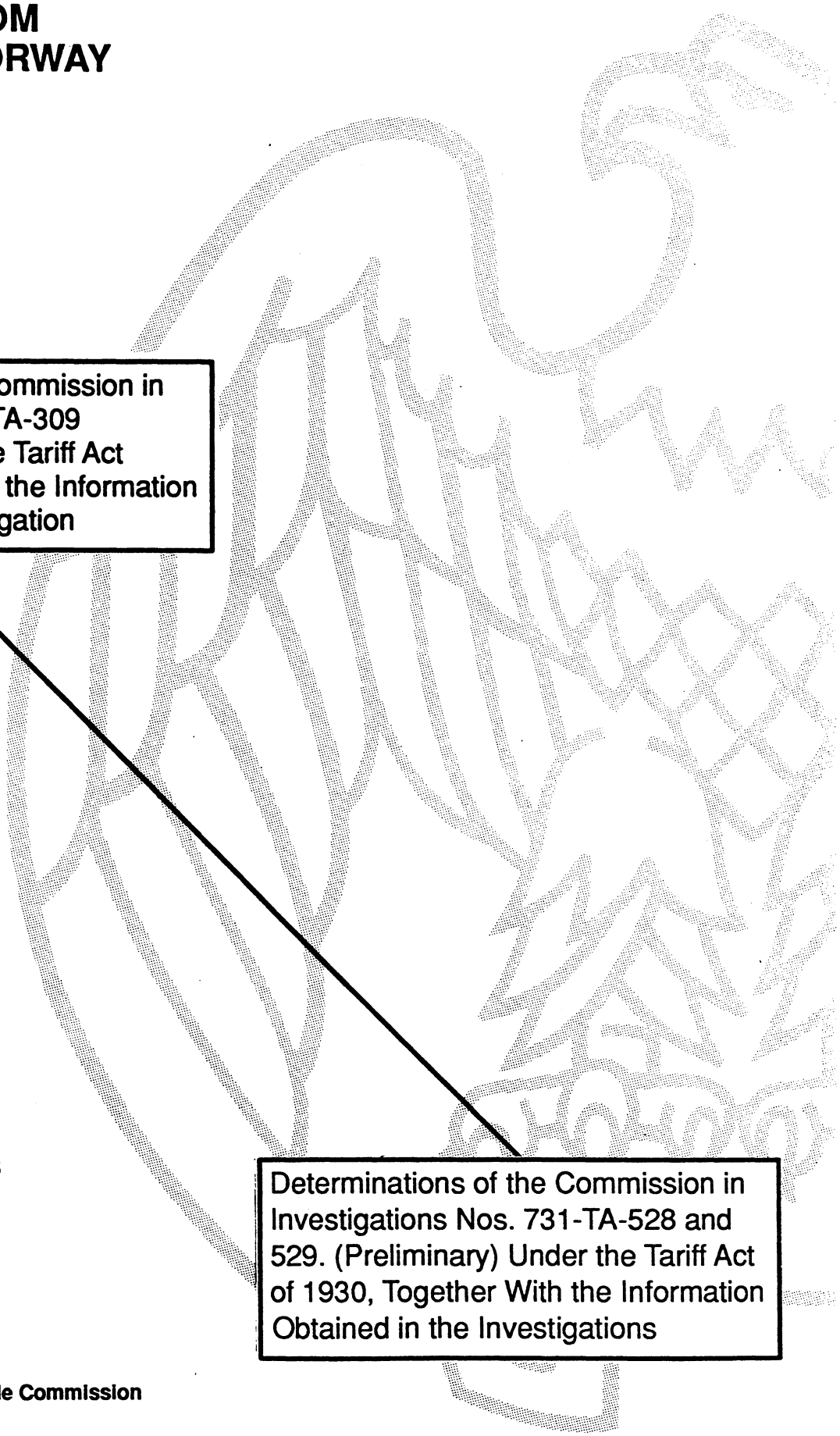
MAGNESIUM FROM CANADA AND NORWAY



Determination of the Commission in Investigation No. 701-TA-309 (Preliminary) Under the Tariff Act of 1930, Together With the Information Obtained in the Investigation

Determinations of the Commission in Investigations Nos. 731-TA-528 and 529. (Preliminary) Under the Tariff Act of 1930, Together With the Information Obtained in the Investigations

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UNITED STATES INTERNATIONAL TRADE COMMISSION

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United States International Trade Commission

Magnesium From Canada and Norway

Investigations Nos. 701-TA-309 and 731-TA-528 and 529 (Preliminary)

Determinations of the Commission Together with Information Obtained in the Investigations

October 1991

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Note.—Information that would reveal the business proprietary operations of individual concerns may not be published and, therefore, has been deleted from this report. Such deletions are indicated by asterisks.

Determinations and Views of the Commission

DETERMINATIONS

Magnesium from Canada and Norway
Investigations Nos. 701-TA-309 and 731-TA-528 and 529 (Preliminary)

On the basis of the record[1] developed in investigation No. 701-TA-309 (Preliminary), the Commission determines, pursuant to section 703(a) of the Tariff Act of 1930,[2] that there is a reasonable indication that an industry in the United States is materially injured by reason of imports from Canada of magnesium,[3] that are alleged to be subsidized by the Government of Canada.

The Commission further unanimously determines, on the basis of the record developed in investigations Nos. 731-TA-528 and 529 (Preliminary), pursuant to section 733(a) of the Tariff Act of 1930,[4] that there is a reasonable indication that an industry in the United States is materially injured by reason of imports from Canada and Norway of magnesium,[5] that are alleged to be sold in the United States at less than fair value (LTFV).

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

[2] 19 U.S.C. § 1671b(a).

[3] The products covered by this investigation are pure and alloy magnesium. Pure unwrought magnesium contains at least 99.8 percent magnesium by weight and is sold in various slab and ingot forms and sizes. Magnesium alloys contain less than 99.8 percent magnesium by weight, with magnesium being the largest metallic element in the alloy by weight. Pure and alloy magnesium are provided for in subheadings 8104.11.00 and 8104.19.00, respectively, of the Harmonized Tariff Schedule of the United States (HTS).

[4] 19 U.S.C. § 1673b(a).

[5] The products covered by these investigations are identical to those in investigation No. 701-TA-309 (Preliminary).

Background

On September 5, 1991, a petition was filed with the U.S. International Trade Commission (Commission) and the U.S. Department of Commerce (Commerce) by Magnesium Corp. of America (Magcorp), Salt Lake City, UT. The petition alleges that an industry in the United States is materially injured or threatened with material injury by reason of subsidized imports of magnesium from Canada and LTFV imports of magnesium from Canada and Norway. Accordingly, effective September 5, 1991, the Commission instituted countervailing duty investigation No. 701-TA-309 (Preliminary) and antidumping investigations Nos. 731-TA-528 and 529 (Preliminary).[6]

Notice of the institution of the Commission's investigations and of a public conference to be held in connection therewith was given by posting copies of the notice in the Office of the Secretary, U.S. International Trade Commission, Washington, DC, and by publishing the notice in the *Federal Register* of September 12, 1991.[7] The conference was held in Washington, DC, on September 26, 1991, and all persons who requested the opportunity were permitted to appear in person or by counsel.

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[6] The Commission also instituted preliminary countervailing duty investigation No. 701-TA-310 regarding imports from Norway; however, Commerce dismissed the petition involving Norway and the Commission accordingly terminated its investigation effective September 26, 1991 (56 F.R. 54887).

[7] 56 F.R. 46443.

VIEWS OF THE COMMISSION

On the basis of the information obtained in these preliminary investigations, we determine that there is a reasonable indication that an industry in the United States is materially injured by reason of imports of primary magnesium from Canada that are allegedly subsidized and sold at less than fair value (LTFV) and imports from Norway that are allegedly sold at LTFV.[1]

I. Like product and the domestic industry

In order to determine whether there is "material injury" or "threat of material injury," to a domestic industry, the Commission must first determine

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[1] The legal standard in preliminary antidumping and countervailing duty investigations is set forth in sections 703(a) and 733(a) of the Tariff Act of 1930, 19 U.S.C. §§ 1671b(a) and 1673b(a), which require the Commission to determine whether, based on the best information available at the time of the preliminary determination, there is a reasonable indication of material injury to a domestic industry, or threat thereof, or material retardation of establishment of such an industry, by reason of imports of primary magnesium. Maverick Tube Corp. v. United States, 12 CIT 444, 687 F. Supp. 1569, 1573 (CIT 1988). In preliminary investigations, an affirmative determination is based on a "reasonable indication" of material injury, as opposed to the actual finding of material injury or threat required in a final determination. Compare 19 U.S.C. §§ 1671b(a) and 1673b(a) with 19 U.S.C. §§ 1671d(b)(1) and 1673d(b)(1).

In American Lamb v. United States, 785 F.2d 994 (Fed. Cir. 1986), the Federal Circuit stated that (i) the purpose of preliminary determinations is to avoid the cost and disruption to trade caused by unnecessary investigations, (ii) the "reasonable indication" standard requires more than a finding that there is a possibility of such injury, and (iii) the Commission may weigh the evidence before it to determine whether "(1) the record as a whole contains clear and convincing evidence that there is no material injury or threat of material injury; and (2) no likelihood exists that contrary evidence will arise in a final investigation." Id. at 1001-04. See Shock Absorbers and Parts, Components, and Subassemblies Thereof from Brazil, Inv. No. 731-TA-421 (Preliminary), USITC Pub. 2128 (September 1988); New Steel Rails from Canada, Invs. Nos. 701-TA-297 and 731-TA-422 (Preliminary), USITC Pub. 2135 (November 1988).

the parameters of the "domestic industry." Section 771(4)(A) of the Tariff Act of 1930 defines the relevant domestic industry as the "domestic producers as a whole of a like product, or those producers whose collective output of the like product constitutes a major proportion of the total domestic production of that product."[2] "Like product" is defined as a "product that is like, or in the absence of like, most similar in characteristics and uses with the article subject to investigation."[3]

The Commission's decision regarding the appropriate like product(s) in an investigation is essentially a factual determination, and the Commission has applied the statutory standard of "like" or "most similar in characteristics and uses" on a case-by-case basis. In analyzing like product issues, the Commission generally considers a number of factors relating to characteristics and uses including: (1) physical appearance, (2) interchangeability, (3) channels of distribution, (4) customer perception, (5) common manufacturing facilities and production employees, and, where appropriate, (6) price.[4] No single factor is necessarily dispositive, and the Commission may consider other factors it deems relevant based upon the facts of a particular investigation. Generally the Commission disregards minor variations between the articles subject to an investigation, and requires

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[2] 19 U.S.C. § 1677(4)(A).

[3] 19 U.S.C. § 1677(10).

[4] Torrington Co. v. United States, 767 F. Supp. 744 (CIT 1990) aff'd, 938 F.2d 1278 (Fed. Cir. 1991); Asociacion Colombiana de Exportadores de Flores v. United States, 693 F. Supp. 1165, 1168 n.4, 1180 n.7 (1988) (Asocoflores); 3.5" Microdisks and Media Therefor from Japan, Inv. No. 731-TA-389 (Final), USITC Pub. 2170 at 7-8 (March 1989).

"clear dividing lines among possible like products."[5]

The imported articles subject to these investigations are pure magnesium and magnesium alloys (collectively referred to as primary magnesium). Pure magnesium is defined as unwrought magnesium containing at least 99.8 percent magnesium by weight and magnesium alloys are defined as unwrought magnesium containing less than 99.8 percent magnesium by weight with magnesium being the largest metallic element in the alloy by weight.[6] Magnesium alloys are produced by the addition of alloying metals, typically aluminum and zinc, to pure magnesium. The alloying process occurs after pure magnesium is produced and is designed to harden the magnesium thereby making it more suitable for structural products.

The principal like product issues in these investigations are whether primary magnesium should be divided into two like products, pure magnesium and magnesium alloy, and whether pure magnesium should be further divided into commodity grade and ultra pure grade.[7]

Petitioner, Magnesium Corporation ("MagCorp"), argues that pure magnesium and magnesium alloy should be treated as a single like product

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[5] Certain Telephone Systems and Subassemblies Thereof from Japan, Korea and Taiwan, Invs. Nos. 731-TA-426-428 (Preliminary), USITC Pub. 2156 at 4 n.4 (February 1989)(citing Asocoflores, 692 F. Supp. at 1170 n.8).

[6] See Report at A-3; 56 Fed. Reg. 46443 (Commerce Notice of Initiation).

[7] The Commission has collected data regarding secondary, or recycled, magnesium. Secondary magnesium is not within the scope of the investigation. None of the parties to these investigations has suggested that secondary magnesium be included in the like products under investigation. See Conference Transcript, Sept. 26, 1991 (hereinafter Conf. Tr.) at 38-41; See Norsk Hydro's Post Conference Brief at 9. None of the domestic producers of primary magnesium produce secondary magnesium. Moreover, the bulk of secondary magnesium is consumed by the aluminum can recycling industry. None of the recycled product enters the magnesium market, but instead competes with aluminum. Therefore, we determine that secondary magnesium is not part of the like product(s).

because the same equipment and employees are used to manufacture pure magnesium and magnesium alloy. According to MagCorp, "the alloying process is so simple that some customers, especially those involved in sand casting, purchase pure magnesium and mix the alloy themselves."[8] [9] MagCorp also states that pure and alloy ingots are cast into the same types of molds, packaged, handled, and shipped following the same regulations and requirements. The same manufacturing and distributing personnel are used throughout the process.[10]

Respondents, Norsk Hydro a.s. and Norsk Hydro Canada Inc. (collectively referred to hereafter as "Norsk Hydro") and Timminco Limited ("Timminco"), argue that pure magnesium and magnesium alloy should be treated as separate like products because they have different physical appearances and characteristics.[11] Norsk Hydro states that pure magnesium contains at least 99.8 percent magnesium by weight, while the predominant magnesium alloy (AZ91D)[12] contains approximately 90 percent magnesium, nine percent aluminum and one percent zinc. They note that the production of magnesium alloy differs from the production of pure magnesium because of the additional

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[8] See MagCorp's Post Conference Brief at 3.

[9] Magnesium alloy is produced by melting small amounts of aluminum, zinc and other materials into the pure magnesium.

[10] See MagCorp's Post Conference Brief at 4.

[11] Norsk Hydro also argues that its pure magnesium "T-bar" should be treated as a separate like product from pure magnesium ingot. The only significant difference between "T-bar" and ingot is the shape of the final product. Both are produced through the same process, have the same chemical characteristics, and can be put to the same uses. At most, "T-bar" magnesium may be more easily handled, but this does not alter its fundamental similarity to ingot. Therefore, we determine that "T-bar" magnesium does not constitute a separate like product.

[12] See Report at II-105.

processing required. Thus, magnesium alloy is a downstream product.[13]

Norsk Hydro also argues that pure magnesium and magnesium alloy have fundamentally different uses. Pure magnesium is an alloying agent and a chemical reagent used primarily in aluminum alloying and steel desulfurization. Magnesium alloy is primarily used in die casting of various structural parts such as automobile components, bicycles, power tools, computer chassis, and other products.[14] Norsk Hydro further argues that pure magnesium and magnesium alloy lack interchangeability. The customers who purchase pure magnesium are different from those who purchase magnesium alloy. Further, there is no overlap in the channels of distribution. Customers will use either pure magnesium or magnesium alloy based on their particular end product. Finally, Norsk Hydro argues that there are substantial price differences between pure magnesium and magnesium alloy and that price fluctuations of pure magnesium do not affect the price of magnesium alloy.[15]

Magnesium alloy is produced from pure magnesium by the addition of alloying metals.[16] It follows that much of the manufacturing facilities and production employees are common to the production of both pure magnesium and magnesium alloy. Nonetheless, additional processing equipment and personnel are required to produce magnesium alloy, since magnesium alloy is a downstream product.[17] The physical distinctions between pure magnesium and magnesium

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[13] See Norsk Hydro's Post Conference Brief at 6.

[14] See Norsk Hydro's Post Conference Brief at 6.

[15] See Norsk Hydro's Post Conference Brief at 8.

[16] See Report at 7, II-32.

[17] Northwest Alloy only produces pure magnesium and does not produce magnesium alloy. See Report at II-28.

alloy are slight, as they both are sold as ingots of various sizes and shapes and all contain approximately 90 percent magnesium.[18] The essential characteristic - the combination of low weight and high strength - is common to both pure magnesium and magnesium alloy.

On the other hand, the evidence of a lack of interchangeability between pure magnesium and magnesium alloy and the distinct market segmentation tends to favor two distinct like products. Customers that purchase pure magnesium do not use magnesium alloy as a substitute and vice versa. Pure magnesium is channeled to users who employ it in desulfurization of iron and steel, nonferrous metals production, cathodic protection, and other consumptive processes. Magnesium alloy on the other hand is channeled to die, sand, and mold casters that take advantage of its structural properties to produce structural products.[19] Thus, the channels of distribution for pure magnesium and magnesium alloy are not the same. Prices of pure magnesium and magnesium alloy, although historically related, currently fluctuate independently of one another.[20]

The analysis for distinguishing pure magnesium and the downstream product magnesium alloy can be analogized to distinguishing between semifinished and finished products. In prior investigations, the Commission has determined that when considering whether "semifinished" products are "like" the finished product, it generally examines: (1) the necessity for, and the costs of, further processing, (2) the degree of interchangeability of articles at the different stages of production, (3) whether the article at an

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[18] See Report at II-13 and II-7.

[19] See Report at II-5, II-6, and II-19.

[20] See Report, Table 38; Table 39; Table 40; and Table 41.

earlier stage of production is dedicated to use in the finished article, (4) whether there are significant independent uses or markets for the finished and unfinished articles, and (5) whether the article at an earlier stage of production embodies or imparts to the finished article an essential characteristic of function.[21]

Applying these criteria it appears that further processing of pure magnesium into alloy is minimal compared to the cost of processing pure magnesium from raw materials, and pure magnesium and magnesium alloy share the same essential characteristic -- a high strength to weight ratio. Also, to a large extent, magnesium imparts an essential characteristic to magnesium alloy. On the other hand, however, there is little, if any, interchangeability between pure and alloy magnesium. Further, there are wholly independent markets for pure and alloy magnesium; pure magnesium is not dedicated for use as alloy.

Virtually identical processing facilities and personnel are used to manufacture pure magnesium and magnesium alloy. Only slight additions of alloying metals transform the pure magnesium to magnesium alloy. These considerations suggest that a single like product is appropriate. On the other hand, the distinct market segmentation and the lack of overlap between users of pure magnesium and magnesium alloy suggest that there are two like products. Furthermore, purchasers reported that they did not substitute pure magnesium for magnesium alloy and vice versa.[22] Prices for the two products

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[21] Certain Telephone Assemblies and Subassemblies Thereof from Japan and Taiwan, Invs. Nos. 731-TA-426 and 428 (Final), USITC Pub. 2237 (Nov. 1989).

[22] See Report at II-19.

have not exhibited any specific relationships in recent periods.[23] The Commission has weighed all of the factors traditionally relied upon and, on balance, has determined that the like product for purposes of these preliminary investigations is primary magnesium consisting of both pure magnesium and magnesium alloy, and that the domestic industry is comprised of the domestic producers of primary magnesium. This was a close determination, and the question of the appropriate like product warrants further examination in any final investigation.

B. Commodity grade v. ultra pure magnesium

The Commission also has considered Timminco's argument that pure magnesium should be sub-divided into separate like products consisting of commodity grade and ultra pure magnesium.[24] Timminco produces only ultra pure magnesium and states that its magnesium is no less than 99.95 percent purity and is used in specialized applications such as metal reduction for exotic applications as well as for some of the oncoming pharmaceuticals that are very complex.[25] Timminco argues that high purity is important because it dictates the amount of trace impurities present in the ultra pure magnesium. The amount of trace impurities is the particular physical characteristic that distinguishes end users.[26] A technique known as metal thermic process allows Timminco to produce the ultra pure magnesium.[27] Timminco states that, in

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[23] See Report at II-101.

[24] Norsk Hydro agrees with Timminco that commodity grade magnesium and ultra pure magnesium should be a separate like product. See Conf. Tr. at 147.

[25] See Timminco's Post Conference Brief at 15.

[26] See Timminco's Post Conference Brief at 15.

[27] See Timminco's Post Conference Brief at 6.

other investigations, the Commission has found such distinctions to warrant a finding of separate like products.[28]

Both Dow and MagCorp produce ultra pure magnesium.[29] As with alloy, pure magnesium is first produced then it is processed further to remove impurities to produce the ultra pure magnesium. MagCorp argues that ultra pure magnesium has characteristics identical to commodity grade magnesium with the single exception that it contains between 0.15 percent to 0.18 percent more magnesium. MagCorp states that predominantly the same manufacturing process, production and sales personnel, and channels of distribution are utilized in the manufacturing and distribution of high purity magnesium. MagCorp also notes that ultra pure magnesium prices follow commodity grade magnesium prices. Finally, MagCorp argues that minor variations in products should not result in separate like products.[30]

The physical appearance of ultra pure and commodity grade magnesium is even more similar than the appearance of pure magnesium compared to magnesium alloy, since ultra pure magnesium only contains between 0.15 percent and 0.18 percent more magnesium. Ultra pure magnesium is produced using primarily the

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[28] See Timminco's Post Conference Brief at 17.

[29] The government of Canada has argued that MagCorp does not have standing to file this case, citing the CIT's opinion in Suramerica de Aleaciones Laminadas, C.A. v. United States, 746 F. Supp. 139, 153 (CIT 1990) appeal docketed, No. 91-1015 (Fed. Cir., Oct. 5 1990). Government of Canada's Post Conference Brief at 2-8. Their position is based on Dow's professed "neutrality" in these investigations. Conf. Tr. at 35-36. Since the Commission is seeking to reverse Suramerica before the Federal Circuit and has not followed Suramerica in other investigations, we see no reason to change our consistent practice of deferring to the Department of Commerce on standing in these investigations. See e.g. Gray Portland Cement and Cement Clinker from Japan, Inv. No. 731-TA-461 (Preliminary), USITC Pub. 2376 at 5-13 (April 1991). (Acting Chairman Anne E. Brunsdale does not join this discussion in this footnote. For her views on this issue, see her Additional Views, infra.)

[30] See MagCorp's Post Conference Brief at 5.

same manufacturing facilities and production employees as commodity grade magnesium.[31] Additional purifying processes to remove unwanted impurities produce the ultra pure magnesium from commodity grade magnesium. At both the MagCorp and Dow facilities, commodity grade magnesium is processed further to produce the ultra pure magnesium.[32] The price of ultra pure magnesium is directly related to the price of commodity magnesium. If the price of commodity grade magnesium changes, the price of ultra pure magnesium is changed accordingly. Ultra pure magnesium can be substituted for commodity grade magnesium; however, commodity grade magnesium is not well suited for ultra pure magnesium applications.[33] In practical terms, substitution is unlikely because ultra pure magnesium demands a higher selling price. Consequently, there is some evidence that some customers perceive differences in ultra pure and commodity grade magnesium.

In light of the foregoing, we find in these preliminary investigations that ultra pure magnesium is not a separate like product. Commodity grade magnesium and ultra pure magnesium are produced by the same essential processes, using primarily the same machinery and employees. The difference is that ultra pure magnesium goes through an additional step of processing to extract impurities. The methods of transporting all magnesium is the same, and the regulatory regimes are the same.

Moreover, in Silicon Metal from the People's Republic of China, Inv. No. 731-TA-472 (Final), USITC Pub. 2385 (June 1991), the Commission rejected a

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[31] See MagCorp's Post Conference Brief at 5.

[32] See Conf. Tr. at 55; Report at II-102 nn. 59 & 61.

[33] Both petitioner MagCorp and respondent Timminco agree that ultra pure magnesium is used for specialized applications. See MagCorp's Post Conference Brief at 5 and Conf. Tr. at 25; Timminco's Post Conference Brief at 15.

proposed like product distinction between chemical and metallurgical grade silicon metal based upon the percentage of silicon content. In doing so the Commission relied upon the similarities in the production processes, the common production facilities and employees, the fact that both products were sold directly to end users, the minor differences in prices, and the ability to substitute the higher grade product for the lower grade one. The Commission also noted that it normally does not consider different grades to be different like products. All of these factors are present in these investigations with respect to commodity grade magnesium and ultra pure magnesium.[34] [35]

II. Condition of the domestic industry

In determining the condition of the domestic industry, the Commission considers, among other factors, domestic consumption, domestic production, capacity, capacity utilization, shipments, inventories, employment, market share, domestic prices, profitability, the ability to raise capital, and

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[34] This investigation presents a different set of facts than several other chemical product cases. For example, in Nepheline Syenite from Canada, Inv. No. 731-TA-525, USITC Pub. 2415 (August 1991) (Preliminary), the Commission found that the like product consisted of glass grade feldspar and asplite, but did not include ceramic grade feldspar. This determination was based upon the lack of common production facilities, the 50 percent difference in price attributed to further processing, the accepted definition of grades establishing clear dividing lines, and the chemical differences between glass grade and ceramic grade feldspar, notwithstanding some interchangeability. In Certain Sodium Sulfur Chemical Compounds From the Federal Republic of Germany, the People's Republic of China, Turkey and the United Kingdom, Invs. Nos. 701-TA-303 and 731-TA-465-468, USITC Pub. 2307 (August 1990) (Preliminary), the Commission found two like products based primarily upon the use of separate machinery, equipment and employees to produce the products, differences in marketing and pricing, and differing methods of distribution and regulatory requirements.

[35] For additional discussion of her approach to like-product determination, see Additional Views of Acting Chairman Brunsdale, infra.

investment.[36] In addition, the Commission evaluates all of these factors in the "context of the business cycle and conditions of competition that are distinctive to the affected industry."[37]

During the period of these preliminary investigations, apparent domestic consumption of primary magnesium, by quantity, has remained fairly steady. Apparent consumption increased from 153,852 metric tons in 1988 to 156,086 metric tons in 1989, and then increased again to 164,421 metric tons in 1990. However, in interim 1991, apparent consumption declined slightly to 50,175 metric tons, compared with 52,965 metric tons in interim 1990.[38]

Aggregate domestic capacity to produce primary magnesium increased by 7.0 percent from 1988 to 1989, decreased 0.2 percent from 1989 to 1990, and increased 0.1 percent between the interim periods January-June 1990 and January-June 1991.[39] Domestic production, however, irregularly decreased. Production increased 7.3 percent from 1988 to 1989 and decreased 6.8 percent from 1989 to 1990. Domestic production also decreased 11.4 percent between the interim periods of January-June 1990 and January-June 1991.[40]

U.S. domestic shipments of primary magnesium also reflected similar irregular but more dramatic declines showing a 1.8 percent increase from 1988 to 1989 and a 9.6 percent decrease from 1989 to 1990. Shipments also decreased 11.9 percent between the interim periods of January-June 1990 and

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[36] 19 U.S.C. § 1677(7)(C)(iii).

[37] 19 U.S.C. § 1677(7)(C)(iii).

[38] See Report at II-16 and Table 3.

[39] See Report at II-31-33 and Table 10.

[40] See Report at II-31-33 and Table 10.

January-June 1991.[41] Domestic inventory increased 13.5 percent from 1988 to 1989 and 27.9 percent from 1989 to 1990. Inventory also increased 0.7 percent between interim periods 1990 and 1991.[42]

Capacity utilization increased slightly from 94.0 percent in 1988 to 94.3 percent in 1989, then decreased to 88.0 percent in 1990. Capacity utilization fell from 91.5 in interim 1990 to a low of 80.9 percent in interim 1991.[43] While the utilization rates may be high compared to other industries, the nature of the product is highly capital intensive and requires sustained high utilization rates.[44]

Overall employment in the domestic industry increased 4.2 percent from 1988 to 1989, decreased 1.2 percent from 1989 to 1990, and decreased 4.7 percent between the interim periods. Hours worked increased 5.6 percent from 1988 to 1989 and decreased 1.4 percent from 1989 to 1990. Hours worked decreased 8.8 percent between the interim periods. Total compensation increased 14.0 percent from 1988 to 1989 and increased 5.1 percent from 1989 to 1990. Total compensation decreased 4.0 percent between the interim periods.[45]

The available data indicate that the volume and market share of subject imports almost tripled between 1989 and 1990 and that domestic market share declined over ten percent.[46]

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[41] See Report at II-16 and Table 3.

[42] See Report at II-40 and Table 12.

[43] See Report, Table 10.

[44] See Conf. Tr. at 31.

[45] See Report, Table 13 and II-39.

[46] See Report, Table 35 and Table 35 cont.

Net sales declined irregularly throughout the period, and operating income as a percentage of net sales is irregular and decreasing. Operating income declined further in interim period 1991 as compared to interim 1990.[47] Capital expenditures by the domestic industry increased irregularly during the period of investigation.[48]

Based upon the data available in these investigations, we find a reasonable indication that the domestic industry is materially injured.[49] The financial condition of the domestic industry has deteriorated during the period of investigation. Domestic production, capacity utilization, and shipments have declined while inventories have dramatically increased.

III. Cumulation

In determining whether there is material injury by reason of the LTFV imports, the Commission is required to cumulatively assess the volume and effect of imports from two or more countries subject to investigation if such imports compete with one another and with the domestic like product in the United States market.[50]

A. Competition

The only significant cumulation issue in these investigations is whether

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[47] See Report, Table 17.

[48] See Report, Table 30.

[49] Acting Chairman Brunsdale does not reach a separate legal conclusion concerning the presence or absence of material injury based on this information. While she does not believe an independent determination is either required by the statute or helpful, she finds the discussion of the condition of the domestic industry to be helpful in determining whether any injury resulting from the dumped imports is material.

[50] 19 U.S.C. § 1677(7)(C)(iv); Chaparral Steel Co. v. United States, 901 F.2d 1097, 1105 (Fed. Cir. 1990).

the imports from Canada and Norway compete with one another and with the domestic like product. In assessing competition, the Commission has generally considered four factors, including:

> (1) the degree of fungibility between the imports from different countries and between imports and the domestic like product, including consideration of specific customer requirements and other quality related questions;
>
> (2) the presence of sales or offers to sell imports from different countries and the domestic like product in the same geographical markets;
>
> (3) the existence of common or similar channels of distribution for imports from different countries and the domestic like product; and
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> (4) whether the imports are simultaneously present in the market.[51]

While no single factor is determinative, and the list of factors is not exclusive, these factors are intended to provide the Commission with a framework for determining whether the imports compete with each other and with the domestic like product.[52] Furthermore, only a "reasonable overlap" of competition is required.[53]

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

[52] See Wieland Werke, AG v. United States, 718 F. Supp. 50 (CIT 1989); Granges Metallverken AB v. United States, 716 F. Supp. 17 (CIT 1989); Florex v. United States, 705 F. Supp. 582 (CIT 1989).

[53] See Wieland Werke, AG v. United States, 718 F. Supp. 50, 52 (CIT 1989) ("Completely overlapping markets are not required."); Granges Metallverken AB v. United States, 716 F. Supp. 17, 21, 22 (CIT 1989) ("The Commission need not track each sale of individual sub-products and their counterparts to show that all imports compete with all other imports and all domestic like products . . . the Commission need only find evidence of reasonable overlap in

(continued...)

All pure magnesium and magnesium alloy must meet the same standards set by the Association for Testing and Materials (ASTM). For instance, a whole family of magnesium alloys are classified by the ASTM.[54] Moreover, customers purchase magnesium products in various forms of ingots based on weight.

Imports of pure magnesium and magnesium alloy from Canada and Norway are sold in all parts of the country.[55] They have been sold in substantial quantities throughout the period of investigation. Furthermore, they are marketed in a similar fashion as the domestic product.[56] Pure magnesium and magnesium alloy are inherently fungible products.[57] Given the essentially fungible nature of imports of pure magnesium and magnesium alloy from Canada and Norway with that of the domestic product, the competition between subject imports and the domestic products throughout the country and in all relevant time periods, and the similarity in methods of distribution, we determine that cumulation of imports from Canada and Norway is warranted for the purposes of these preliminary investigations.

B. Negligible imports

Norsk Hydro argues that imports from Norway are negligible and should

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[53](...continued)
competition"); Florex v. United States, 705 F. Supp. 582, 592 (CIT 1989) ("[c]ompletely overlapping markets is [sic] not required.").

[54] See Report at II-5 n. 8.

[55] See Report at II-29.

[56] The sole Norwegian producer is affiliated with the dominant Canadian producer. Counsel for these producers did not provide any evidence that imports from the two countries are intrinsically non-competitive. Instead, it was asserted that there was no competition because the source of supply was a corporate decision thus buttressing their essentially fungible character. See Conf. Tr. at 132. See also Report at II-117 nn. 84-86.

[57] See Report at II-117.

not be cumulated with Canada.[58] In these investigations, however, import penetration for most of the period of investigation was in excess of four percent, although that market share declined recently to just above one percent.[59] These facts indicate, particularly in light of the fungible nature of the product and the relationship between the Norwegian and Canadian producers, that imports from Norway should not be considered negligible for these preliminary investigations.[60] The Commission will consider this issue further in any final investigations.[61]

IV. Causation

In addition to finding material injury to a domestic industry, the Commission must also determine whether such injury is "by reason of" the allegedly less than fair value or subsidized imports.[62] In making this determination, the Commission is required to consider, inter alia, the volume of the imports subject to investigation, the effect of such imports on domestic prices, and the impact of such imports on the domestic industry.[63] Evaluation of these factors involves a consideration of: (1) whether the

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[58] See Norsk Hydro's Post Conference Brief at 14.

[59] See Report, Table 24.

[60] See Electrolytic Manganese Dioxide from Greece and Japan, Invs. Nos. 731-TA-406 and 408 (Final), USITC Pub. 2177 (April 1989)(ownership of only Greek producer by Japanese producer together with common U.S. importer indicated common channel of distribution for the products of both countries, imports from the two countries compete in the supply chain at the discretion of the parent importer and producer).

[61] See Coated Groundwood Paper from Austria, Belgium, Finland, France, Germany, Italy, the Netherlands, Sweden, and the United Kingdom, Invs. Nos. 731-TA-486-494 (Preliminary), USITC Pub. 2359 at 17-24 (Feb. 1991).

[62] 19 U.S.C. § 1673b(a).

[63] 19 U.S.C. § 1677(7)(B).

volume of imports or increase in the volume of imports is significant, (2) whether there has been significant price underselling by the imported products, and (3) whether imports have otherwise depressed prices to a significant degree, or have prevented price increases.[64] In addition, the Commission must evaluate the impact of the imports in light of relevant economic factors bearing on the industry, such as actual and potential changes in profits, productivity, capacity utilization, and investment.[65]

The Commission may not weigh the various causes of material injury,[66] nor must it determine that LTFV or subsidized imports are the principal, a substantial, or a significant cause of material injury.[67] However, the Commission may consider any information demonstrating possible alternative causes of injury to the domestic industry.[68]

The volume of cumulated imports has increased dramatically from 7672 metric tons in 1988 to 8729 metric tons in 1989 and then to 23,514 metric tons in 1990. Cumulated imports declined from 8526 metric tons in interim 1990 to

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[64] 19 U.S.C. § 1677(7)(C)(i-ii).

[65] 19 U.S.C. § 1677(7)(C)(iii).

[66] S. Rep. No. 249, 96th Cong., 1st Sess. 74 (1979); La Metalli Industriale, S.p.A. v. United States, 712 F. Supp. 969, 971 (CIT 1989); Citrosuco Paulista v. United States, 704 F. Supp. 1075, 1101 (CIT 1988); Hercules, Inc. v. United States, 673 F. Supp. 454, 481 (CIT 1987); British Steel Corp. v. United States, 593 F. Supp. 405, 413 (CIT 1984).

[67] S. Rep. No. 249, 96th Cong., 1st Sess. at 74.

[68] S. Rep. No. 249, 96th Cong., 1st Sess. 75 (1979). Such alternative causes may include "the volume and prices of imports sold at fair value, contraction in demand or changes in patterns of consumption, trade, restrictive practices of competition between the foreign and domestic producers, developments in technology, and the export performance and productivity of the domestic industry." Id. at 74.

7120 metric tons in interim 1991.[69] The value of cumulated imports followed a similar trend, decreasing slightly from $26.9 million in 1988 to $26.7 million in 1989 and then expanding to $70.2 million in 1990. Cumulated imports also increased from $22.6 million in interim 1990 to $27.2 million in interim 1991.[70]

Market penetration of cumulated imports, by quantity, also increased dramatically during the period of investigation decreasing slightly from 7.0 percent in 1988 to 6.6 percent in 1989 and then climbing to 19.1 percent in 1990. Market penetration increased to 18.6 percent in interim 1991, compared with 12.2 percent in interim 1990.[71] Market penetration by value exhibited a similar trend.[72] Coincident with this surge in subject imports, domestic prices for primary magnesium steadily declined during the period of 1989 and 1990.[73]

The weighted-average prices for U.S.-produced pure magnesium products for which pricing data were obtained decreased irregularly during the period of investigation; prices of imports from Canada and Norway followed similar trends.[74] The weighted-average prices for U.S.-produced magnesium alloy products for which pricing data were obtained remained steady irregularly during the period of investigation; prices of imports from Canada and Norway

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[69] See Report, Table 33 cont.

[70] See Report, Table 35.

[71] See Report, Table 35 cont.

[72] See Report, Table 35 cont.

[73] See Report, Table 38; Table 39; Table 40; and Table 41.

[74] See Report, Table 38; and Table 40.

exhibited similar trends.[75] There is some evidence of underselling by imports from Canada and Norway.[76] For example, in the contract market for pure magnesium, the Canadian product undersold the domestic product by between 1.3 and 5.6 percent in 6 of 12 quarters.[77] [78]

Magnesium, with few substitutes where it is required, likely has a low price elasticity of demand. One should therefore expect that the increase in imports would cause a commensurate decline in prices in the domestic market. However, the contractual market causes some price rigidity. Nonetheless, data for 1991 do show significant price declines, following a rapid increase in imports in 1990. Furthermore, the U.S. plants producing magnesium are dedicated to magnesium production, with little flexibility to produce other products. Hence, price declines will cause direct losses in profits, as the data show for 1991.

Given the essentially fungible nature of primary magnesium, the rapid and significant increase in cumulated imports, and the declines in domestic market shares, we determine that there is a reasonable indication that allegedly subsidized and LTFV imports from Canada and Norway are a cause of material injury to the domestic industry.[79]

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[75] See Report, Table 39; and Table 41.

[76] See Report, Tables 41 and 42.

[77] See Report at II-112.

[78] The data for price comparisons are mixed and irregular. Moreover, each supplier at different times has been the price leader during the period of the investigation. See Report at II-118.

[79] For a discussion of the particular factors Acting Chairman Brunsdale finds most important in her determination, see her Additional Views, infra.

ADDITIONAL VIEWS OF ACTING CHAIRMAN ANNE E. BRUNSDALE

Magnesium from Canada and Norway
Invs. Nos. 701-TA-309 and 731-TA-528 and 529 (Preliminary)

I join the Commission's determination that there is a reasonable indication that an industry in the United States is materially injured by reason of imports of primary magnesium (pure magnesium and magnesium alloy) from Canada that are allegedly subsidized and dumped and imports from Norway that are allegedly dumped. I further concur in the determination that there is a single like product, including commodity-grade and ultra-pure magnesium as well as magnesium alloy, and that we are required to cumulate imports from Canada and Norway for purposes of our determinations. I accept as accurate the description of the domestic industry's condition contained in the Commission opinion. However, as is well known, I do not use this information to reach a separate legal conclusion concerning the presence or absence of material injury.

While I concur in all of the conclusions reached by my colleagues, my approach to a couple of these issues differs from theirs. I use these additional views to set forth my analysis on these subjects -- like product and causation.

Standing of Petitioner

Before turning to these issues, I would like to briefly consider the issue of petitioner's standing to bring this case. According

to the statute, a petition resulting in the initiation of an antidumping or countervailing duty proceeding must be filed by an "interested party" and be filed "on behalf of an industry."[1] As a producer of primary magnesium, there is no question that petitioner is an interested party as defined by the statute.[2]

However, there is a substantial question as to whether the petition was filed "on behalf of" the domestic industry producing primary magnesium. There are three producers of primary magnesium in the United States -- petitioner Magcorp, Dow Chemical, and Northwest Alloys. Dow Chemical and Northwest Alloys have declined to support the petition.[3] Dow Chemical alone accounts for about 56 percent of U.S. magnesium production.[4] The remaining two firms -- Magcorp and Northwest Alloys are of approximately the same size.[5] It is not clear that a petition lacking the support of producers of approximately

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[1] 19 U.S.C. 1671a(b)(1) and 1673a(b)(1).

[2] 19 U.S.C. 1677(9)(C) defines an interested party to include "a manufacturer, producer, or wholesaler in the United States of a like product."

[3] Conference Transcript at 35-36 (Testimony of Lee R. Brown, Vice President, MagCorp). This is [***] by the information obtained by the Commission during the period of investigation. (Report at II-27, Table 7)

[4] Conference Transcript at 36 (Testimony of Lee R. Brown).

[5] Petition at 1.

three-quarters of the domestic industry should be considered to have been filed "on behalf of" the domestic industry.[6]

At this point, I am not willing to rely on the lack of support to terminate this proceeding. The appropriateness of the Commission's considering such issues remains unresolved. While the Court of International Trade has held that the Commission is required to determine whether a petitioner has standing to bring a Title VII action, this issue is currently on appeal before the Court of Appeals for the Federal Circuit.[7] I hope the appeals court will issue its opinion and resolve this matter before any final investigation in this matter. If the court finds that the Commission is empowered to make standing decisions or in the absence of any direction from the court, I may revisit this issue in any final investigation. In the interim, I would urge the Department of Commerce to carefully consider the standing of petitioner.

Like Product

In several recent opinions, I have focused my discussion of like product around the key question of whether dumping or subsidies would induce significant substitution among potential like

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[6] Magcorp's market share during the period of investigation has ranged between [***] and [***] percent. (Report at II-27)

[7] Suramerica de Aleaciones Laminadas, C.A. v. United States, 746 F. Supp. 139 (CIT 1990), appealed as Suramerica de Aleaciones Laminadas, C.A. v. United States, United States Court of Appeals for the Federal Circuit, Appeal Nos. 91-1015, -1050, -1055.

products by either producers or consumers.[8] This focus provides a relatively objective and predictable way of determining what domestic products should be considered in determining whether the dumped or subsidized imports are materially injuring or threatening to materially injure a domestic industry. If producers will quickly shift their production away from a product whose price falls because of dumping or subsidies and begin producing an alternative product, or if consumers will quit purchasing an alternative and start buying the product whose price is depressed or suppressed, then these alternative products should be treated as parts of the like product.

Consideration of the ability of producers to substitute in the production of potential like products allows me to resolve the two like-product questions in this investigation. First, should primary magnesium be divided into two like products, pure magnesium and magnesium alloy? Second, should pure magnesium be divided into two like products, commodity grade and ultra-pure grade?

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[8] This approach was first set out in Polyethylene Terephthalate Film, Sheet, and Strip from Japan and the Republic of Korea, Invs. Nos. 731-TA-458 and 459 (Final), USITC Pub. 2383 (May 1991) at 31-43 (Dissenting Views of Acting Chairman Anne E. Brunsdale). I also employed this approach in Steel Wire Rope from Canada, Inv. No. 731-TA-524 (Preliminary), USITC Pub. 2409 (August 1991) at 26-28 (Additional Views of Acting Chairman Anne E. Brunsdale) and in Bulk Ibuprofen from India, Invs. Nos. 701-TA-308 and 731-TA-526 (Preliminary), USITC Pub. 2428 (September 1991) at 22-24 (Additional Views of Acting Chairman Anne E. Brunsdale).

Looking first at the question of whether pure magnesium and magnesium alloy should be separate like products, I note that the production of magnesium alloy involves the melting of small amounts of aluminum, zinc, or other materials into pure magnesium. This reduces the proportion of magnesium in the product to approximately 90 percent from 99.8 percent or more.[9] Two of the three domestic producers of pure magnesium also produce magnesium alloys,[10] and do so on the same production line.[11] Therefore, if dumping or subsidies were to depress the price of pure magnesium, but not magnesium alloy, the price and volume effects would easily spill over into the alloy market as producers reduced sales of pure magnesium and used more of their output to produce magnesium alloy. Similarly, if the price of magnesium alloy was to fall, more of the producers' magnesium would be sold as pure magnesium and less magnesium alloy would be produced. Since both markets would be significantly affected even if only one product was being dumped or subsidized, there is no reason to treat the two products as separate. This is true even though consumers generally do not see magnesium alloy as a substitute for pure magnesium.[12]

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[9] Petitioner's Post-Conference Brief at 3.

[10] Report at II-41.

[11] Id. at II-7.

[12] Pure magnesium may be a substitute for magnesium alloy for some consumers of the latter product. Petitioner asserts that

(continued...)

Similar considerations demonstrate that commodity-grade and ultra-pure magnesium are not separate like products. Two of the three domestic magnesium producers -- Dow Chemical and Magcorp -- produce both commodity-grade and ultra-pure magnesium.[13] Furthermore, as with magnesium alloy, the production of ultra-pure magnesium generally involves an additional refining step.[14] Thus, once again, depression in the price of one but not both of the potential like products will lead producers to shift production quickly to the other, with the result that both products are part of the same like product.

Cumbersome Nature of the Commission's Traditional Test. While the analysis set forth above is clear and straight forward, the same cannot be said of the Commission's traditional test which involves an examination of six, seven, or eight different factors, depending on the author of the particular opinion. In the current case, we are provided with a discussion of six factors -- "(1) physical appearance, (2) interchangeability, (3) channels of distribution, (4) customer perception, (5) common

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[12](...continued)
some consumers of magnesium alloy purchase pure magnesium and do the alloying process themselves. (Petitioner's Post-Conference Brief at 3)

[13] Report at II-5, n. 10.

[14] Conference Transcript at 55 (Testimony of Mr. Howard Kaplan, Vice President, Magcorp).

manufacturing facilities and production employees, and, where appropriate, (6) price".

While each of these factors can be relevant to determining consumer or producer substitutability, one cannot know how to answer certain of the questions without knowing that substitution possibilities are the ultimate issue of interest. For example, in the current case, the issue of "physical appearance" gives rise to the following statement: "The physical distinctions between pure magnesium and magnesium alloy are slight, as they both are sold as ingots of various sizes and shapes and all contain approximately 90 percent magnesium."[15] While this statement is true and on its face appears to support a finding that pure magnesium and magnesium alloy are parts of the same like product, placed in the framework of substitution possibilities, it provides no support for a finding of a single like product. Given the uses to which magnesium is put, an ingot that is 90 percent pure is very different from one with a purity of 99.8 percent or more.[16]

Another result of considering the six factors without focusing on substitutability is that one is left without a clear answer when some of the factors point in one direction and others in the other. In the current case, factor (5) -- common manufacturing facilities and production employees -- and factor

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[15] Commission opinion at 8 (emphasis added).

[16] Report at II-84.

(1) -- physical appearance -- appear to point toward including pure and alloy magnesium in the same like product definition, while other factors, such as factor (2) -- interchangeability -- and factor (4) -- customer perception -- appear to point toward two like products. Faced with this situation, the majority concludes that "on balance" they find a single like product. But how the balance is weighed is nowhere revealed. The majority notes only that "This was a close determination, and the question of the appropriate like product warrants further examination in any final investigation." However, viewed from the perspective of substitutability, the answer is not close at all. There is substantial substitutability on the production side and therefore there is only one like product.

Causation

The final issue I wish to discuss is causation -- *i.e.*, is there a reasonable indication that the domestic magnesium industry is materially injured by reason of the allegedly dumped and subsidized imports. Those who follow ITC practice are likely to be well aware of the differences between my approach to this question and that of my colleagues.[17]

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[17] I refer the reader unfamiliar with my approach to Polyethylene Terephthalate Film, Sheet, and Strip from Japan and the Republic of Korea at 45-66 (Dissenting Views of Acting Chairman Anne E. Brunsdale).

I base my affirmative determinations in these preliminary investigations primarily on three points. First, there appears to be a high degree of substitutability between domestic and imported magnesium: All pure magnesium is produced to the same standards set by the American Society of Testing and Materials (ASTM).[18] Second, the market share of the subject imports of primary magnesium rose to 19.1 percent on the basis of quantity and 18.9 percent on the basis of value in 1990, and fell slightly in the first half of 1991 to 18.6 percent based on quantity and 18.5 percent based on value.[19] Third, the dumping margins are alleged to be between 27.18 and 32.74 percent for Canada and to equal 10.92 percent for Norway.[20] There is no information on the level of the subsidy margins.[21] When imports and the domestic product are as substitutable as these appear to be, even moderate dumping margins and market shares show a reasonable indication that a domestic industry is being material injured.

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[18] Report at II-5, n. 8. See also Conference Transcript at 139-140.

[19] Report at II-88, Table 35.

[20] Report at II-18, Table 2. While these dumping margins are little more than petitioners' claims, they are the best information currently available concerning the level of the dumping.

[21] Id. The absence of information on the size of the subsidy margins alone would probably be sufficient to require an affirmative determination under the standard of American Lamb.

Evidence of Underselling. In addition to considering the quantity, volume, and market share of the subject imports, the Commission opinion notes that

> There is some evidence of underselling by imports from Canada and Norway. For example, in the contract market for pure magnesium, the Canadian product undersold the domestic product by between 1.3 and 5.6 percent in 6 of 12 quarters.[22]

I feel compelled to note that this reference does not present the whole picture concerning comparisons of the prices of domestic magnesium and that of the subject imports. First, looking at contract sales of pure magnesium from Canada -- the price series cited in the Commission opinion -- I note that in the six remaining quarters the price of the Canadian imports exceeded the price of the domestic product by between 0.9 and 9.6 percent. Averaging the price differences over the 12 quarters, the price of the Canadian imports exceeded that of the domestic product by an average of 0.5 percent. Looking at all of the 59 price comparisons, involving both Canada and Norway, offered in the staff report, the imported product undersold the domestic product in 23 cases. However, the domestic product had a lower price than the imports in 27 cases. (In 9 other cases, the domestic and import prices were equal.) On average for all price comparisons, the domestic price was 1.3 percent below that of the imports.[23]

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[22] Commission Opinion at 21-22.

[23] Based on data in the Report at II-94, Table 42.

Interestingly, 46 of the 59 price comparisons involve sales made under contract[24] -- which is not surprising given the prevalence of contracts in this industry.[25] However, I wonder about the usefulness of price comparisons based on contract sales. The prices of such transactions may reflect market conditions at the different times in the past when contracts were negotiated more than they reflect current market conditions.[26] Thus, such data may tell us even less about underselling than do data based on spot transactions.

Conclusion

While my colleagues and I agree on all the relevant determinations in this case, our views on key factors differs. A like-product analysis that focuses on substitutability provides a clearer and more definitive test than does the six, seven, or eight part test traditionally employed by the Commission. And, an economic approach to causation avoids the pitfalls that await those using more traditional approaches.

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[24] Id.

[25] Id. at II-85 - II-86.

[26] I am aware that the contracts in this industry may allow periodic renegotiation of the prices. (Id. at II-86) While this reduces the problem discussed above, it does not eliminate it.

Information Obtained in the Investigations

INTRODUCTION

On September 5, 1991, a petition was filed with the U.S. International Trade Commission (Commission) and the U.S. Department of Commerce (Commerce) by Magnesium Corp. of America (Magcorp), Salt Lake City, UT. The petition alleges that an industry in the United States is materially injured and threatened with material injury by reason of imports from Canada and Norway of magnesium[1] that are alleged to be sold in the United States at less than fair value (LTFV) and subsidized by the Government of Canada.

Accordingly, effective September 5, 1991, the Commission instituted preliminary countervailing duty investigation No. 701-TA-309 (Preliminary) under section 703(a) of the Tariff Act of 1930[2] (the act) to determine whether there is a reasonable indication that an industry in the United States is materially injured, or is threatened with material injury, or the establishment of an industry in the United States is materially retarded, by reason of imports of magnesium from Canada alleged to be subsidized by the Government of Canada.[3]

Effective September 5, 1991, the Commission also instituted preliminary antidumping investigations Nos. 731-TA-528 and 529 (Preliminary) under section 733(a) of the act[4] to determine whether there is a reasonable indication that an industry in the United States is materially injured, or is threatened with material injury, or the establishment of an industry in the United States is materially retarded, by reason of imports from Canada and Norway of magnesium alleged to be sold in the United States at LTFV.

Notice of the institution of these investigations was posted in the Office of the Secretary, U.S. International Trade Commission, Washington, DC, and published in the

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[1] The products covered by these investigations are pure and alloy magnesium. Pure unwrought magnesium contains at least 99.8 percent magnesium by weight and is sold in various slab and ingot forms and sizes. Magnesium alloys contain less than 99.8 percent magnesium by weight, with magnesium being the largest metallic element in the alloy by weight. Pure and alloy magnesium are currently provided for in subheadings 8104.11.00 and 8104.19.00, respectively, of the Harmonized Tariff Schedule of the United States (HTS).

[2] 19 U.S.C. § 1671b(a).

[3] The Commission also instituted preliminary countervailing duty investigation No. 701-TA-310 regarding imports from Norway; however, Commerce dismissed the petition involving Norway and the Commission accordingly terminated its investigation.

[4] 19 U.S.C. § 1673b(a).

Federal Register of September 12, 1991.[5] A copy of the Commission's *Federal Register* notice is presented in appendix A.

The Commission held a public conference in Washington, DC, on Thursday, September 26, 1991, at which time all interested parties were allowed to present information and data for consideration by the Commission. A list of the participants in the conference is presented in appendix B.

The Commission voted on these investigations on Wednesday, October 16, 1991. The statute directs the Commission to transmit its determinations to the Secretary of Commerce within 45 days after receipt of the petition, or in these investigations by Monday, October 21, 1991.

PREVIOUS COMMISSION INVESTIGATIONS CONCERNING MAGNESIUM

There have been four previous Commission investigations concerning magnesium. In 1921, the Commission ruled on three cases concerning magnesium carbonate, metallic magnesium, and magnesium sulphate.[6] In 1945, the Commission ruled on a *War Changes in Industry* investigation concerning magnesium.

THE PRODUCT

Description and Uses

Magnesium is the eighth most abundant element in the earth's crust and the third most plentiful element dissolved in seawater. Magnesium metal,[7] the lightest of all structural metals, is a silver-white metallic element with a density approximately 63 percent that of aluminum. Thermal properties of magnesium include a melting point of 650 degrees Celsius and a boiling point of 1,108 degrees Celsius. Magnesium and

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[5] 56 F.R. 46443.

[6] USITC report Nos. A-10, C-16, and A-10, respectively.

[7] Magnesium compounds such as caustic-calcined magnesias, magnesium hydroxide, magnesium sulfate, magnesium carbonate, and refractory magnesia are not included in the investigation.

magnesium alloys[8] are among the easiest of structural metals to machine due to their light weight and moderate hardness.[9] Pure magnesium is seldom used for structural applications because its specific tensile and yield strengths are low. Magnesium's light weight and high vibrational-dampening properties have encouraged research to develop alloys with improved physical and mechanical properties to enable magnesium's use as a structural metal wherever saving weight is an important consideration.[10]

In 1990, nearly 50 percent of magnesium metal was consumed by the aluminum industry for use as an alloy with aluminum to increase the hardness and corrosion resistance of pure aluminum. Aluminum-magnesium alloys are used principally in two-piece beverage cans, structural components in automobiles, aircraft, and military vehicles, and bumpers, wheels, and decorative trim in automobiles. Magnesium castings and wrought magnesium applications accounted for 19 percent of U.S. consumption of primary metal—principally in such automotive components as clutch housings, headlamp assemblies, valve and grill covers, and in such power tool components as chain saw and lawnmower housings. Remaining uses for magnesium in 1991 included desulfurization of iron and steel (10 percent); reducing agents in

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[8] Pure magnesium and magnesium alloys are classified by the Association for Testing and Materials (ASTM) (test standard B-92) for physical and chemical properties, including maximum and minimum acceptable impurity levels.

There is a whole family of magnesium alloys used in die casting. The most widely used magnesium alloy is AZ91D. This alloy contains 9 percent aluminum, 1 percent zinc, and 90 percent magnesium. The "D" relates to the tolerance of certain additional elements in the alloy. AZ91A was the first ASTM-approved alloy. AZ91B recognized the use of magnesium scrap and allowed higher copper levels. AZ91C is the sand and permanent mold casting version and contains no beryllium. AZ91D is a high-purity, corrosion-resistant form of the AZ91 series for die casting, and AZ91E is a high purity corrosion-resistant version for sand casting.

[9] Certain forms of magnesium metal, such as turnings, dusts, and scrap, react with water to generate hydrogen. This reaction may lead to spontaneous explosion; hence, these forms of magnesium must be stored and shipped in containers to insure a moisture-free environment. A 50-50 percent mixture of magnesium and aluminum powder is used in pyrotechnic devices such as fireworks.

[10] Timminco, a Canadian producer of high-purity pure magnesium argues that there are three separate like products: high-purity magnesium (99.95 percent or more magnesium by weight), commodity-grade magnesium (99.8 percent but less than 99.95 percent magnesium by weight), and magnesium alloys. Timminco is the only Canadian producer of high-purity magnesium. Both Dow Chemical and Magcorp produce high-purity magnesium.

nonferrous metals production (10 percent); and cathodic protection and other uses (12 percent).[11]

Manufacturing Processes

Primary Magnesium

Most magnesium comes from magnesium-bearing ores (dolomite, magnesite, brucite, and olivine), seawater, and well and lake brines. Large deposits of dolomite are distributed throughout the world, and dolomite is the principal magnesium-bearing ore found in the United States.

Open-pit methods are used to mine magnesium-bearing ores while primary crushing of magnesium ores is usually done near the site of the mine. The rock is loaded onto trucks and hauled to crushers that reduce it to approximately 6-inch size. The magnesium content of magnesium-bearing ores typically ranges from nearly 22 percent for dolomite up to 69 percent for brucite. The magnesium content of seawater is 0.13 percent, which is lower than that of the lowest grade of magnesium ore deposits; however, seawater has the advantage that it may be mined at an economically favorable location and it offers the extreme uniformity of magnesium content, allowing easier standardization of the refining process.

Magnesium is also produced from well and lake brines, which are water-based solutions containing dissolved magnesium salts. U.S. reserves of magnesium salts are obtained as brines from underground evaporite deposits, principally from the Great Salt Lake in Utah.

Magnesium metal is produced by either the electrolytic process or the silicothermic process. In the electrolytic process, seawater or brine is used as the primary feed material. Both hydrous and anhydrous magnesium chloride can be used as cell feed material in the electrolytic process, depending on the type of cell to be used.

Hydrous magnesium chloride is produced by reacting dolomite with seawater to precipitate dissolved magnesium as magnesium hydroxide. The magnesium hydroxide is then neutralized with hydrochloric acid to produce magnesium chloride.

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[11] A detailed market analysis is presented in the "Apparent Consumption by Market Segments" section of this report.

Anhydrous magnesium chloride is produced by concentrating and treating brine with calcium chloride to remove certain impurities. The resulting material is further concentrated and dehydrated in a dryer to yield magnesium chloride powder, which is then melted and purified to produce cell feed material.

Either hydrous or anhydrous magnesium chloride is fed to an electrolytic cell containing molten magnesium chloride and operating at 700 degrees Celsius. Direct electrical current is then sent through the cells to break down the magnesium chloride into chlorine and molten magnesium. The metal rises to the surface of the bath where it is guided into storage wells and cast into ingots. Both Magcorp and Dow Chemical use this process.[12] A schematic diagram of this process which is used by Magcorp, is presented in figure 1.

The silicothermic process uses magnesium-bearing ores, typically dolomite, as the primary feed material. In the silicothermic process calcined dolomite, ferrosilicon, and alumina are ground, heated, and briquetted. The briquets are charged into heated tubular retorts that operate under vacuum. Magnesia in the calcined dolomite is reduced by the silicon, producing magnesium vapor, which is crystallized in a condensing chamber, melted, and ladled into casting forms. A schematic diagram of this production process, which is used by Northwest Alloys (a U.S. producer), is presented in figure 2.

Magnesium and its alloys are typically cast into billets, from which they can be rolled or extruded into such products as bar, wire, and seamless pipe, or slabs from which they can be rolled into sheets and plate. An illustration of typical cast shapes of magnesium ingots is presented in figure 3.

Norsk Hydro Canada and Hydro Magnesium Norway (Canadian and Norwegian producers) use concentrated magnesium chloride brine to produce anhydrous magnesium chloride for use in their electrolytic cell process. Electrolytic cells used to recover magnesium from magnesium chloride differ by company, and little information is usually disclosed regarding cell designs.

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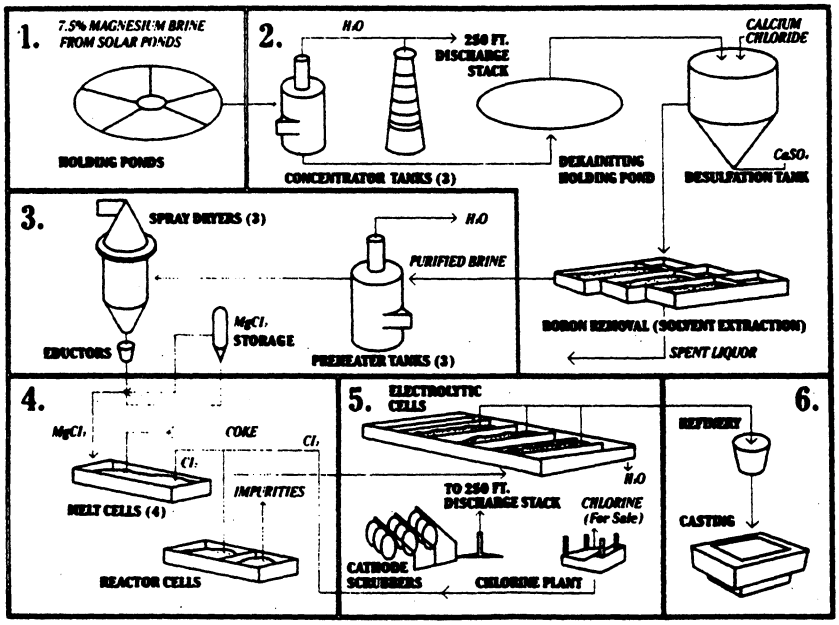
[12] ***. Their production process inherently produces pure magnesium. In order to produce magnesium alloys or higher purity magnesium, the pure magnesium must complete a further step. This additional step involves the placing of liquid magnesium into special furnaces and either adding alloying elements to produce magnesium alloys or by further processing in order to extract certain impurities to produce higher purity magnesium. *** uses a very similar process. ***.

Figure 1
Schematic diagram of Magcorp's electrolytic production process

MAGCORP'S SIX PART PROCESS OF MAGNESIUM



Magnesium Corporation of America (MAGCORP)

1. SOLAR EVAPORATION

The first step to convert lake water into magnesium, is to concentrate the brine. That is, to increase the concentration of suspended minerals...while decreasing the percentage of water.

To do this, lake water is pumped into enormous solar evaporation ponds — shallow, man-made ponds covering vast acres of the flat, desert floor. The sun, the wind and the dry climate speed evaporation.

To control the lake's level, the Utah State Government also installed a series of pumps that flood part of the Bonneville Salt Flats. The result is, in essence, a "new" Salt Lake, impervious to the natural rise and fall of the original lake. Magcorp built a second set of solar ponds near the new lake, benefitting from its stability...and the "preconcentration" of minerals from the partially evaporated water.

As the water evaporates, potassium and sodium crystallize on the pond floors. However, the magnesium — in the form of magnesium chloride — remains suspended in the brine and eventually reaches a concentration of 7.5%...nearly 20 times the original concentration!

Throughout this entire process, the principal source of energy is safe, clean, solar power.

2. BRINE PREPARATION

The concentrated brine is pumped from the evaporation ponds to holding ponds — which contain enough brine to supply two years of ready raw material for processing.

In the brine preparation area, the brine is purified, removing other minerals and products — but leaving the magnesium chloride.

Locally mined oolitic sands ($CaC0_3$) are mixed with by-product hydrochloric acid (HCl). This produces a Calcium Chloride ($CaCl_2$) solution.

The Calcium Chloride ($CaCl_2$) is mixed with the brine and reacts with the sulfate to form gypsum ($CaS0_4$). Then the gypsum is separated from the brine with a thickener.

Finally, a solvent extraction process is used to eliminate boron from the brine.

3. SPRAY DRYING INTO POWDER

Next the magnesium chloride solution is piped from the holding ponds into giant towers within the processing plant. There, high-volume, state-of-the-art spray dryers flash dry the solution into magnesium chloride powder.

The powder is recovered and stored in million-pound-capacity bins.

4. MELTING AND PURIFYING

The magnesium chloride powder is next transferred to melt cells where it is melted and purified, using chlorine and other chemicals. This step removes magnesium oxide...other trace impurities...and any remaining water.

(It's noteworthy that the chlorine used in this step is a recycled by-product from the electrolytic process [step #5]. Throughout Magcorp's magnesium processing, there is virtually no waste. Even though magnesium is the intended product — all by-products are used...sold...or processed further.)

5. ISOLATING THE MAGNESIUM

The molten magnesium chloride is transferred to electrolytic cells...where it's finally separated into magnesium and chlorine.

A direct electrical current is used to decompose the magnesium chloride into liquid magnesium metal and chlorine gas. The chlorine is collected under vacuum and transferred to the chlorine plant — where it is cleaned, purified and dried for re-use...or for sale to other industries, such as water or swimming pool purification, gold mining operations, etc.

The purified, molten magnesium is collected in vacuum transfer vessels and taken to the cast house.

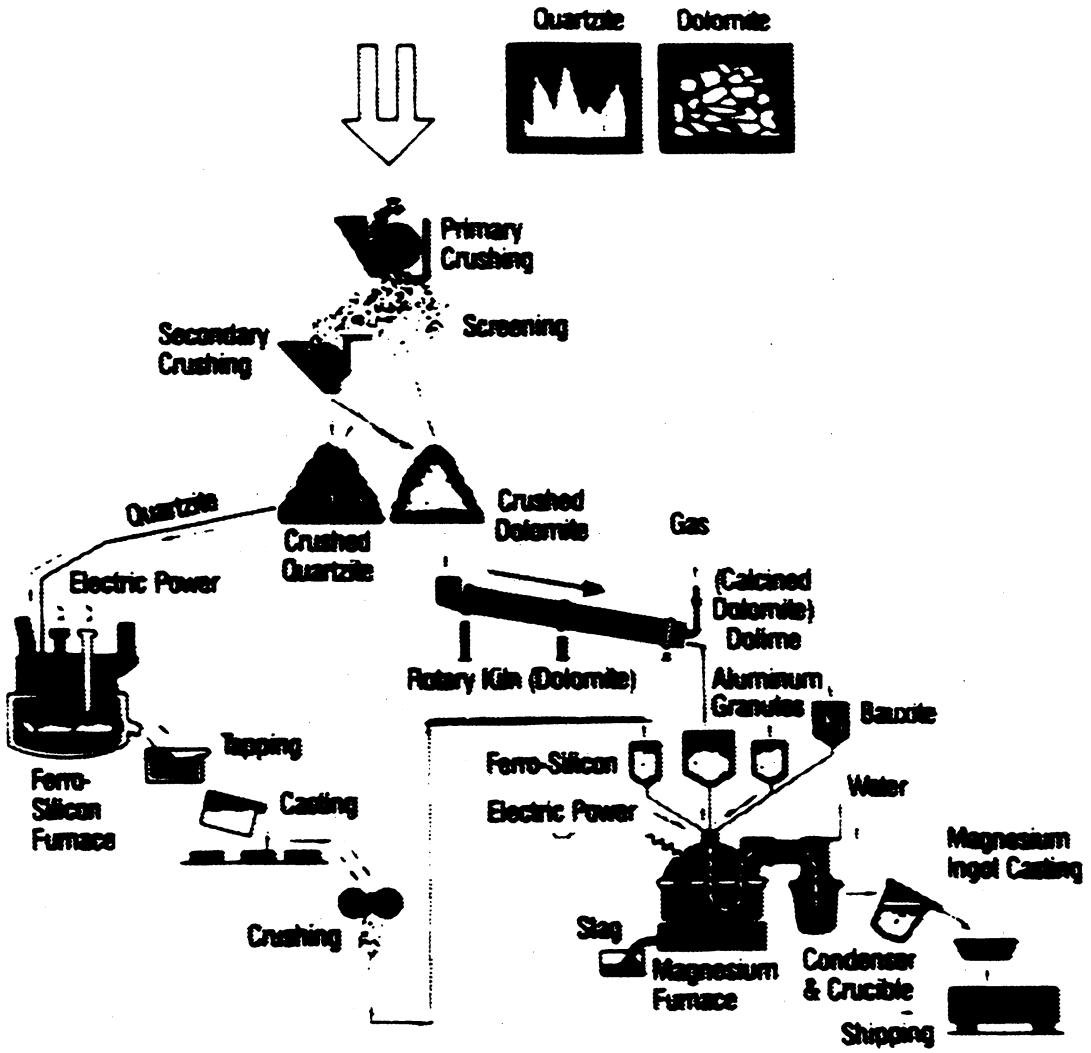
6. CASTING

In the cast house — or foundry — the magnesium is further refined...and then cast into ingots, weighing from 15 to 500 pounds.

Some of the magnesium is alloyed with other metals — such as zinc and aluminum — to create strong, high-purity, corrosion-resistant, lightweight magnesium alloys. Or it may be turned directly into end-use products, such as anodes for corrosion protection...or high-purity grinding slabs.

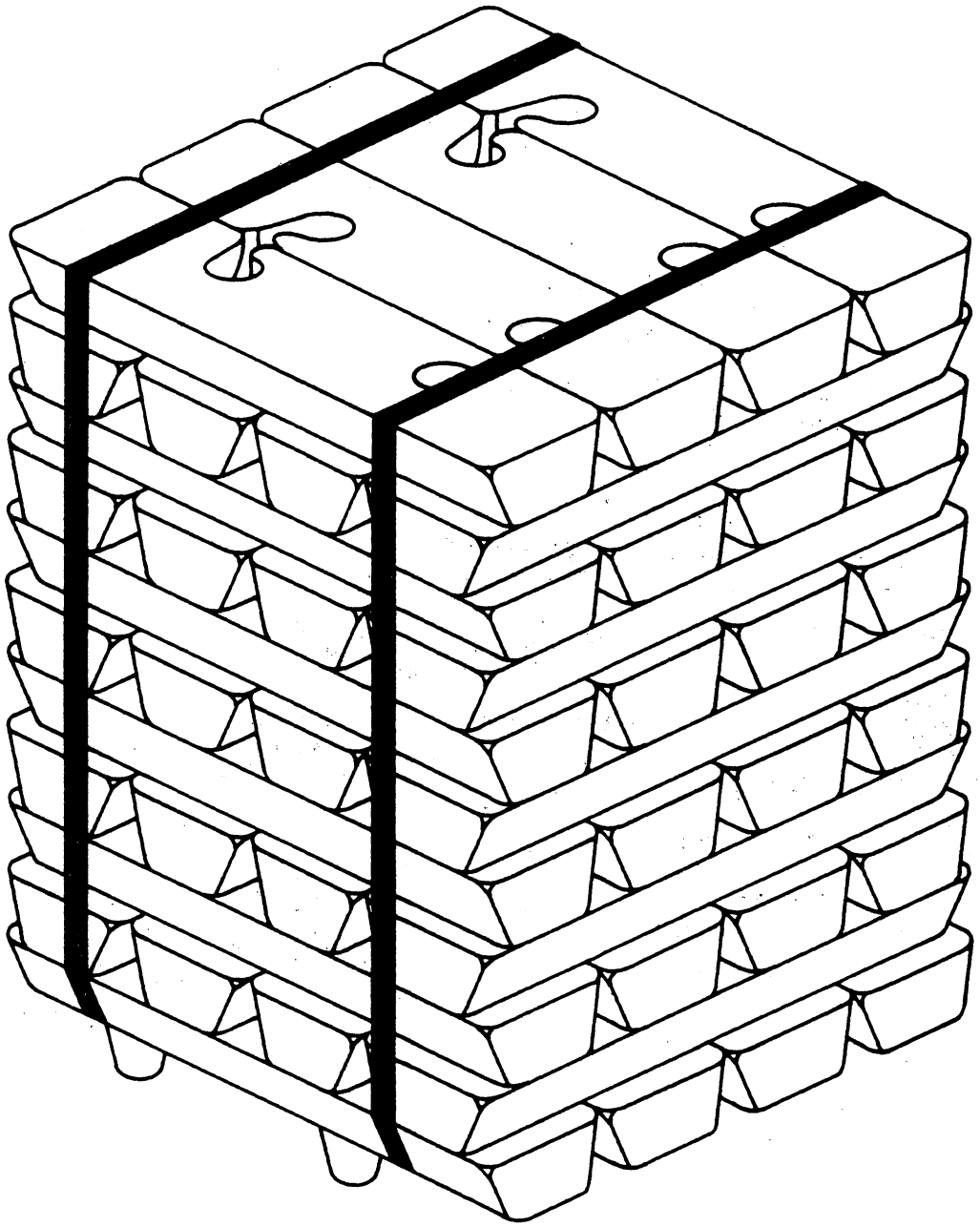
Source: Magcorp.

Figure 2
Schematic diagram of Northwest Alloy's silicothermic production process



Source: Northwest Alloys.

Figure 3
Illustration of typical cast shape of magnesium ingots



Source: Northwest Alloys.

Secondary Magnesium

Secondary magnesium is magnesium recovered from secondary sources such as old and new scrap[13] and recycling. Approximately 15 percent of secondary magnesium is sold on the open market. The remaining 85 percent is recycled by aluminum-based alloy recyclers (such as beverage can recyclers) and remains with the aluminum-based alloy.

Secondary magnesium producers purchase magnesium scrap and produce cast shapes such as ingots, slabs, and anodes essentially by remelting the scrap. These secondary products are then sold to many of the same firms that purchase primary magnesium, in particular the aluminum industries and die casters. The chemistry of secondary and primary magnesium is similar; however, there is the potential for higher impurity levels in the secondary material. Purchasers who are sensitive to impurity levels tend to purchase only primary magnesium.

Aluminum recyclers account for the vast majority of magnesium recovery. Approximately 85 percent of the magnesium recovered from scrap is from aluminum-based alloyed products such as recycled two-piece beverage cans.[14] These recyclers, however, do not separate the magnesium from the aluminum and sell the magnesium on the open market; rather they reuse the magnesium with the aluminum to produce new two-piece beverage cans, or other aluminum alloy products.[15]

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[13] Old scrap is magnesium that has been used in end products and is collected for metal recovery after the products are worn out or discarded. New scrap, generated in fabricating operations such as alloying, forging, casting, and machining, consists of clippings, turnings, borings, skimmings, slags, and drosses. U.S. Bureau of Mines, *Mineral Facts and Problems, 1985 Edition*, Bulletin 675, Magnesium chapter, pp. 6-7.

[14] There is approximately 4 percent magnesium in a typical two-piece beverage can. The magnesium is added to strengthen the aluminum.

[15] The Bureau of Mines includes magnesium recovered from recycled aluminum in its consumption data, even though the magnesium remains with the aluminum.

Substitute Products

Greater competition exists regarding substitute products in the magnesium alloy markets than in the pure magnesium markets, and there are important factors other than price and availability that determine the substitutability of products for magnesium. In the aluminum industry, there is no substitute for magnesium. In steel and iron desulfurization, calcium chloride may be substituted; however, sunk capital costs, environmental concerns, service structures, and corporate policies may impact on the decision to substitute calcium chloride for magnesium.

In magnesium alloy applications, aluminum, zinc, and even plastics can be substituted in many diecasting applications where magnesium may be used. For example, diecasters that produce automobile parts such as engine valve covers, transmission casings, instrument panel support brackets, and mirror housings must consider not only meeting necessary technical specifications, but must also consider the total delivered cost of their product (including machining and finishing costs) to automobile manufacturers.

In producing titanium metal by reducing titanium tetrachloride, sodium may be used rather than magnesium. Rare-earth elements, such as cerium, can be used in the production of nodular iron, and calcium carbide and calcium carbonate are used for iron desulfurization. In cathodic protection in pipelines, alloys of aluminum and zinc may be substituted for magnesium alloys. Alumina, chromite, and kyanite may be used in place of magnesia[16] in some refractory applications.[17]

U.S. Tariff Treatment

Imports of pure magnesium and magnesium alloys are classified in HTS subheadings 8104.11.00 and 8104.19.00, respectively.[18] Table 1 presents these HTS subheadings' rates of duty.

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[16] Magnesia are magnesium compounds, not magnesium metal.

[17] U.S. Bureau of Mines, *Mineral Fact and Problems.*

[18] Pure magnesium was previously classified in item 628.55 of the former Tariff Schedules of the United States (TSUS). Magnesium alloys were previously classified in item 628.57 of the former TSUS.

Table 1
Primary magnesium: U.S. import duties for HTS subheadings 8104.11.00[1] and 8104.19.00, 1991[2]

Subheading/eligibility status	*Duty column*	*Rate of duty*
		(percent ad valorem)
Subheading 8104.11.00:		
Canada[3]	Col. 1—Special	5.6
Norway	Col. 1—General	8.0
MFN countries[4]	Col. 1—General	8.0
Other special rate countries:		
GSP[5]	Col. 1—Special	Free
CBERA[6]	Col. 1—Special	Free
Israel[7]	Col. 1—Special	Free
Others[8]	Col. 2	100.0
Subheading 8104.19.00:		
Canada[3]	Col. 1—Special	4.5
Norway	Col. 1—General	6.5
MFN countries[4]	Col. 1—General	6.5
Other special rate countries:		
GSP countries[5]	Col. 1—General	Free
CBERA countries[6]	Col. 1—Special	Free
Israel[7]	Col. 1—Special	Free
Others[8]	Col. 2	60.5

[1] Unwrought magnesium containing at least 99.8 percent by weight of magnesium.
[2] Unwrought magnesium containing less than 99.8 percent by weight of magnesium with magnesium being the largest metallic element present in the alloy.
[3] Imports are subject to provisions in the United States-Canada Free-Trade Agreement.
[4] Other countries eligible for most-favored-nation tariff treatment.
[5] Countries eligible for special tariff treatment under the Generalized System of Preferences (GSP).
[6] Countries eligible for special tariff treatment under the Caribbean Basin Economic Recovery Act (CBERA).
[7] Imports are subject to provisions in the United States-Israel Free Trade Area.
[8] All Communist countries and areas enumerated in general note 3(b) of the HTS.

Source: Harmonized Tariff Schedule of the United States (1991).

Pure Magnesium

The column 1-general rate of duty for subheading 8104.11.00 is 8 percent ad valorem. Eligible imports from designated countries under the Generalized System of Preferences (GSP)[19] and the Caribbean Basin Economic Recovery Act (CBERA),[20] and from Israel under the United States-Israel Free Trade Area Implementation Act,[21] may receive duty-free entry. Goods originating in the territory of Canada are dutiable at a preferential rate of 5.6 percent ad valorem under the United States-Canada Free-Trade Agreement.[22] The column 2 rate of duty is 100 percent ad valorem.

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[19] The GSP affords nonreciprocal tariff preferences to developing countries to aid their economic development and to diversify and expand their production and exports. The U.S. GSP, enacted in title V of the Trade Act of 1974 and renewed in the Trade and Tariff Act of 1984, applies to merchandise imported on or after January 1, 1976 and before July 4, 1993. Indicated by the symbol "A" or "A*" in the special subcolumn of column 1, the GSP provides duty-free entry to eligible articles the product of and imported directly from designated beneficiary developing countries, as set forth in general note 3(c)(ii) to the HTS.

[20] The CBERA affords nonreciprocal tariff preferences to developing countries in the Caribbean Basin area to aid their economic development and to diversify and expand their production and exports. The CBERA, enacted in title II of Public Law 98-67, implemented by Presidential Proclamation 5133 of November 30, 1983, and amended by the Customs and Trade Act of 1990, applies to merchandise entered, or withdrawn from warehouse for consumption, on or after January 1, 1984; this tariff preference program has no expiration date. Indicated by the symbol "E" or "E*" in the special subcolumn of column 1, the CBERA provides duty-free entry to eligible articles the product of and imported directly from designated countries, as set forth in general note 3(c)(v) to the HTS.

[21] Preferential rates of duty in the special subcolumn of column 1 followed by the symbol "IL" are applicable to products of Israel under the *United States-Israel Free-Trade Area Implementation Act of 1985*, as provided in general note 3(c)(vi) of the HTS. Where no rate of duty is provided for products of Israel in the special subcolumn for a particular provision, the rate of duty in the general subcolumn of column 1 applies.

[22] Preferential rates of duty in the special duty rates subcolumn of column 1 followed by the symbol "CA" are applicable to eligible goods originating in the territory of Canada under the *United States-Canada Free-Trade Agreement*, as provided in general note 3(c)(vii) to the HTS.

Magnesium Alloys

The column 1-general rate of duty for HTS subheading 8104.19.00 is 6.5 percent ad valorem. Eligible imports may receive duty-free entry under the GSP, CBERA, and the United States-Israel Free Trade Area Implementation Act. Goods originating in the territory of Canada are eligible for a preferential duty rate of 4.5 percent ad valorem under the United States-Canada Free-Trade Agreement. The column 2 rate of duty is 60.5 percent ad valorem.

THE NATURE AND EXTENT OF ALLEGED SUBSIDIES AND SALES AT LTFV

Alleged Subsidies by the Government of Canada

On September 25, 1991, Commerce initiated a countervailing duty investigation to determine whether manufacturers, producers, or exporters in Canada of primary magnesium receive benefits that constitute subsidies with the meaning of section 701 of the act.[23] Pending an affirmative determination by the Commission, Commerce is scheduled to make its preliminary determination in this investigation on or before November 29, 1991.

Alleged Sales at LTFV

On September 25, 1991, Commerce initiated antidumping investigations to determine whether imports of primary magnesium from Canada and Norway are being, or are likely to be, sold in the United States at LTFV with the meaning of section 731 of the act.[24] Pending affirmative determinations by the Commission, Commerce is scheduled to make its preliminary determinations in these investigations on or before February 12, 1992. Table 2 presents Commerce's initial estimated margins for Canada and Norway.

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[23] A petition alleging subsidies by the Government of Norway was not initiated by Commerce. A copy of Commerce's *Federal Register* notices appears in app. C.

[24] A copy of Commerce's *Federal Register* notices is presented in app. C.

Table 2
Primary magnesium: U.S. Department of Commerce's initial estimated margins for Canada and Norway

Country	*Investigations*	*Margins*
		(percent ad valorem)
Canada	LTFV	27.18 to 32.74
Canada	CVD	(1)
Norway	LTFV	10.92

[1] Not specified.

Source: U.S. Department of Commerce.

THE DOMESTIC MARKET

Apparent U.S. Consumption

Data on apparent U.S. consumption of magnesium are presented in table 3 and figure 4 and are based on U.S. producers' shipments compiled from questionnaires of the Commission and official statistics of Commerce. Apparent U.S. consumption increased 1.5 percent from 1988 to 1989, increased 5.3 percent from 1989 to 1990, but decreased 5.3 percent from January-June 1990 to January-June 1991.

Table 3
Magnesium: U.S. shipments of domestic product, U.S. imports, and apparent U.S. consumption, 1988-90, January-June 1990, and January-June 1991

(In metric tons)

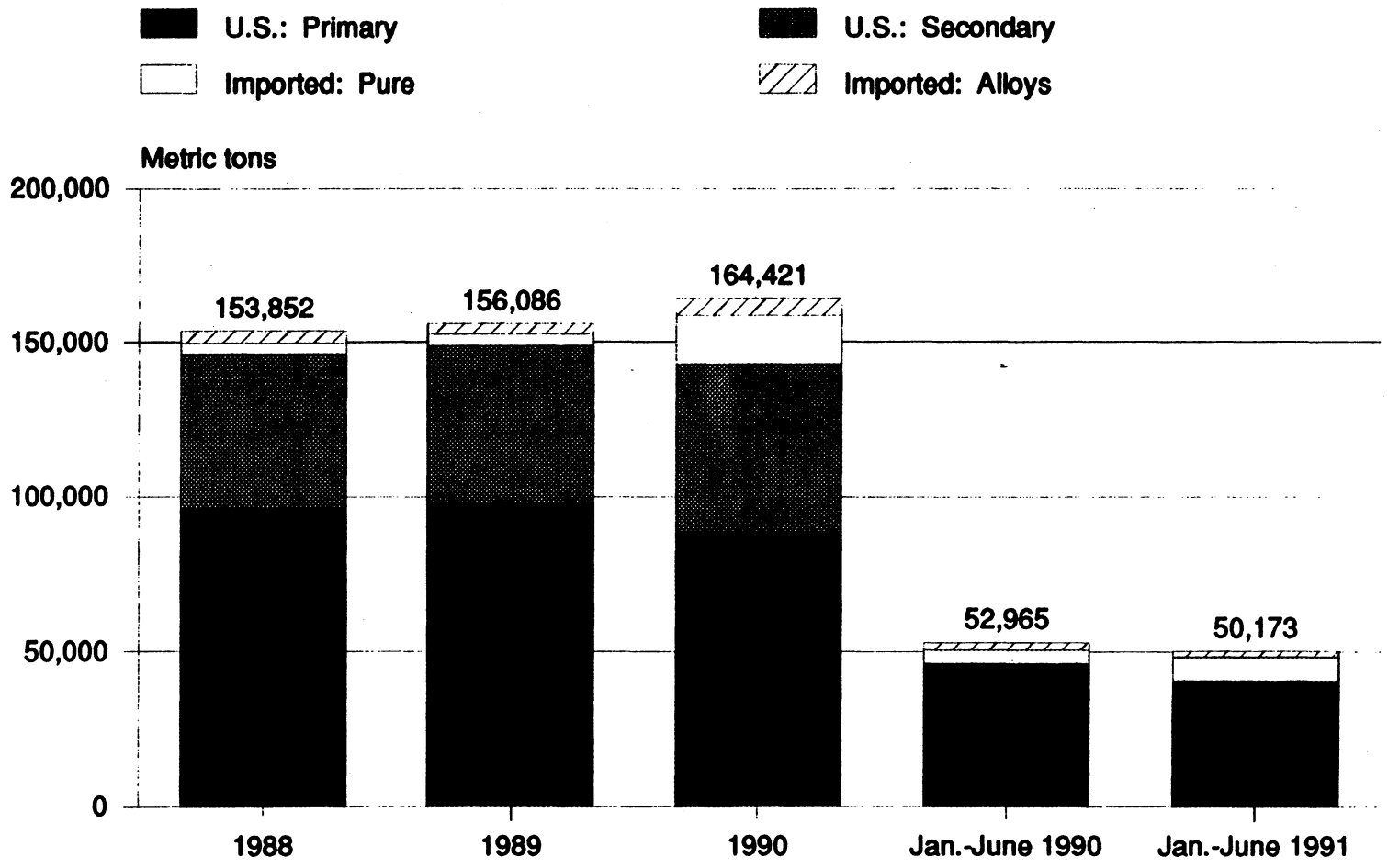
Item	1988	1989	1990	January-June— 1990	1991
Producers' U.S. shipments:					
Pure magnesium	***	***	***	***	***
Magnesium alloys	***	***	***	***	***
Subtotal	95,821	97,512	88,169	46,173	40,677
Secondary magnesium[1]	50,207	51,200	54,529	(2)	(2)
Total, U.S. shipments	**146,028**	**148,712**	**142,698**	**46,173**	**40,677**
U.S. imports:[3]					
Pure magnesium:					
Canada	731	247	14,562	4,072	7,492
Norway	2,687	3,478	1,166	294	151
Other sources	198	154	411	152	85
Subtotal	3,616	3,879	16,139	4,518	7,728
Magnesium alloys:					
Canada	193	95	2,341	566	1,277
Norway	3,653	3,111	2,967	1,546	392
Other sources	362	289	276	162	99
Subtotal	4,208	3,495	5,584	2,274	1,768
Total, imports	**7,824**	**7,374**	**21,723**	**6,792**	**9,496**
Apparent consumption	**153,852**	**156,086**	**164,421**	**52,965**	**50,173**

[1] Magnesium recovered from scrap processed in the United States; includes magnesium recycled by aluminum can recyclers and titanium producers. Secondary magnesium production is presented because shipment data are not available.
[2] Not available.
[3] Secondary magnesium imported into the United States with the identical chemical specifications as primary magnesium is included in the respective pure and alloy import statistics. There is no separate HTS subheading for secondary magnesium.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission, U.S. Bureau of Mines, and official statistics of the U.S. Department of Commerce.

Figure 4

Magnesium: Apparent U.S. consumption, by types and sources, 1988-90, January-June 1990, and January-June 1991



Source: Table 3.

U.S. Consumption by Market Segments

Primary Magnesium

Table 4 presents U.S. consumption of primary magnesium, by market segments and end uses, for the period 1988-90 as calculated by the U.S. Bureau of Mines.[25] The Bureau of Mines defines two general market segments for primary magnesium. One is for structural products (castings, and wrought (further processed) magnesium products), which accounted for 20.8 percent of primary magnesium consumption in 1990. The other is for distributive and sacrificial purposes such as for uses in making aluminum alloys, anodes, chemicals, and iron and steel desulfurization, which accounted for 79.2 percent of consumption in 1990.

Typically, purchasers of pure magnesium do not purchase magnesium alloys. Likewise, magnesium alloy purchasers do not typically purchase pure magnesium.[26] Consumption of primary magnesium by end uses in 1990 is presented in figure 5 and the following tabulation (in percent):

End use	Percent
Aluminum	46.9
Wrought products	11.4
Iron and steel desulfurization	10.3
Castings	9.5
Reducing agent	9.4
Cathodic protection (anodes)	5.6
Nodular iron	1.5
Chemicals	0.8
Other	4.7

[25] The U.S. Bureau of Mines consumption data presented in table 4 are slightly greater than the consumption data presented in table 3. Primary magnesium consumption in table 3 is based on data compiled from responses to questionnaires of the Commission; data in table 4 are based on official statistics of the U.S. Bureau of Mines.

[26] For a more detailed discussion, see the "Market Characteristics" section later in this report.

Table 4
Primary magnesium: U.S. consumption, by market segments and end uses, 1988-90

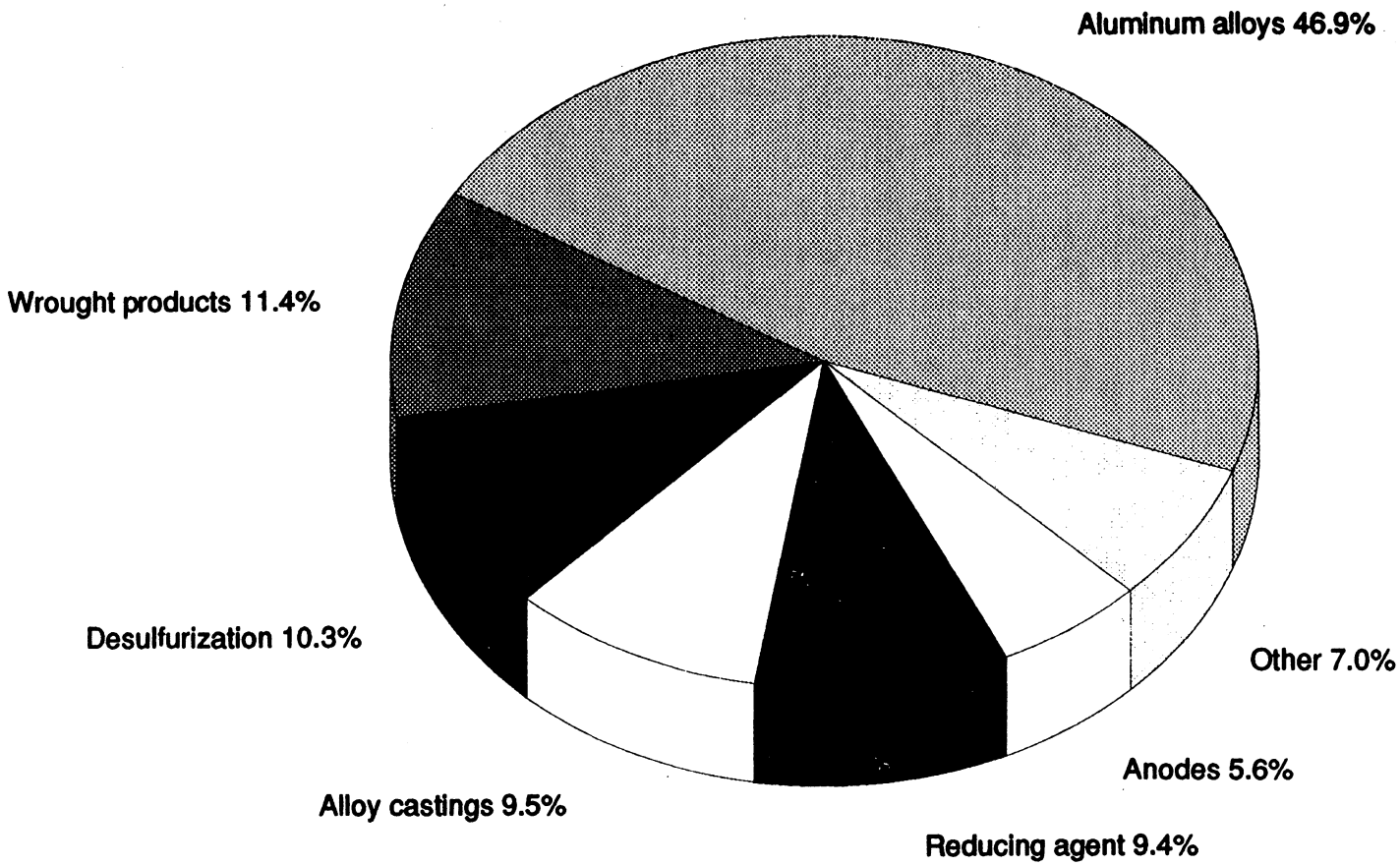
(In metric tons)

Market segments/end uses	*1988*	*1989*	*1990*
For structural products:			
Castings:			
Die	4,383	5,627	7,479
Permanent mold	943	811	875
Sand	1,743	1,017	724
Wrought products:			
Extrusions	6,907	6,712	7,848
Other[1]	3,231	2,941	3,096
Subtotal	17,207	17,108	20,022
For distributive or sacrificial purposes:			
Alloys:			
Aluminum	53,671	53,821	45,060
Other	7	9	8
Cathodic protection (anodes)	6,234	5,474	5,421
Chemicals	780	594	800
Iron and steel desulfurization	([2])	10,463	9,853
Nodular iron	2,037	1,635	1,424
Reducing agent[3]	8,467	10,798	8,989
Other[4]	12,390	5,324	4,531
Subtotal	83,586	88,118	76,086
Total	100,793	105,226	96,108

[1] Includes sheet, plate, and forgings.
[2] Data not disclosed by the Bureau of Mines in order to avoid disclosing company proprietary data; included in "Other" category.
[3] Reducing agents for titanium, zirconium, hafnium, uranium, and beryllium.
[4] Includes scavenger, deoxidizer, and powder.

Source: U.S. Bureau of Mines.

Figure 5
Primary magnesium: Consumption by end uses, 1990



Source: U.S. Bureau of Mines.

Secondary Magnesium

Magnesium recovered from old scrap has become an important factor in the total U.S. magnesium supply. In 1973, secondary magnesium produced from scrap represented only 2 percent of the total U.S. supply. By 1983 it had increased to a level of 13 percent. By 1990, magnesium recovered from old scrap represented 22 percent and magnesium recovered from new scrap represented 16 percent of U.S. producers' shipments.[27]

The largest single source of magnesium scrap is used Volkswagen "Beetle" engines and transmission casings.[28] Other sources include lawnmower engine casings, off-spec auto parts, and hot-water heater anodes (thin rods used in water heaters to protect the walls of the heater from corroding). Table 5 presents U.S. consumption of magnesium recovered from scrap processed in the United States by kinds of scrap and forms of recovery for the years 1986-90. Consumption of secondary magnesium by end uses in 1990 is presented in figure 6 and the following tabulation (in percent):

End use	Percent
Aluminum alloys	85.3
Magnesium alloy ingot	7.9
Magnesium alloy castings	1.6
Magnesium alloy shapes	0.6
Other	4.6

[27] U.S. Bureau of Mines, *Mineral Facts and Problems*, p. 7.

[28] Until the mid-1970s, Volkswagen was the single largest magnesium user in the world. Each Volkswagen "Beetle" the company produced contained 42 pounds of magnesium. However, during the mid-1970s, Volkswagen began phasing out production of the "Beetle," and this source of secondary scrap is therefore becoming more scarce. Most of the used "Beetle" engines and casings currently consumed as scrap by secondary magnesium producers are now imported from Europe and Latin America.

Table 5
Secondary magnesium: Magnesium recovered from scrap and processed in the United States, by kinds of scrap and forms of recovery, 1986-90

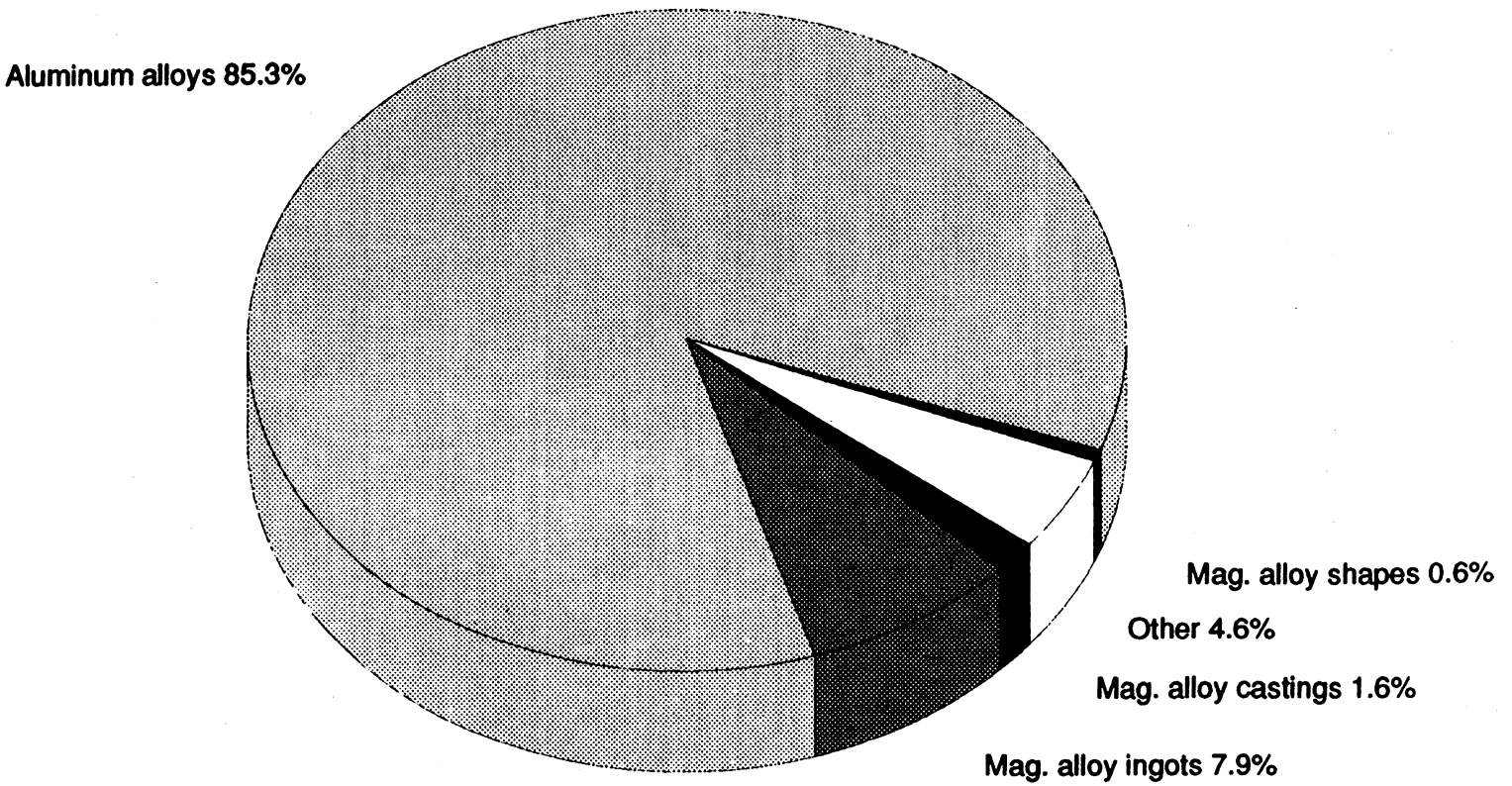
(In metric tons)

Item	*1986*	*1987*	*1988*	*1989*	*1990*
Kinds of scrap:					
New scrap:					
Magnesium-base	991	845	2,641	3,951	3,992
Aluminum-base	17,822	20,867	19,926	19,278	19,464
Subtotal	18,813	21,712	22,567	23,229	23,456
Old scrap:					
Magnesium-base	3,958	3,857	3,882	4,269	4,277
Aluminum-base	19,036	19,595	23,758	23,702	26,796
Subtotal	22,994	23,452	27,640	27,971	31,073
Total	**41,807**	**45,164**	**50,207**	**51,200**	**54,529**
Forms of recovery:					
Magnesium alloy ingot[1]	3,925	4,001	3,930	4,494	4,290
Magnesium alloy castings	551	447	438	795	857
Magnesium alloy shapes	31	0	1,065	635	301
Aluminum alloys	37,293	40,711	43,827	43,125	46,528
Zinc and other alloys	(2)	(2)	(2)	(2)	(2)
Chemical[3]	(2)	(2)	943	(2)	(2)
Cathodic protection	(2)	(2)	(2)	(2)	(2)
Total	**41,807**	**45,164**	**50,207**	**51,200**	**54,529**

[1] Includes secondary magnesium content of both secondary and primary alloy ingot.
[2] Data withheld to avoid disclosing company proprietary data; included in "Forms of Recovery: Total."
[3] Includes other dissipative uses.

Source: U.S. Bureau of Mines.

Figure 6
Secondary magnesium: Consumption by end uses, 1990



Source: U.S. Bureau of Mines.

Global Production Capacity and Production

There are presently 11 manufacturers and 12 plants producing primary magnesium throughout the world. World annual production capacity for primary magnesium as of December 31, 1990, is presented in table 6. The United States accounted for 40.5 percent of capacity at the end of 1990.

According to U.S. Bureau of Mines estimates, total world production of magnesium in 1989 was 344,000 metric tons, with the United States accounting for 152,000 metric tons or 44.2 percent.[29]

U.S. Producers

There are three producers of primary magnesium in the United States.[30] The Commission received questionnaire responses from all three producers. The names of these producers, the location of their manufacturing facilities, the raw material used at each plant, each firm's share of U.S. production in 1990, and the position each firm has taken with respect to the petition are presented in table 7.

Magnesium Corp. of America

Magcorp, the petitioner, has a production facility in Rowley, UT, approximately 40 miles west of Salt Lake City on the southern shore of the Great Salt Lake. Magcorp, a wholly owned subsidiary of the Renco Group, New York, NY, purchased the facility from AMAX Magnesium Corp. in 1989.

Magcorp's production facility was originally built in the early 1970s by National Lead. Magcorp produces a variety of magnesium products, including pure magnesium ranging from 99.8 percent to 99.95 percent magnesium by weight and a series of magnesium alloys.

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[29] U.S. Bureau of Mines, *Magnesium and Magnesium Compounds: 1989*, Minerals Yearbook, p. 15.

[30] Additionally, there are three U.S. producers of secondary magnesium in the United States.

Table 6
Primary magnesium: World annual capacity and production, by sources, as of December 31, 1990

Continent/country	*Capacity*[1]	*Share of world capacity*
	(metric tons)	*(percent)*
North America:		
Canada	61,500	13.9
United States	179,000	40.5
Subtotal	240,500	54.4
South America (Brazil)	10,600	2.4
Europe:		
France	15,000	3.4
Italy	10,000	2.3
Norway	41,000	9.3
U.S.S.R.	95,000	21.5
Yugoslavia	7,000	1.6
Subtotal	168,000	38.0
Asia:		
China	9,000	2.0
India	600	0.1
Japan	13,000	2.9
Subtotal	22,600	5.1
Total	**441,700**	**100.0**

[1] Includes capacity at operating plants as well as at plants on standby basis.

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

Source: U.S. Bureau of Mines.

Table 7
Magnesium: U.S. producers, by products, plant locations, raw materials, and positions taken with respect to the petition, 1990

Product/Company	*Plant location*	*Raw material*	*Position taken with respect to the petition*
Primary magnesium:			
Dow Chemical	Freeport, TX	Seawater	***.
Magcorp	Rowley, UT	Lake brines	Petitioner.
Northwest Alloys	Addy, WA	Dolomite	***.
Secondary magnesium:			
Garfield Alloys	Garfield Hts., OH	Scrap	***.
IMCO Recycling	Sapulpa, OK	Scrap	***.
Halaco	Oxnard, CA	Scrap	***.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Magcorp represented—

- *** percent of U.S. production in 1988, *** percent in 1989, *** percent in 1990, *** percent in January-June 1990, and *** percent in January-June 1991;
- *** percent of U.S. shipments in 1988, *** percent in 1989, *** percent in 1990, *** percent in January-June 1990, and *** percent in January-June 1991; and
- *** percent of U.S. exports in 1988, *** percent in 1989, *** percent in 1990, *** percent in January-June 1990, and *** percent in January-June 1991.

Dow Chemical Co.

Dow Chemical, a U.S. producer,[31] has a production facility in Freeport, TX, and is a subsidiary of Dow Chemical Co., Midland, MI. Dow began production of magnesium in 1941, and was the first commercial magnesium producer in the United States. Dow has been the largest U.S. magnesium producer in the United States for the last 50 years. Dow Chemical produces a variety of magnesium products including pure magnesium ranging from 99.8 percent to 99.95 percent magnesium by weight, and a series of magnesium alloys.[32]

Dow Chemical represented—

- *** percent of U.S. production in 1988, *** percent in 1989, *** percent in 1990, *** percent in January-June 1990, and *** percent in January-June 1991;
- *** percent of U.S. shipments in 1988, *** percent in 1989, *** percent in 1990, *** percent in January-June 1990, and *** percent in January-June 1991; and
- *** percent of U.S. exports in 1988, *** percent in 1989, *** percent in 1990, *** percent in January-June 1990, and *** percent in January-June 1991.

Northwest Alloys

Northwest Alloys, a U.S. producer,[33] is a wholly owned subsidiary of Aluminum Co. of America (ALCOA). Northwest Alloys produces only pure magnesium products, with the majority of its production transferred to ALCOA's aluminum-smelting facilities. Company transfers represented *** percent of their total shipments in 1988, *** percent in 1989, *** percent in 1990, *** percent in January-June 1990, and *** percent in January-June 1991. The remainder is sold on the open market.

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[31] Dow Chemical indicated in its questionnaire response that ***.

[32] ***.

[33] Northwest Alloys indicated in its questionnaire response that ***.

Northwest Alloys represented—

- *** percent of U.S. production in 1988, *** percent in 1989, *** percent in 1990, *** percent in January-June 1990, and *** percent in January-June 1991;
- *** percent of U.S. shipments in 1988, *** percent in 1989, *** percent in 1990, *** percent in January-June 1990, and *** percent in January-June 1991; and
- *** percent of U.S. exports in 1988, *** percent in 1989, *** percent in 1990, *** percent in January-June 1990, and *** percent in January-June 1991.

U.S. Importers

Approximately 20 firms were identified by the Customs Net Import (CNI) file as importers of primary magnesium from the subject countries during the period of investigation. The Commission sent importers' questionnaires to each of these firms. Respondents to the Commission's importers' questionnaire are believed to represent over 80 percent of imports of primary magnesium from the subject countries during the period of investigation.[34] Table 8 presents a listing of firms that received the importers' questionnaire and indicated that they imported primary magnesium from the subject countries.

[34] Norsk Hydro a.s., Norsk Hydro Canada, Inc., and Timminco Limited indicated that ***. The three foreign producers listed above were requested to complete the importers questionnaire and supply data ***.

Table 8
Primary magnesium: U.S. importers, company locations, and subject countries from which they import, 1988-90

Company	Company location	Subject countries from which firm imports
*	*	*
*	*	*
*	*	*
*	*	*
*	*	*
*	*	*
*	*	*

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Channels of Distribution

U.S. producers' and importers' shipments of magnesium to distributors and end users, by product categories, for 1990 are presented in table 9.

U.S. producers shipped *** percent of their pure magnesium shipments directly to end users and *** percent to distributors; *** percent of their magnesium alloy shipments went directly to end users and *** percent to distributors.

All U.S. importers' shipments went directly to end users. Eighty-two percent of pure magnesium shipments went to unrelated end users, with the remaining 17.6 percent going to related end users. All importers' shipments of magnesium alloy were shipped to unrelated end users.[35]

[35] For a detailed discussion see section on "Market Characteristics" later in this report.

Table 9
Primary magnesium: U.S. producers' and importers' U.S. shipments to distributors and end users, 1990

(In metric tons)

Product category	*Distributors*		*End users*	
	Related	*Unrelated*	*Related*	*Unrelated*
U.S. producers:				
Pure magnesium[1]	***	***	***	***
Magnesium alloys	***	***	***	***
U.S. importers:				
Pure magnesium	0	0	3,217	15,080
Magnesium alloys	0	0	0	4,011

[1] Includes ***.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

CONSIDERATION OF ALLEGED MATERIAL INJURY TO AN INDUSTRY IN THE UNITED STATES[36]

U.S. Capacity, Production, and Capacity Utilization

The Commission requested U.S. primary magnesium producers to provide data on their average-of-period and end-of-period practical capacity, production, and capacity utilization for 1988-90, January-June 1990, and January-June 1991. These data are

[36] The Commission also requested U.S. open-market secondary magnesium producers to provide data. Information from the two responding secondary producers is presented in app. D.

presented in table 10.[37] Because both pure and alloy magnesium are produced on the same production lines, the exception being the final processing step, producers had to estimate magnesium alloy capacity based on each company's normal product mix.

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[37] The Commission defined capacity or full production capability as the maximum level of production that an establishment could reasonably expect to attain under normal operating conditions. In estimating full production capability, the following was to be taken into consideration:

- Assume that only the machinery and equipment in place and ready to operate will be utilized. Do not consider facilities or equipment that would require extensive reconditioning before they can be made operable.
- Assume normal downtime, maintenance, repair, and cleanup.
- Do not assume number of shifts and hours of plant operations under normal conditions to be higher than that attained by your plant any time during the past 5 years.
- Do not consider overtime pay, availability of labor, materials, utilities, etc., to be limiting factors.
- Assume a product mix that was typical or representative of your production during the period. If your plant is subject to considerable short-run variation, assume the product mix of the current period.
- Do not assume increased use of productive facilities outside the plant for services (such as contracting out subassembly work) in excess of the proportion that would be normal during the time periods covered by this questionnaire.

End-of-period capacity was defined as full production capability of a plant(s) to produce for a period of time using the machinery and equipment in place at the end of the period.

Average-of-period capacity was defined as full production capability of a plant(s) to produce for a period of time using the machinery and equipment actually in place during the period. Unless there has been a change in full production capability (e.g., as a result of equipment or plant startup or shutdown) during the period, the end-of-period and average-of-period capabilities should be the same.

Table 10
Primary magnesium: U.S. capacity,[1] production, and capacity utilization, 1988-90, January-June 1990, and January-June 1991

Item	1988	1989	1990	January-June 1990	January-June 1991
	Quantity (metric tons)				
Production	139,510	149,676	139,442	72,353	64,078
Average-of-period capacity	148,409	158,793	158,428	79,059	79,173
	Capacity utilization ratio (percent)				
Average-of-period	94.0	94.3	88.0	91.5	80.9

[1] Practical capacity was defined as the greatest level of output a plant can achieve within the framework of a realistic work pattern. Producers were asked to consider, among other factors, a normal product mix and an expansion of operations that could be reasonably attained in their industry and locality in setting capacity in terms of the number of shifts and hours of plant operations. The capacity was reported using an industry average of 168 hours per week and 52 weeks per year.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Reported average-of-period capacity increased 7.0 percent from 1988 to 1989, decreased 0.2 percent from 1989 to 1990, and increased 0.1 percent during the interim periods January-June 1990 and January-June 1991. Production of primary magnesium increased 7.3 percent from 1988 to 1989, decreased 6.8 percent from 1989 to 1990, and decreased 11.4 percent during the interim periods. Average-of-period capacity utilization increased from 94.0 percent in 1988 to 94.3 percent in 1989 but decreased to 88.0 percent in 1990. During January-June 1990, average-of-period capacity was 91.5 percent; it fell to 80.9 percent during January-June 1991. End-of-period capacity was identical to average-of-period capacity for all three firms.

U.S. Producers' Shipments

Pure Magnesium

Data for U.S. producers' shipments of pure magnesium are presented in table 11 and figure 7. According to data collected from the Commission's questionnaires, U.S. producers' domestic shipments of pure magnesium increased *** percent in quantity from 1988 to 1989, decreased *** percent from 1989 to 1990, and decreased *** percent during the interim periods. The value of U.S. shipments of pure magnesium increased *** percent from 1988 to 1989, decreased *** percent from 1989 to 1990, and decreased *** percent during the interim periods. The unit value of U.S. shipments of pure magnesium increased *** percent from 1988 to 1989, decreased *** percent from 1989 to 1990, and decreased *** percent during the interim periods.

Intracompany transfers of pure magnesium represented *** percent of U.S. producers' domestic shipments in 1988, *** percent in 1989, *** percent in 1990, *** percent during January-June 1990, and *** percent during January-June 1991.[38]

Export shipments of pure magnesium represented *** percent of total U.S. producers' shipments in 1988, *** percent in 1989, *** percent in 1990, *** percent during January-June 1990, and *** percent during January-June 1991.

Magnesium Alloys

Data for U.S. producers' shipments of magnesium alloys are also presented in table 11 and figure 7. According to data collected from the Commission's questionnaires, U.S. shipments of magnesium alloys by U.S. producers *** percent in quantity from 1988 to 1989, *** percent from 1989 to 1990, and *** percent during the interim periods. The value of U.S. domestic shipments of magnesium alloys *** percent from 1988 to 1989, *** percent from 1989 to 1990, and *** percent during the interim periods. The unit value of U.S. shipments of magnesium alloys *** percent from 1988 to 1989, *** percent from 1989 to 1990, and *** percent during the interim periods.

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[38] ***.

Table 11
Pure and alloy magnesium: Shipments of U.S. producers, by types of magnesium, 1988-90, January-June 1990, and January-June 1991

Item	1988	1989	1990	January-June— 1990	January-June— 1991
	Quantity (metric tons)				
Pure magnesium:					
Company transfers	***	***	***	***	***
Domestic shipments	***	***	***	***	***
U.S. shipments	***	***	***	***	***
Exports	***	***	***	***	***
Total	***	***	***	***	***
Magnesium alloy:					
Company transfers	***	***	***	***	***
Domestic shipments	***	***	***	***	***
U.S. shipments	***	***	***	***	***
Exports	***	***	***	***	***
Total	***	***	***	***	***
	Value (1,000 dollars)				
Pure magnesium:					
Company transfers	***	***	***	***	***
Domestic shipments	***	***	***	***	***
U.S. shipments	***	***	***	***	***
Exports	***	***	***	***	***
Total	***	***	***	***	***
Magnesium alloy:					
Company transfers	***	***	***	***	***
Domestic shipments	***	***	***	***	***
U.S. shipments	***	***	***	***	***
Exports	***	***	***	***	***
Total	***	***	***	***	***

See source at end of table.

Table 11—*Continued*
Pure and alloy magnesium: Shipments of U.S. producers, by types of magnesium, 1988-90, January-June 1990, and January-June 1991

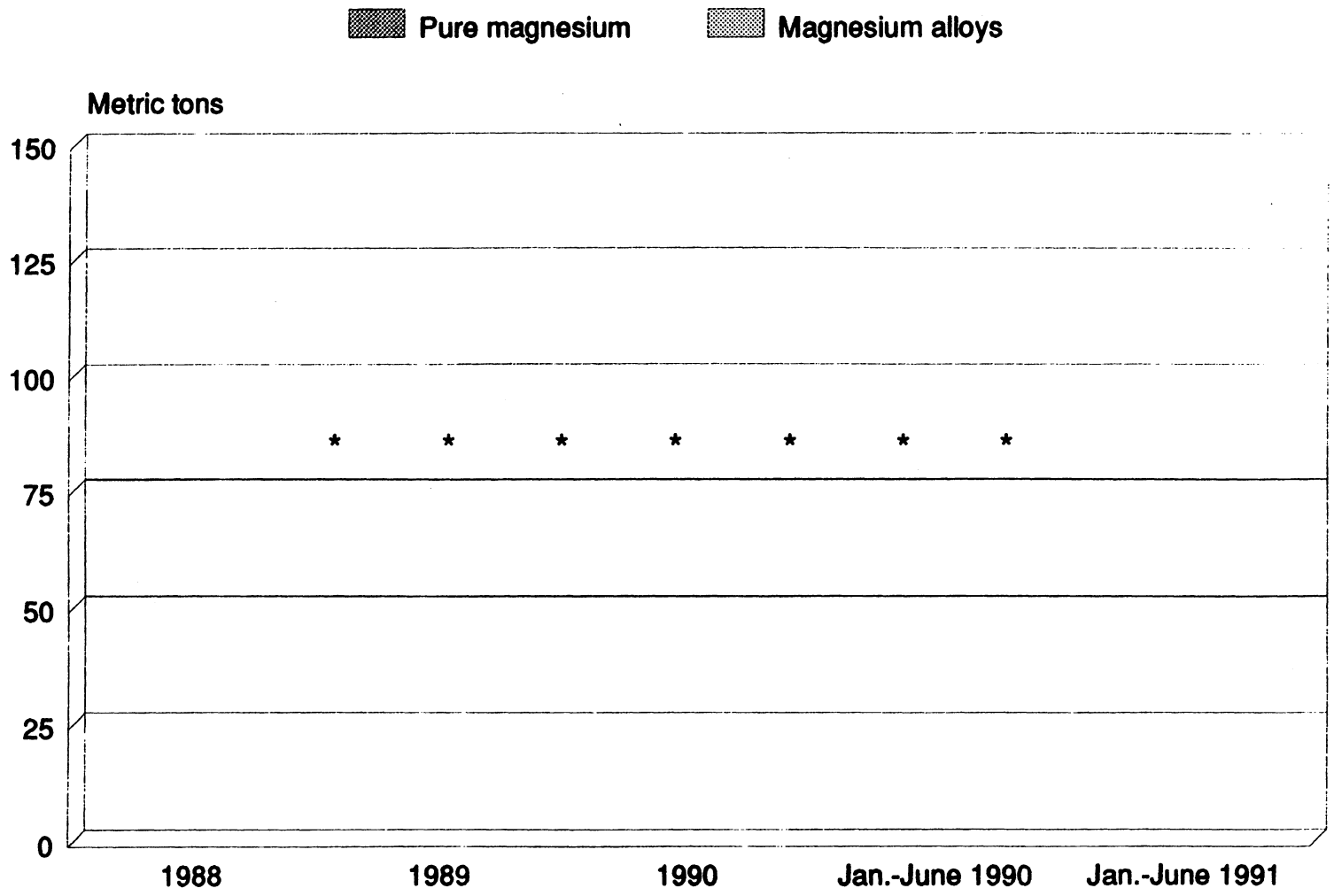
Item	1988	1989	1990	January-June— 1990	1991
	Unit value (per pound)				
Pure magnesium:					
Company transfers	***	***	***	***	***
Domestic shipments	***	***	***	***	***
U.S. shipments	***	***	***	***	***
Exports	***	***	***	***	***
Average	***	***	***	***	***
Magnesium alloy:					
Company transfers	***	***	***	***	***
Domestic shipments	***	***	***	***	***
U.S. shipments	***	***	***	***	***
Exports	***	***	***	***	***
Average	***	***	***	***	***

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Export shipments of magnesium alloys represented *** percent of total U.S. producers' shipments in 1988, *** percent in 1989, *** percent in 1990, *** percent during January-June 1990, and *** percent during January-June 1991.

Figure 7

Primary magnesium: U.S. producers' shipments, 1988-90, January-June 1990, and January-June 1991



Source: Table 11.

U.S. Producers' Inventories

Data for U.S. producers' inventories of primary magnesium are presented in table 12. According to data collected from the Commission's questionnaires, end-of-period inventories of primary magnesium (pure and alloys) increased 13.5 percent from 1988 to 1989, increased 27.9 percent from 1989 to 1990, and increased 0.7 percent during the interim periods.

End-of-period inventories of primary magnesium as a share of U.S. shipments increased throughout the period of investigation—from 22.4 percent in 1988 to 24.9 percent in 1989 and 36.5 percent in 1990; and from 60.1 percent during January-June 1990, to 70.4 percent during January-June 1991.

Table 12
Primary magnesium: U.S. producers' end-of-period inventories, by types, 1988-90, January-June 1990, and January-June 1991

Item	1988	1989	1990	January-June— 1990	January-June— 1991
	Quantity (metric tons)				
End-of-period inventories:					
Pure magnesium	***	***	***	***	***
Magnesium alloys	***	***	***	***	***
Total	19,049	21,604	27,649	24,043	24,214
	Ratio of total inventories to— (percent)[1]				
Production	13.7	14.4	19.8	16.6	18.9
U.S. shipments[1]	19.9	22.2	31.4	26.0	29.8
Total shipments	***	***	***	***	***

[1] Ratios for the January-June periods are computed from annualized production and shipments.
[2] U.S. shipments equals company transfers plus domestic market shipments.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

U.S. Employment, Wages, Compensation, and Productivity

Data for employment, wages, total compensation, and productivity are presented in table 13. According to data collected from the Commission's questionnaires,[39] the number of production and related workers (PRWs) producing primary magnesium (both pure and alloy) increased 4.2 percent from 1988 to 1989, decreased 1.2 percent from 1989 to 1990, and decreased 4.7 percent during the interim periods. The number of hours worked by PRWs producing primary magnesium increased 5.6 percent from 1988 to 1989, decreased 1.4 percent from 1989 to 1990, and decreased 8.6 percent during the interim periods.

Wages paid to PRWs increased 10.0 percent from 1988 to 1989 and 2.4 percent from 1989 to 1990 but decreased 2.5 percent during the interim periods. Hourly wages paid to PRWs increased 4.2 percent from 1988 to 1989, 3.8 percent from 1989 to 1990, and 6.7 percent during the interim periods.

Total compensation paid to PRWs increased 14.0 percent from 1988 to 1989 and 5.1 percent from 1989 to 1990 but decreased 4.0 percent during the interim periods. Hourly total compensation paid to PRWs increased 8.0 percent from 1988 to 1989, 6.5 percent from 1989 to 1990, and 5.1 percent during the interim periods.

Productivity (metric tons per hour) increased 1.4 percent from 1988 to 1989, decreased 5.5 percent from 1989 to 1990, and decreased 2.9 percent during the interim periods. Unit labor costs increased 6.3 percent from 1988 to 1989, 12.8 percent from 1989 to 1990, and 8.4 percent during the interim periods.

Magcorp's primary and alloy magnesium production employees are members of the United Steelworkers of America, Local 8319. ***.

Dow Chemical's production employees are members of the International Union of Operating Engineers, Local 564. ***.

Northwest Alloys indicated that its production and related workers are not union affiliated. ***.

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[39] The Commission requested that U.S. producers provide separate employment, wages, and total compensation data for workers producing pure and alloy magnesium. However, since the same workers produce both products, data presented in this section are based on total workers producing primary magnesium.

Table 13
Average number of production and related workers (PRWs) producing primary magnesium, hours worked,[1] wages and total compensation paid to such employees, hourly wages and total compensation paid, productivity, and unit labor costs, 1988-90, January-June 1990, and January-June 1991[2]

Item	1988	1989	1990	January-June— 1990	January-June— 1991
Average number of PRWs	1,671	1,742	1,721	1,736	1,655
Hours worked (1,000 hours)	2,867	3,027	2,986	1,516	1,385
Wages paid ($1,000)	48,411	53,241	54,514	27,200	26,510
Total compensation paid ($1,000)	55,896	63,739	66,959	33,507	32,171
Hourly wages paid	$16.89	$17.59	$18.26	$17.94	$19.14
Hourly total compensation paid	$19.50	$21.06	$22.42	$22.10	$23.23
Productivity (metric tons per hour)	48.7	49.4	46.7	47.7	46.3
Unit labor costs[3] (per metric ton)	$400.66	$425.85	$480.19	$463.10	$502.06

[1] Includes hours worked plus hours of paid leave time.
[2] Firms providing employment data accounted for 100.0 percent of reported total U.S. shipments (based on quantity) in 1990.
[3] On the basis of total compensation paid.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Financial Experience of U.S. Producers

U.S. producers of pure magnesium, magnesium alloys, and/or secondary magnesium provided financial data on their operations as shown in the following tabulation:

U.S. producer	Pure magnesium	Magnesium alloys	Secondary magnesium
Dow Chemical ...	Yes	Yes	No[1]
Magcorp	Yes	Yes	No[1]
Northwest Alloys ..	Yes	No[1]	No[1]
Imco	No[1]	No[1]	Yes

[1] Does not produce.

The above companies account for ***.

These four producers have *** product costs. Therefore, presentation of data in the aggregate may mask important differences. Accordingly, profit-and-loss and manufacturing cost[40] data for each producer are presented separately as well as in the aggregate.

All of Dow Chemical's, Northwest's, and Magcorp's ***.

[40] Manufacturing costs are similar to but not the same as cost of sales. They are the actual costs incurred during a period to produce goods for sale, and consist of three components—direct materials, direct labor, and factory overhead. Factory overhead typically consists of many cost items, but here it is subdivided into the four major components associated with magnesium production—energy, supplies/maintenance, indirect labor, and other. Most manufacturers track these costs closely, since they directly affect profitability.

Manufacturing costs plus beginning finished goods inventory minus ending finished goods inventory yield cost of sales. Therefore, unit production costs will approximate unit cost of sales unless there are significant differences between unit production costs and beginning inventory unit cost of sales.

Overall Establishment Operations

Data on the overall establishment operations of the four U.S. producers are presented company by company in tables 14 through 16, and in the aggregate in table 17.

Dow Chemical, ***, has a plant in Freeport, TX, that produces only magnesium. The plant pumps in water from the Gulf of Mexico to use as its source of magnesium. ***.

As shown in table 14, Dow Chemical's establishment operations ***.

Magcorp's overall establishment financial data are shown in table 15. ***.

At that time, ***.

Magcorp's ***.[41]

Northwest Alloy ***.

ALCOA ***.

Northwest's operating results are shown in table 16. The firm's trends ***.[42]

Perhaps the most striking aspect ***.

[41] Net sales, gross profit, operating income, and net income.

[42] In this section, unit (as in unit sales value, unit cost of sales, etc.) means dollars per pound.

Table 14
Income-and-loss experience of Dow Chemical[1] on the overall operations of its establishment wherein pure magnesium and magnesium alloys are produced, fiscal years 1988-90, January-June 1990, and January-June 1991

Item	1988	1989	1990	January-June— 1990	January-June— 1991
	Value (1,000 dollars)				
Net sales	***	***	***	***	***
Cost of goods sold	***	***	***	***	***
Gross profit	***	***	***	***	***
SG&A[2]	***	***	***	***	***
Operating income	***	***	***	***	***
Interest expense	***	***	***	***	***
Other income, net	***	***	***	***	***
Net income before taxes	***	***	***	***	***
Depreciation and amortization	***	***	***	***	***
Cash flow[3]	***	***	***	***	***
	Ratio to net sales (percent)				
Cost of goods sold	***	***	***	***	***
Gross profit	***	***	***	***	***
SG&A[2]	***	***	***	***	***
Operating income	***	***	***	***	***
Net income before taxes	***	***	***	***	***

[1] Dow Chemical's fiscal year ends ***.
[2] Selling, general, and administrative expenses.
[3] Cash flow is defined as net income or loss plus depreciation and amortization.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 15
Income-and-loss experience of Magcorp's[1] on the overall operations of its establishment wherein pure magnesium and magnesium alloys are produced, fiscal years 1988-90, January-June 1990, and January-June 1991

Item	1988	1989	1990	January-June— 1990	January-June— 1991
	Value (1,000 dollars)				
Net sales	***	***	***	***	***
Cost of goods sold	***	***	***	***	***
Gross profit	***	***	***	***	***
SG&A[2]	***	***	***	***	***
Operating income	***	***	***	***	***
Interest expense	***	***	***	***	***
Other income, net	***	***	***	***	***
Net income before taxes	***	***	***	***	***
Depreciation and amortization	***	***	***	***	***
Cash flow[3]	***	***	***	***	***
	Ratio to net sales (percent)				
Cost of goods sold	***	***	***	***	***
Gross profit	***	***	***	***	***
SG&A[2]	***	***	***	***	***
Operating income	***	***	***	***	***
Net income before taxes	***	***	***	***	***

[1] Magcorp's fiscal year ends ***.
[2] Selling, general, and administrative expenses.
[3] Cash flow is defined as net income or loss plus depreciation and amortization.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 16
Income-and-loss experience of Northwest Alloys[1] on the overall operations of its establishment wherein pure magnesium is produced, fiscal years 1988-90, January-June 1990, and January-June 1991

Item	1988	1989	1990	January-June— 1990	January-June— 1991
	Value (1,000 dollars)				
Net sales	***	***	***	***	***
Cost of goods sold	***	***	***	***	***
Gross profit	***	***	***	***	***
SG&A[2]	***	***	***	***	***
Operating income	***	***	***	***	***
Interest expense	***	***	***	***	***
Other income, net	***	***	***	***	***
Net income before taxes	***	***	***	***	***
Depreciation and amortization	***	***	***	***	***
Cash flow[3]	***	***	***	***	***
	Ratio to net sales (percent)				
Cost of goods sold	***	***	***	***	***
Gross profit	***	***	***	***	***
SG&A[2]	***	***	***	***	***
Operating income	***	***	***	***	***
Net income before taxes	***	***	***	***	***

[1] Northwest Alloys' fiscal year ends ***.
[2] Selling, general, and administrative expenses.
[3] Cash flow is defined as net income or loss plus depreciation and amortization.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 17
Income-and-loss experience of U.S. producers[1] on the overall operations of their establishments wherein pure magnesium and magnesium alloys are produced, fiscal years 1988-90, January-June 1990, and January-June 1991

Item	1988	1989	1990	January-June— 1990	January-June— 1991
	Value (1,000 dollars)				
Net sales	•••	•••	•••	•••	•••
Cost of goods sold	•••	•••	•••	•••	•••
Gross profit	•••	•••	•••	•••	•••
SG&A[2]	•••	•••	•••	•••	•••
Operating income	•••	•••	•••	•••	•••
Interest expense	•••	•••	•••	•••	•••
Other income, net	•••	•••	•••	•••	•••
Net income before taxes	•••	•••	•••	•••	•••
Depreciation and amortization	•••	•••	•••	•••	•••
Cash flow[3]	•••	•••	•••	•••	•••
	Ratio to net sales (percent)				
Cost of goods sold	•••	•••	•••	•••	•••
Gross profit	•••	•••	•••	•••	•••
SG&A[2]	•••	•••	•••	•••	•••
Operating income	•••	•••	•••	•••	•••
Net income before taxes	•••	•••	•••	•••	•••
	Number of firms reporting				
Operating losses	•••	•••	•••	•••	•••
Net losses	•••	•••	•••	•••	•••
Data	•••	•••	•••	•••	•••

[1] The producers are Dow Chemical, Magcorp, and Northwest Alloys.
[2] Selling, general, and administrative expenses.
[3] Cash flow is defined as net income or loss plus depreciation and amortization.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Operations on Pure Magnesium

Dow Chemical is the ***.

Dow Chemical's 1988 gross profits (table 18), operating income, and net income ***.

In 1990, ***.

Dow Chemical's manufacturing costs (table 19) had *** costly item.

Other factory overhead consists of variances,[43] depreciation, insurance, and internal warehousing and distribution. ***.

The results of Magcorp's pure magnesium operations are shown in table 20.

***.

The picture is clear, ***.

Magcorp's manufacturing costs are shown in table 21. The total costs ***.

Magcorp's direct materials costs ***.

The financial results of Northwest's pure magnesium operations, ***, are shown in table 16. Northwest's 1989 financial results were ***.

Other expenses consist of ***.

While some of Northwest's manufacturing costs (table 22) ***.

***.

[43] Manufacturing companies typically have a "standard" per unit cost for each item produced. Variances are the differences between these standard costs and actual costs.

Table 18
Income-and-loss experience of Dow Chemical on its operations producing pure magnesium, fiscal years 1988-90, January-June 1990, and January-June 1991

Item	1988	1989	1990	January-June 1990	January-June 1991
	Quantity (metric tons)				
Net sales	***	***	***	***	***
	Value (1,000 dollars)				
Net sales	***	***	***	***	***
Cost of goods sold	***	***	***	***	***
Gross profit	***	***	***	***	***
SG&A[1]	***	***	***	***	***
Operating income	***	***	***	***	***
Interest expense	***	***	***	***	***
Other income, net	***	***	***	***	***
Net income before taxes	***	***	***	***	***
Depreciation and amortization	***	***	***	***	***
Cash flow[2]	***	***	***	***	***
	Value (dollars per pound)				
Net sales	***	***	***	***	***
Cost of goods sold	***	***	***	***	***
Gross profit	***	***	***	***	***
SG&A[1]	***	***	***	***	***
Operating income	***	***	***	***	***
	Ratio to net sales (percent)				
Cost of goods sold	***	***	***	***	***
Gross profit	***	***	***	***	***
SG&A[1]	***	***	***	***	***
Operating income	***	***	***	***	***
Net income before taxes	***	***	***	***	***

[1] Selling, general, and administrative expenses.
[2] Cash flow is defined as net income or loss plus depreciation and amortization.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 19
Dow Chemical's per-unit manufacturing costs on its operations producing pure magnesium, fiscal years 1988-90, January-June 1990, and January-June 1991

Item	1988	1989	1990	January-June— 1990	1991
	Quantity (metric tons)				
Production	***	***	***	***	***
	Cost (per pound)				
Direct materials	***	***	***	***	***
Direct labor	***	***	***	***	***
Factory overhead:	***	***	***	***	***
Indirect labor	***	***	***	***	***
Energy costs	***	***	***	***	***
Supplies/maintenance cost	***	***	***	***	***
Other	***	***	***	***	***
Subtotal	***	***	***	***	***
Total costs	***	***	***	***	***
	Percent of total cost				
Direct materials	***	***	***	***	***
Direct labor	***	***	***	***	***
Factory overhead:	***	***	***	***	***
Indirect labor	***	***	***	***	***
Energy costs	***	***	***	***	***
Supplies/maintenance cost	***	***	***	***	***
Other	***	***	***	***	***
Subtotal	***	***	***	***	***
Total costs	100.0	100.0	100.0	100.0	100.0

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 20
Income-and-loss experience of Magcorp on its operations producing pure magnesium, fiscal years 1988-90, January-June 1990, and January-June 1991

Item	1988	1989	1990	January-June 1990	January-June 1991
	Quantity (metric tons)				
Net sales	***	***	***	***	***
	Value (1,000 dollars)				
Net sales	***	***	***	***	***
Cost of goods sold	***	***	***	***	***
Gross profit	***	***	***	***	***
SG&A[1]	***	***	***	***	***
Operating income	***	***	***	***	***
Interest expense	***	***	***	***	***
Other income, net	***	***	***	***	***
Net income before taxes	***	***	***	***	***
Depreciation and amortization	***	***	***	***	***
Cash flow[2]	***	***	***	***	***
	Value (dollars per pound)				
Net sales	***	***	***	***	***
Cost of goods sold	***	***	***	***	***
Gross profit	***	***	***	***	***
SG&A[1]	***	***	***	***	***
Operating income	***	***	***	***	***
	Ratio to net sales (percent)				
Cost of goods sold	***	***	***	***	***
Gross profit	***	***	***	***	***
SG&A[1]	***	***	***	***	***
Operating income	***	***	***	***	***
Net income before taxes	***	***	***	***	***

[1] Selling, general, and administrative expenses.
[2] Cash flow is defined as net income or loss plus depreciation and amortization.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 21
Magcorp's per-unit manufacturing costs on its operations producing pure magnesium, fiscal years 1988-90, January-June 1990, and January-June 1991

Item	1988	1989	1990	January-June 1990	January-June 1991
	Quantity (metric tons)				
Production	***	***	***	***	***
	Cost (per pound)				
Direct materials	***	***	***	***	***
Direct labor	***	***	***	***	***
Factory overhead:	***	***	***	***	***
Indirect labor	***	***	***	***	***
Energy costs	***	***	***	***	***
Supplies/maintenance cost	***	***	***	***	***
Other	***	***	***	***	***
Subtotal	***	***	***	***	***
Total costs	***	***	***	***	***
	Percent of total cost				
Direct materials	***	***	***	***	***
Direct labor	***	***	***	***	***
Factory overhead:	***	***	***	***	***
Indirect labor	***	***	***	***	***
Energy costs	***	***	***	***	***
Supplies/maintenance cost	***	***	***	***	***
Other	***	***	***	***	***
Subtotal	***	***	***	***	***
Total costs	100.0	100.0	100.0	100.0	100.0

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 22
Northwest Alloy's per-unit manufacturing costs on its operations producing pure magnesium, fiscal years 1988-90, January-June 1990, and January-June 1991

Item	1988	1989	1990	January-June— 1990	1991
	Quantity (metric tons)				
Production	***	***	***	***	***
	Cost (per pound)				
Direct materials	***	***	***	***	***
Direct labor	***	***	***	***	***
Factory overhead:	***	***	***	***	***
Indirect labor	***	***	***	***	***
Energy costs	***	***	***	***	***
Supplies/maintenance cost	***	***	***	***	***
Other	***	***	***	***	***
Subtotal	***	***	***	***	***
Total costs	***	***	***	***	***
	Percent of total cost				
Direct materials	***	***	***	***	***
Direct labor	***	***	***	***	***
Factory overhead:	***	***	***	***	***
Indirect labor	***	***	***	***	***
Energy costs	***	***	***	***	***
Supplies/maintenance cost	***	***	***	***	***
Other	***	***	***	***	***
Subtotal	***	***	***	***	***
Total costs	100.0	100.0	100.0	100.0	100.0

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Aggregate profit-and-loss data for the three producers of pure magnesium are presented in table 23.

Operations on Magnesium Alloys

Dow Chemical is the ***. Dow Chemical's operations on alloys (table 24), *** levels.

Dow Chemical's manufacturing costs for magnesium alloys (table 25) and pure magnesium are ***.

***.

Magcorp is the other U.S. producer of magnesium alloys. Net sales (table 26) ***.

Operating income ***.

Magcorp's manufacturing costs for its magnesium alloy operations are shown in table 27. These costs ***.

Aggregate profit-and-loss data for the two producers of magnesium alloys are presented in table 28.

Operations on Secondary Magnesium

Data on U.S. producers' production of secondary magnesium are presented in Appendix D.

Investment in Productive Facilities and Return on Assets

Data on investment in productive facilities and return on assets are shown in table 29. The ***.

Table 23
Income-and-loss experience of U.S. producers[1] on their operations producing pure magnesium, fiscal years 1988-90, January-June 1990, and January-June 1991

Item	1988	1989	1990	January-June— 1990	January-June— 1991
	Value (1,000 dollars)				
Net sales	***	***	***	***	***
Cost of goods sold	***	***	***	***	***
Gross profit	***	***	***	***	***
SG&A[2]	***	***	***	***	***
Operating income	***	***	***	***	***
Interest expense	***	***	***	***	***
Other income, net	***	***	***	***	***
Net income before taxes	***	***	***	***	***
Depreciation and amortization	***	***	***	***	***
Cash flow[3]	***	***	***	***	***
	Ratio to net sales (percent)				
Cost of goods sold	***	***	***	***	***
Gross profit	***	***	***	***	***
SG&A[2]	***	***	***	***	***
Operating income	***	***	***	***	***
Net income before taxes	***	***	***	***	***
	Number of firms reporting				
Operating losses	***	***	***	***	***
Net losses	***	***	***	***	***
Data	***	***	***	***	***

[1] The producers are Dow Chemical, Magcorp, and Northwest Alloys.
[2] Selling, general, and administrative expenses.
[3] Cash flow is defined as net income or loss plus depreciation and amortization.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 24
Income-and-loss experience of Dow Chemical on its operations producing magnesium alloys, fiscal years 1988-90, January-June 1990, and January-June 1991

Item	1988	1989	1990	January-June— 1990	January-June— 1991
	Quantity (metric tons)				
Net sales	***	***	***	***	***
	Value (1,000 dollars)				
Net sales	***	***	***	***	***
Cost of goods sold	***	***	***	***	***
Gross profit	***	***	***	***	***
SG&A[1]	***	***	***	***	***
Operating income	***	***	***	***	***
Interest expense	***	***	***	***	***
Other income, net	***	***	***	***	***
Net income before taxes	***	***	***	***	***
Depreciation and amortization	***	***	***	***	***
Cash flow[2]	***	***	***	***	***
	Value (dollars per pound)				
Net sales	***	***	***	***	***
Cost of goods sold	***	***	***	***	***
Gross profit	***	***	***	***	***
SG&A[1]	***	***	***	***	***
Operating income	***	***	***	***	***
	Ratio to net sales (percent)				
Cost of goods sold	***	***	***	***	***
Gross profit	***	***	***	***	***
SG&A[1]	***	***	***	***	***
Operating income	***	***	***	***	***
Net income before taxes	***	***	***	***	***

[1] Selling, general, and administrative expenses.
[2] Cash flow is defined as net income or loss plus depreciation and amortization.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 25
Dow Chemical's per-unit manufacturing costs on its operations producing magnesium alloys, fiscal years 1988-90, January-June 1990, and January-June 1991

Item	1988	1989	1990	January-June— 1990	1991
	Quantity (metric tons)				
Production	***	***	***	***	***
	Cost (per pound)				
Direct materials	***	***	***	***	***
Direct labor	***	***	***	***	***
Factory overhead:	***	***	***	***	***
Indirect labor	***	***	***	***	***
Energy costs	***	***	***	***	***
Supplies/maintenance cost	***	***	***	***	***
Other	***	***	***	***	***
Subtotal	***	***	***	***	***
Total costs	***	***	***	***	***
	Percent of total cost				
Direct materials	***	***	***	***	***
Direct labor	***	***	***	***	***
Factory overhead:	***	***	***	***	***
Indirect labor	***	***	***	***	***
Energy costs	***	***	***	***	***
Supplies/maintenance cost	***	***	***	***	***
Other	***	***	***	***	***
Subtotal	***	***	***	***	***
Total costs	100.0	100.0	100.0	100.0	100.0

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 26
Income-and-loss experience of Magcorp on its operations producing magnesium alloys, fiscal years 1988-90, January-June 1990, and January-June 1991

Item	1988	1989	1990	January-June— 1990	1991
	Quantity (metric tons)				
Net sales	***	***	***	***	***
	Value (1,000 dollars)				
Net sales	***	***	***	***	***
Cost of goods sold	***	***	***	***	***
Gross profit	***	***	***	***	***
SG&A[1]	***	***	***	***	***
Operating income	***	***	***	***	***
Interest expense	***	***	***	***	***
Other income, net	***	***	***	***	***
Net income before taxes	***	***	***	***	***
Depreciation and amortization	***	***	***	***	***
Cash flow[2]	***	***	***	***	***
	Value (dollars per pound)				
Net sales	***	***	***	***	***
Cost of goods sold	***	***	***	***	***
Gross profit	***	***	***	***	***
SG&A[1]	***	***	***	***	***
Operating income	***	***	***	***	***
	Ratio to net sales (percent)				
Cost of goods sold	***	***	***	***	***
Gross profit	***	***	***	***	***
SG&A[1]	***	***	***	***	***
Operating income	***	***	***	***	***
Net income before taxes	***	***	***	***	***

[1] Selling, general, and administrative expenses.
[2] Cash flow is defined as net income or loss plus depreciation and amortization.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 27
Magcorp's per-unit manufacturing costs on its operations producing magnesium alloys, fiscal years 1988-90, January-June 1990, and January-June 1991

Item	1988	1989	1990	January-June 1990	January-June 1991
	Quantity (metric tons)				
Production	***	***	***	***	***
	Cost (per pound)				
Direct materials	***	***	***	***	***
Direct labor	***	***	***	***	***
Factory overhead:	***	***	***	***	***
Indirect labor	***	***	***	***	***
Energy costs	***	***	***	***	***
Supplies/maintenance cost	***	***	***	***	***
Other	***	***	***	***	***
Subtotal	***	***	***	***	***
Total costs	***	***	***	***	***
	Percent of total cost				
Direct materials	***	***	***	***	***
Direct labor	***	***	***	***	***
Factory overhead:	***	***	***	***	***
Indirect labor	***	***	***	***	***
Energy costs	***	***	***	***	***
Supplies/maintenance cost	***	***	***	***	***
Other	***	***	***	***	***
Subtotal	***	***	***	***	***
Total costs	100.0	100.0	100.0	100.0	100.0

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 28
Income-and-loss experience of U.S. producers[1] on their operations producing magnesium alloys, fiscal years 1988-90, January-June 1990, and January-June 1991

Item	1988	1989	1990	January-June 1990	January-June 1991
	Value (1,000 dollars)				
Net sales	***	***	***	***	***
Cost of goods sold	***	***	***	***	***
Gross profit	***	***	***	***	***
SG&A[2]	***	***	***	***	***
Operating income	***	***	***	***	***
Interest expense	***	***	***	***	***
Other income, net	***	***	***	***	***
Net income before taxes	***	***	***	***	***
Depreciation and amortization	***	***	***	***	***
Cash flow[3]	***	***	***	***	***
	Ratio to net sales (percent)				
Cost of goods sold	***	***	***	***	***
Gross profit	***	***	***	***	***
SG&A[2]	***	***	***	***	***
Operating income	***	***	***	***	***
Net income before taxes	***	***	***	***	***
	Number of firms reporting				
Operating losses	***	***	***	***	***
Net losses	***	***	***	***	***
Data	***	***	***	***	***

[1] The producers are ***.
[2] Selling, general, and administrative expenses.
[3] Cash flow is defined as net income or loss plus depreciation and amortization.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 29
Value of assets and return on assets of U.S producers' establishments wherein pure magnesium and magnesium alloys are produced, fiscal years 1988-90, January-June 1990, and January-June 1991

Item	1988	1989	1990	January-June— 1990	January-June— 1991
	Value (1,000 dollars)				
All products:					
Fixed assets:					
Original cost	***	***	***	***	***
Book value	***	***	***	***	***
Total assets[1]	***	***	***	***	***
Secondary magnesium:					
Fixed assets:					
Original cost	***	***	***	***	***
Book value	***	***	***	***	***
Total assets[2]	***	***	***	***	***
	Return on book value of fixed assets (percent)[3]				
Secondary magnesium:					
Operating return[4]	***	***	***	***	***
Net return[5]	***	***	***	***	***
	Return on total assets (percent)[3]				
Secondary magnesium:					
Operating return[4]	***	***	***	***	***
Net return[5]	***	***	***	***	***

[1] Defined as book value of fixed assets plus current and noncurrent assets.
[2] Defined as operating income or loss divided by asset value.
[3] Data for the partial year periods are calculated using annualized income-and-loss information.
[4] Defined as net income-or-loss divided by asset value.
[5] Total establishment assets are apportioned to product groups on the basis of the ratio of the respective book values of fixed assets.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Capital Expenditures

The capital expenditures of the three producers are shown in table 30.

Research and Development Expenses

The research and development expenditures of the three producers are shown in table 31.

Capital and Investment

The Commission requested U.S. producers to describe any actual or potential negative effects of imports of magnesium from Canada or Norway on their firms' growth, investment, ability to raise capital, and development and production efforts. Their responses are shown in appendix E.

Table 30
Capital expenditures by U.S. producers of pure magnesium and magnesium alloys, by products, fiscal years 1988-90, January-June 1990, and January-June 1991

(In 1,000 dollars)

Item	1988	1989	1990	January-June— 1990	January-June— 1991
All products:[1]					
Dow Chemical	***	***	***	***	***
Magcorp	***	***	***	***	***
Northwest Alloys	***	***	***	***	***
Total	***	***	***	***	***
Pure magnesium[2]					
Dow Chemical	***	***	***	***	***
Magcorp	***	***	***	***	***
Northwest Alloys	***	***	***	***	***
Total	***	***	***	***	***
Magnesium alloys[3]					
Dow Chemical	***	***	***	***	***
Magcorp	***	***	***	***	***
Total	***	***	***	***	***

1 ***.
2 ***.
3 ***.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 31
Research and development expenses of U.S. producers of pure magnesium and magnesium alloys, by products, fiscal years 1988-90, January-June 1990, and January-June 1991

(In 1,000 dollars)

Item	1988	1989	1990	January-June— 1990	January-June— 1991
All products:					
Dow Chemical	***	***	***	***	***
Magcorp	***	***	***	***	***
Northwest Alloys	***	***	***	***	***
Total	***	***	***	***	***
Pure magnesium					
Dow Chemical	***	***	***	***	***
Magcorp	***	***	***	***	***
Northwest Alloys	***	***	***	***	***
Total	***	***	***	***	***
Magnesium alloys					
Dow Chemical	***	***	***	***	***
Magcorp	***	***	***	***	***
Total	***	***	***	***	***

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

CONSIDERATION OF ALLEGED THREAT OF MATERIAL INJURY

Subsection 771(7)(F)(i) of the Tariff Act of 1930 (19 U.S.C. § 1677(7)(F)(i)) provides that—

> *In determining whether an industry in the United States is threatened with material injury by reason of imports (or sales for importation) of the merchandise, the Commission shall consider, among other relevant economic factors*[44]—
>
> *(I) If a subsidy is involved, such information as may be presented to it by the administering authority as to the nature of the subsidy (particularly as to whether the subsidy is an export subsidy inconsistent with the Agreement),*
>
> *(II) any increase in production capacity or existing unused capacity in the exporting country likely to result in a significant increase in imports of the merchandise to the United States,*
>
> *(III) any rapid increase in United States market penetration and the likelihood that the penetration will increase to an injurious level,*
>
> *(IV) the probability that imports of the merchandise will enter the United States at prices that will have a depressing or suppressing effect on domestic prices of the merchandise,*
>
> *(V) any substantial increase in inventories of the merchandise in the United States,*
>
> *(VI) the presence of underutilized capacity for producing the merchandise in the exporting country,*
>
> *(VII) any other demonstrable adverse trends that indicate the probability that the importation (or sale for importation) of the merchandise (whether or not it is actually being imported at the time) will be the cause of actual injury,*

---

[44] Subsection 771(7)(F)(ii) of the act (19 U.S.C. § 1677(7)(F)(ii)) provides that "Any determination by the Commission under this title that an industry in the United States is threatened with material injury shall be made on the basis of evidence that the threat of material injury is real and that actual injury is imminent. Such a determination may not be made on the basis of mere conjecture or supposition."

(VIII) the potential for product-shifting if production facilities owned or controlled by the foreign manufacturers, which can be used to produce products subject to investigation(s) under section 701 or 731 or to final orders under section 736, are also used to produce the merchandise under investigation,

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

(X) the actual and potential negative effects on the existing development and production efforts of the domestic industry, including efforts to develop a derivative or more advanced version of the like product.[45]

The available information on the nature of the subsidies found by the Department of Commerce (item (I) above) is presented in the section of this report entitled "Alleged Subsidies by the Government of Canada;" information on the volume, U.S. market penetration, and pricing of imports of the subject merchandise (items (III) and (IV) above) is presented in the section entitled "Consideration of the Causal Relationship Between Imports of the Subject Merchandise and the Alleged Material Injury"; and information on the effects of imports of the subject merchandise on U.S. producers' existing development and production efforts (item (X)) is presented in the section entitled "Consideration of Alleged Material Injury to an Industry in the United States." Following is available information on U.S. inventories of the subject products (item (V)); foreign producers' operations, including the potential for "product-shifting" (items (II), (VI), and (VIII) above); any other threat indicators, if applicable (item (VII) above); and any dumping in third-country markets.

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

U.S. Importers' Inventories

U.S. importers' end-of-period inventory data are presented in table 32. According to responses to Commission questionnaires, end-of-period inventories of primary magnesium imports from Canada were rather small. ***.[46]

Table 32
Primary magnesium: End-of-period inventories of U.S. importers, 1988-90, January-June 1990, and January-June 1991

(In metric tons)

Item	1988	1989	1990	January-June— 1990	January-June— 1991
Canada	***	***	***	***	***
Norway	***	***	***	***	***
All other sources	***	***	***	***	***
Total	***	***	***	***	***

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Ability of Foreign Producers to Generate Exports and Availability of Export Markets Other Than the United States[47]

Table 33 presents production capacity, production, capacity utilization, home-market shipments, and exports for producers of primary magnesium in Canada and Norway. There are presently two manufacturers of magnesium in Canada, Norsk

[46] Virtually all imports are shipped directly to end users. End user inventories of magnesium are not included in the inventory data presented. The Commission did not send these purchasers importers questionnaires; therefore, end-of-period inventory data are understated.

[47] The Commission also sent a telegram soliciting data from the U.S. Embassies in Ottawa and Oslo for the purpose of gathering information on the ability of foreign producers to generate exports, the availability of export markets other than the United States, and whether the subject merchandise is subject to antidumping findings or remedies in any GATT-member countries.

Table 33
Primary magnesium: Foreign production capacity, production, capacity utilization, home-market shipments, and exports, by subject countries, 1988-90, January-June 1990, January-June 1991, and projections for 1991 and 1992

(In metric tons, unless otherwise noted)

Item	1988	1989	1990	January-June— 1990	January-June— 1991	Projections— 1991	Projections— 1992
Production capacity:							
Norsk Hydro Canada	***	***	***	***	***	***	***
Timminco	***	***	***	***	***	***	***
Total, Canada	***	***	***	***	***	***	***
Norsk Hydro Norway	***	***	***	***	***	***	***
Total	***	***	***	***	***	***	***
Production:							
Norsk Hydro Canada	***	***	***	***	***	***	***
Timminco	***	***	***	***	***	***	***
Total, Canada	***	***	***	***	***	***	***
Norsk Hydro Norway	***	***	***	***	***	***	***
Total	***	***	***	***	***	***	***
Capacity utilization (percent):							
Norsk Hydro Canada	***	***	***	***	***	***	***
Timminco	***	***	***	***	***	***	***
Average, Canada	***	***	***	***	***	***	***
Norsk Hydro Norway	***	***	***	***	***	***	***
Weighted average	***	***	***	***	***	***	***
Home-market shipments:							
Norsk Hydro Canada	***	***	***	***	***	***	***
Timminco	***	***	***	***	***	***	***
Total, Canada	***	***	***	***	***	***	***
Norsk Hydro Norway	***	***	***	***	***	***	***
Total	***	***	***	***	***	***	***

See source at end of table.

Table 33—*Continued*
Primary magnesium: Foreign production capacity, production, capacity utilization, home-market shipments, and exports, by subject countries, 1988-90, January-June 1990, January-June 1991, and projections for 1991 and 1992

(In metric tons, unless otherwise noted)

Item	1988	1989	1990	January-June— 1990	January-June— 1991	Projections— 1991	Projections— 1992
Exports to the United States:							
Norsk Hydro Canada	***	***	***	***	***	***	***
Timminco	***	***	***	***	***	***	***
Total, Canada	***	***	***	***	***	***	***
Norsk Hydro Norway	***	***	***	***	***	***	***
Total	***	***	***	***	***	***	***
Exports to all other markets:							
Norsk Hydro Canada	***	***	***	***	***	***	***
Timminco	***	***	***	***	***	***	***
Total, Canada	***	***	***	***	***	***	***
Norsk Hydro Norway	***	***	***	***	***	***	***
Total	***	***	***	***	***	***	***
Ratio of U.S. exports to total shipments (percent):							
Norsk Hydro Canada	***	***	***	***	***	***	***
Timminco	***	***	***	***	***	***	***
Total, Canada	***	***	***	***	***	***	***
Norsk Hydro Norway	***	***	***	***	***	***	***
Weighted average	***	***	***	***	***	***	***

Source: Compiled from data submitted in response to a request for foreign producer information.

Hydro Canada, Inc. (Norsk Hydro Canada) and Timminco Metals (Timminco),[48] and one manufacturer of magnesium in Norway, Hydro Magnesium Norway (Norsk Hydro Norway).

Norsk Hydro Canada, Inc.

Norsk Hydro Canada, a wholly owned subsidiary of Hydro Magnesium Norway, is located in Becancour, Quebec (on the Saint Lawrence River midway between Montreal and Quebec). The plant was completed in 1989, and the first batch of magnesium was produced on November 16, 1989.[49] During 1990, production of the plant was gradually increased. ***. As of June 30, 1991, Norsk Hydro Canada had *** metric tons of pure magnesium in inventory, and *** metric tons of magnesium alloy.

In its response to a question regarding Norsk Hydro Canada's plans to add, expand, curtail, or shutdown production capacity or production, Norsk Hydro Canada stated ***.

Timminco Limited

Timminco, a wholly owned subsidiary of Timminco Limited, has a magnesium manufacturing plant in Haley, Ontario. Timminco built the first magnesium production facility in Canada, and has been producing magnesium since 1941. Timminco is a relatively small niche producer, focusing on a range of high-purity magnesium products (generally greater than 99.95 percent magnesium by weight), and a product called MAG-CAL (70 percent magnesium and 30 percent calcium) used in lead refining.

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[48] Magnesium Co. of Canada (MagCan) completed a 12,500 metric ton-per-year plant in Alberta in 1990. However, as the plant began operations, the company encountered major technical problems at the facility. The plant only produced trial batches, and never began full-scale commercial production. In April 1991, Alberta Natural Gas Co. Ltd. (ANG), the project's primary financial backer, announced that it would no longer fund the MagCan plant. ANG cited high operating costs and high interest rates as factors in its decision. Since April 1991, the MagCan plant has been idle; ANG is in the process of attempting to find new ownership for the plant. *Mineral Industry Surveys*, "Magnesium in the First Quarter 1991," U.S. Bureau of Mines, May 13, 1991.

[49] ***.

Through customs brokers, Timminco exports directly to end users in the United States. ***.

Hydro Magnesium Norway

Hydro Magnesium Norway a.s. (Norsk Hydro Norway), 51 percent owned by the Government of Norway, is a large diversified manufacturer of nonferrous metals, chemicals, and fertilizers. Norsk Hydro Norway owns Norsk Hydro Canada. According to Norsk Hydro Norway has indicated publicly that it has plans to reduce production capacity in 1992 by approximately 15,000 metric tons.

CONSIDERATION OF THE CAUSAL RELATIONSHIP BETWEEN IMPORTS OF THE SUBJECT MERCHANDISE AND THE ALLEGED MATERIAL INJURY

U.S. Imports

Data on U.S. imports have been compiled from official statistics of Commerce.[50] Table 34 and figure 8 present U.S. imports for consumption, by types of magnesium and sources, for the period under investigation.

The quantity of imports of primary magnesium from the subject countries decreased 4.6 percent from 1988 to 1989, increased 203.5 percent from 1989 to 1990, and increased 43.7 percent during the interim periods. The value of subject country imports decreased 2.8 percent from 1988 to 1989, increased 179.4 percent from 1989 to 1990, and increased 28.0 percent during the interim periods. The average unit value (dollars per pound) of subject country imports increased 1.9 percent from 1988 to 1989, decreased 7.9 percent from 1989 to 1990, and decreased 11.0 percent during the interim periods.

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[50] There are no separate data on imports of secondary magnesium. The HTS does not differentiate primary from secondary magnesium; rather subheadings are based on chemical composition. Magnesium ingots produced from scrap (secondary magnesium) that meet the chemical specifications of primary magnesium are included in primary magnesium imports.

Table 34
Primary magnesium: U.S. imports for consumption, by types of magnesium and sources, 1988-90, January-June 1990, and January-June 1991

Item	1988	1989	1990	January-June— 1990	1991
	Quantity (metric tons)				
Pure magnesium:					
Canada	731	247	14,562	4,072	7,492
Norway	2,687	3,478	1,166	294	151
Subtotal	3,418	3,725	15,728	4,366	7,643
All other sources	198	154	411	152	85
Total	3,616	3,879	16,139	4,518	7,728
Magnesium alloy:					
Canada	193	95	2,341	566	1,277
Norway	3,653	3,111	2,967	1,546	392
Subtotal	3,846	3,206	5,308	2,112	1,669
All other sources	362	289	276	162	99
Total	4,208	3,495	5,584	2,274	1,768
	Value[1] (1,000 dollars)				
Pure magnesium:					
Canada	3,119	1,065	45,669	12,865	20,278
Norway	8,639	12,302	3,919	986	427
Subtotal	11,758	13,367	49,588	13,851	20,705
All other sources	594	549	1,168	485	242
Total	12,352	13,916	50,756	14,336	20,947
Magnesium alloy:					
Canada	722	370	7,352	1,810	4,027
Norway	11,755	9,830	8,906	4,611	1,216
Subtotal	12,477	10,200	16,258	6,421	5,243
All other sources	2,087	2,583	3,158	1,822	964
Total	14,564	12,783	19,416	8,243	6,207

See footnotes at end of table.

Table 34—*Continued*
Primary magnesium: U.S. imports for consumption, by types of magnesium and sources, 1988-90, January-June 1990, and January-June 1991

Item	1988	1989	1990	January-June— 1990	January-June— 1991
	Unit value[1] (per pound)				
Pure magnesium:					
Canada	$1.94	$1.96	$1.42	$1.43	$1.23
Norway	1.46	1.61	1.52	1.52	1.28
Weighted-average	1.56	1.63	1.43	1.44	1.23
All other sources	1.36	1.62	1.29	1.45	1.29
Weighted average	**1.55**	**1.63**	**1.42**	**1.44**	**1.23**
Magnesium alloy:					
Canada	1.70	1.77	1.42	1.45	1.43
Norway	1.46	1.43	1.36	1.35	1.42
Average	1.47	1.44	1.39	1.38	1.43
All other sources	2.62	4.05	5.20	5.11	4.41
Weighted average	**1.57**	**1.66**	**1.58**	**1.65**	**1.59**

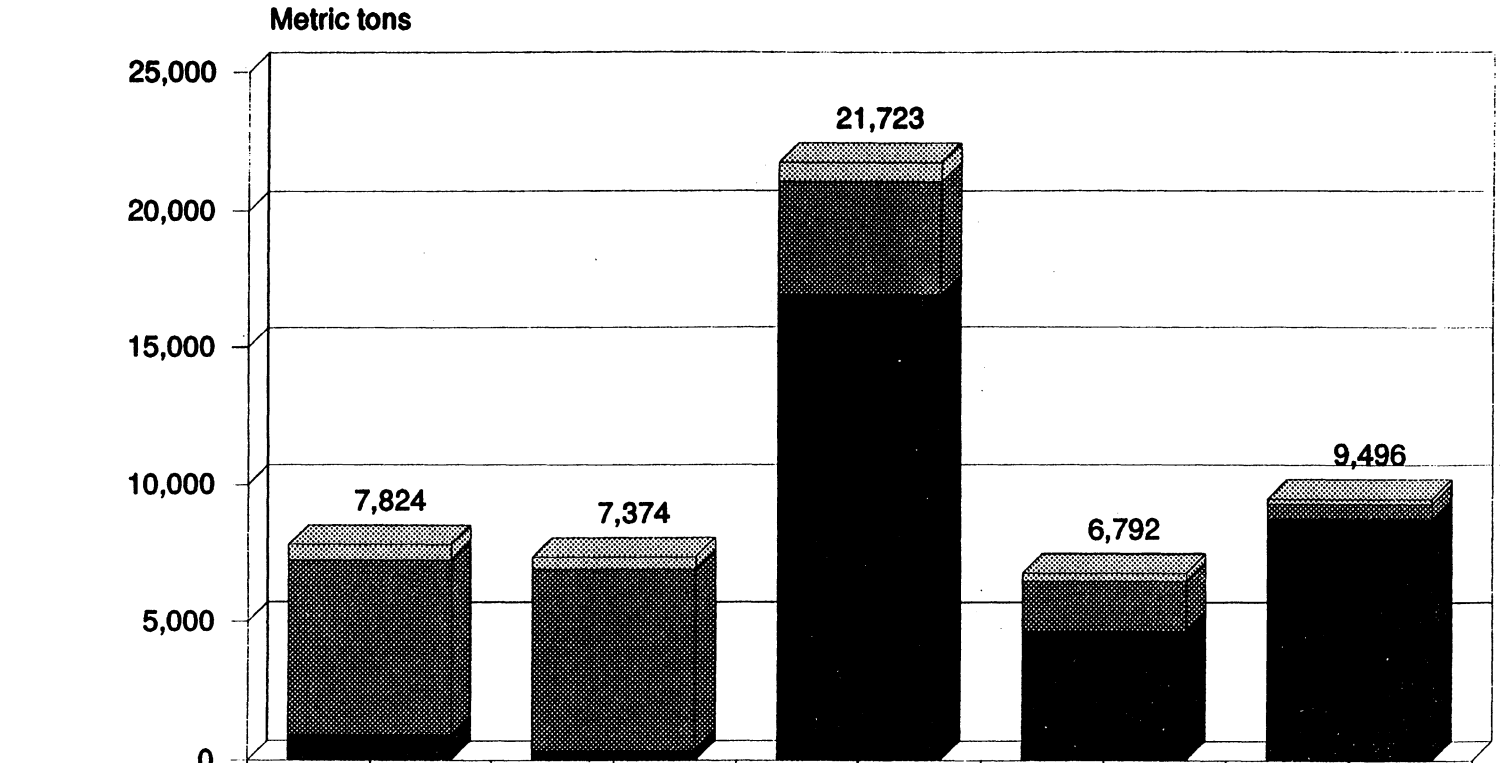
[1] Landed duty paid; magnesium alloys are measured on a gross weight basis.

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

Source: Compiled from official statistics of the U.S. Department of Commerce.

Figure 8

Primary magnesium: U.S. imports for consumption, by sources, 1988-90, Janaury-June 1990, & January-June 1991



	1988	1989	1990	Jan.-June 1990	Jan.-June 1991
All other	560	443	687	314	184
Norway	6,340	6,589	4,133	1,840	543
Canada	924	342	16,903	4,638	8,769

Source: Table 34.

Canada

The quantity of primary magnesium imports from Canada decreased 63.0 percent from 1988 to 1989, increased 4,842.4 percent from 1989 to 1990, and increased 89.1 percent during the interim periods. The value of primary magnesium imports decreased 62.6 percent from 1988 and 1989, increased 3,594.8 percent from 1989 to 1990, and increased 65.6 percent during the interim periods.

Norway

The quantity of primary magnesium imports from Norway increased 3.9 percent from 1988 to 1989, decreased 37.3 percent from 1989 to 1990, and decreased 70.5 percent during the interim periods. The value of primary magnesium imports increased 8.5 percent from 1988 and 1989, decreased 42.1 percent from 1989 to 1990, and decreased 70.6 percent during the interim periods.

U.S. Market Penetration by Imports

Market penetration ratios of imports of primary magnesium, pure magnesium, and magnesium alloys from the subject countries as a share of the quantity and value of U.S. consumption of primary and secondary magnesium are presented in tables 35 through 37. Market penetration ratios of imports of pure magnesium from the subject countries as a share of the quantity and value of U.S. consumption of pure magnesium are presented in table 36. Market penetration ratios of imports of magnesium alloys from the subject countries as a share of the quantity and value of U.S. consumption of magnesium alloys are presented in table 37.

Table 35
Primary magnesium: Apparent U.S. consumption, U.S. imports, and ratios of imports to consumption, 1988-90, January-June 1990, and January-June 1991

Item	1988	1989	1990	January-June— 1990	January-June— 1991
	Quantity (metric tons)				
Producers' U.S. shipments	95,821	97,512	88,169	46,173	40,677
U.S. imports from—					
Canada	924	342	16,903	4,638	8,769
Norway	6,340	6,589	4,133	1,840	543
Subtotal	7,264	6,931	21,036	6,478	9,312
All other sources	560	443	687	314	184
Total imports	7,824	7,374	21,723	6,792	9,496
Apparent U.S. consumption	103,645	104,886	109,892	52,965	50,173
	Value (1,000 dollars)				
Producers' U.S. shipments	303,129	320,858	277,530	148,905	112,873
U.S. imports from—					
Canada	3,841	1,435	53,021	14,675	24,305
Norway	20,394	22,132	12,825	5,597	1,643
Subtotal	24,235	23,567	65,846	20,272	25,948
All other sources	2,681	3,132	4,326	2,307	1,206
Total imports	26,916	26,699	70,172	22,579	27,154
Apparent U.S. consumption	330,045	347,557	347,702	171,484	140,027

See source at end of table.

Table 35—*Continued*
Primary magnesium: Apparent U.S. consumption, U.S. imports, and ratios of imports to consumption, 1988-90, January-June 1990, and January-June 1991

Item	1988	1989	1990	January-June— 1990	January-June— 1991
	Share of the quantity of U.S. consumption (percent)				
Producers' U.S. shipments	92.5	93.0	80.2	87.2	81.1
U.S. imports from—					
Canada	0.9	0.3	15.4	8.8	17.5
Norway	6.1	6.3	3.8	3.5	1.1
Subtotal	7.0	6.6	19.1	12.2	18.6
All other sources	0.5	0.4	0.6	0.6	0.4
Total imports	7.5	7.0	19.8	12.8	18.9
	Share of the value of U.S. consumption (percent)				
Producers' U.S. shipments	91.8	92.3	79.8	86.8	80.6
U.S. imports from—					
Canada	1.2	0.4	15.2	8.6	17.4
Norway	6.2	6.4	3.7	3.3	1.2
Subtotal	7.3	6.8	18.9	11.8	18.5
All other sources	0.8	0.9	1.2	1.3	0.9
Total imports	8.2	7.7	20.2	13.2	19.4

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission and from official statistics of the U.S. Department of Commerce.

Table 36
Pure magnesium: Apparent U.S. consumption, U.S. imports, and ratios of imports to consumption, 1988-90, January-June 1990, and January-June 1991

Item	1988	1989	1990	January-June— 1990	January-June— 1991
	Quantity (metric tons)				
Producers' U.S. shipments	***	***	***	***	***
U.S. imports from—					
Canada	731	247	14,562	4,072	7,492
Norway	2,687	3,478	1,166	294	151
Subtotal	3,418	3,725	15,728	4,366	7,643
All other sources	198	154	411	152	85
Total imports	3,616	3,879	16,139	4,518	7,728
Apparent U.S. consumption	***	***	***	***	***
	Value (1,000 dollars)				
Producers' U.S. shipments	***	***	***	***	***
U.S. imports from—					
Canada	3,119	1,065	45,669	12,865	20,278
Norway	8,639	12,302	3,919	986	427
Subtotal	11,758	13,367	49,588	13,851	20,705
All other sources	594	549	1,168	485	242
Total imports	12,352	13,916	50,756	14,336	20,947
Apparent U.S. consumption	***	***	***	***	***

See source at end of table.

Table 36—*Continued*
Pure magnesium: Apparent U.S. consumption, U.S. imports, and ratios of imports to consumption, 1988-90, January-June 1990, and January-June 1991

Item	1988	1989	1990	January-June— 1990	January-June— 1991
	Share of the quantity of U.S. consumption (percent)				
Producers' U.S. shipments	***	***	***	***	***
U.S. imports from:					
Canada	***	***	***	***	***
Norway	***	***	***	***	***
Subtotal	***	***	***	***	***
All other sources	***	***	***	***	***
Total imports	***	***	***	***	***
	Share of the value of U.S. consumption (percent)				
Producers' U.S. shipments:	***	***	***	***	***
U.S. imports from:					
Canada	***	***	***	***	***
Norway	***	***	***	***	***
Subtotal	***	***	***	***	***
All other sources	***	***	***	***	***
Total imports	***	***	***	***	***

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission and from official statistics of the U.S. Department of Commerce.

Table 37
Magnesium alloys: Apparent U.S. consumption, U.S. imports, and ratios of imports to consumption, 1988-90, January-June 1990, and January-June 1991

Item	1988	1989	1990	January-June— 1990	1991
	Quantity (metric tons)				
Producers' U.S. shipments	***	***	***	***	***
U.S. imports from—					
Canada	193	95	2,341	566	1,277
Norway	3,653	3,111	2,967	1,546	392
Subtotal	3,846	3,206	5,308	2,112	1,669
All other sources	362	289	276	162	99
Total imports	4,208	3,495	5,584	2,274	1,768
Apparent U.S. consumption	***	***	***	***	***
	Value (1,000 dollars)				
Producers' U.S. shipments	***	***	***	***	***
U.S. imports from—					
Canada	722	370	7,352	1,810	4,027
Norway	11,755	9,830	8,906	4,611	1,216
Subtotal	12,477	10,200	16,258	6,421	5,243
All other sources	2,087	2,583	3,158	1,822	964
Total imports	14,564	12,783	19,416	8,243	6,207
Apparent U.S. consumption	***	***	***	***	***

See source at end of table.

Table 37—*Continued*
Magnesium alloys: Apparent U.S. consumption, U.S. imports, and ratios of imports to consumption, 1988-90, January-June 1990, and January-June 1991

Item	1988	1989	1990	January-June— 1990	1991
	Share of the quantity of U.S. consumption (percent)				
Producers' U.S. shipments	***	***	***	***	***
U.S. imports from:					
Canada	***	***	***	***	***
Norway	***	***	***	***	***
Subtotal	***	***	***	***	***
All other sources	***	***	***	***	***
Total imports	***	***	***	***	***
	Share of the value of U.S. consumption (percent)				
Producers' U.S. shipments:	***	***	***	***	***
U.S. imports from:					
Canada	***	***	***	***	***
Norway	***	***	***	***	***
Subtotal	***	***	***	***	***
All other sources	***	***	***	***	***
Total imports	***	***	***	***	***

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission and from official statistics of the U.S. Department of Commerce.

Primary Magnesium

Subject countries

U.S. market penetration ratios based on the quantity of imports of primary magnesium from the subject countries (table 35) were 7.0 percent in 1988, 6.6 percent in 1989, 19.1 percent in 1990, 12.2 percent in January-June 1990, and 18.6 percent in January-June 1991. U.S. market penetration ratios based on the value of imports of primary magnesium from the subject countries were 7.3 percent in 1988, 6.8 percent in 1989, 18.9 percent in 1990, 11.8 percent in January-June 1990, and 18.5 percent in January-June 1991.

Canada—U.S. market penetration ratios based on the quantity of imports of primary magnesium from Canada were 0.9 percent in 1988, 0.2 percent in 1989, 15.4 percent in 1990, 8.8 percent in January-June 1990, and 17.5 percent in January-June 1991. U.S. market penetration ratios based on the value of imports of primary magnesium from Canada were 1.2 percent in 1988, 0.4 percent in 1989, 15.2 percent in 1990, 8.6 percent in January-June 1990, and 17.4 percent in January-June 1991.

Norway—U.S. market penetration ratios based on the quantity of imports of primary magnesium from Norway were 6.1 percent in 1988, 6.3 percent in 1989, 3.8 percent in 1990, 3.5 percent in January-June 1990, and 1.1 percent in January-June 1991. U.S. market penetration ratios based on the value of imports of primary magnesium from Norway were 6.2 percent in 1988, 6.4 percent in 1989, 3.7 percent in 1990, 3.3 percent in January-June 1990, and 1.2 percent in January-June 1991.

All Other Sources

U.S. market penetration ratios based on the quantity of imports of primary magnesium from all other sources were 0.5 percent in 1988, 0.4 percent in 1989, 0.6 percent in 1990, 0.6 percent in January-June 1990, and 0.4 percent in January-June 1991. U.S. market penetration ratios based on the value of imports of primary magnesium from all other sources were 0.8 percent in 1988, 0.9 percent in 1989, 1.2 percent in 1990, 1.3 percent in January-June 1990, and 0.9 percent in January-June 1991.

Pure Magnesium

Subject countries

U.S. market penetration ratios based on the quantity of imports of pure magnesium from the subject countries (table 36) were *** percent in 1988, *** percent in 1989, *** percent in 1990, *** percent in January-June 1990, and *** percent in January-June 1991. U.S. market penetration ratios based on the value of imports of pure magnesium from the subject countries were *** percent in 1988, *** percent in 1989, *** percent in 1990, *** percent in January-June 1990, and *** percent in January-June 1991.

Canada—U.S. market penetration ratios based on the quantity of imports of pure magnesium from Canada were *** percent in 1988, *** percent in 1989, *** percent in 1990, *** percent in January-June 1990, and *** percent in January-June 1991. U.S. market penetration ratios based on the value of imports of pure magnesium from Canada were *** percent in 1988, *** percent in 1989, *** percent in 1990, *** percent in January-June 1990, and *** percent in January-June 1991.

Norway—U.S. market penetration ratios based on the quantity of imports of pure magnesium from Norway were *** percent in 1988, *** percent in 1989, *** percent in 1990, *** percent in January-June 1990, and *** percent in January-June 1991. U.S. market penetration ratios based on the value of imports of pure magnesium from Norway were *** percent in 1988, *** percent in 1989, *** percent in 1990, *** percent in January-June 1990, and *** percent in January-June 1991.

All Other Sources

U.S. market penetration ratios based on the quantity of imports of pure magnesium from all other sources were *** percent in 1988, *** percent in 1989, *** percent in 1990, *** percent in January-June 1990, and *** percent in January-June 1991. U.S. market penetration ratios based on the value of imports of pure magnesium from all other sources were *** percent in 1988, *** percent in 1989, *** percent in 1990, *** percent in January-June 1990, and *** percent in January-June 1991.

Magnesium Alloys

Subject countries

U.S. market penetration ratios based on the quantity of imports of magnesium alloys from the subject countries (table 37) were *** percent in 1988, *** percent in 1989, *** percent in 1990, *** percent in January-June 1990, and *** percent in January-June 1991. U.S. market penetration ratios based on the value of imports of magnesium alloys from the subject countries were *** percent in 1988, *** percent in 1989, *** percent in 1990, *** percent in January-June 1990, and *** percent in January-June 1991.

Canada—U.S. market penetration ratios based on the quantity of imports of magnesium alloys from Canada were *** percent in 1988, *** percent in 1989, *** percent in 1990, *** percent in January-June 1990, and *** percent in January-June 1991. U.S. market penetration ratios based on the value of imports of magnesium alloys from Canada were *** percent in 1988, *** percent in 1989, *** percent in 1990, *** percent in January-June 1990, and *** percent in January-June 1991.

Norway—U.S. market penetration ratios based on the quantity of imports of magnesium alloys from Norway were *** percent in 1988, *** percent in 1989, *** percent in 1990, *** percent in January-June 1990, and *** percent in January-June 1991. U.S. market penetration ratios based on the value of imports of magnesium alloys from Norway were *** percent in 1988, *** percent in 1989, *** percent in 1990, *** percent in January-June 1990, and *** percent in January-June 1991.

All Other Sources

U.S. market penetration ratios based on the quantity of imports of magnesium alloys from all other sources were *** percent in 1988, *** percent in 1989, *** percent in 1990, *** percent in January-June 1990, and *** percent in January-June 1991. U.S. market penetration ratios based on the value of imports of magnesium alloys from all other sources were *** percent in 1988, *** percent in 1989, *** percent in 1990, *** percent in January-June 1990, and *** percent in January-June 1991.

Prices

Market Characteristics

There are two distinct end-user markets for magnesium--one for pure magnesium and another for magnesium alloys. End users who purchase pure magnesium typically do not purchase magnesium alloys and likewise those who buy magnesium alloys typically do not buy pure magnesium. Pure magnesium is sold to aluminum producers, to steel producers for desulfurization, and to chemical and pharmaceutical producers; magnesium alloys are sold mainly to diecasters.[51] Because of these different end-use markets, the demand for pure and alloy magnesium has followed slightly different trends. Whereas the demand for pure magnesium was strong in 1987 through 1989,[52] it slowed during late 1989 and during 1990; on the other hand, the demand for magnesium alloy has grown recently as automakers have increased the number of auto parts that utilize magnesium.

The different segments of the magnesium markets tend to require slightly different levels of magnesium and impurities. For example, aluminum manufacturers usually only purchase pure magnesium (of at least 99.8 percent magnesium) and they are concerned about the level of certain impurities, such as iron.[53] [54] Because of the specific requirements, pricing tends to vary slightly in the different customer groups. For example, *** reported that prices of magnesium to the aluminum manufacturers segment differs slightly from those to the steel desulfurizer powder producers. Prices in these market segments may vary because each market is affected by different factors. For example, whereas there are no substitutes for magnesium in aluminum production, calcium carbonate can be used instead of magnesium in steel desulfurization.[55] Despite these differences, prices in the various market segments tend to equalize over time.[56]

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[51] The aluminum industry uses magnesium to add strength to the aluminum, and the steel industry uses pure magnesium to reduce the sulphur content in the steel.

[52] In 1988 and 1989, there was a shortage of magnesium in the United States and prices of pure and alloy magnesium increased. *** . *** . *** .

[53] *** (staff interview with ***).

[54] Titanium and beryllium users are very sensitive to certain impurity levels; therefore, they must purchase higher grade pure magnesium.

[55] *** reported that the difference in prices is a result of the ingot configuration and the grade of the metal supplied. According to * * *, aluminum manufacturers generally require higher purity magnesium.

[56] Interview with *** , Aug. 27, 1991.

Two of the three U.S. producers of pure magnesium also produce and sell magnesium alloy.[57] Magnesium alloy is generally used exclusively by diecasters and sand casters. In the past, alloy prices have been approximately 10 percent lower than those for pure because the alloys generally contained about 90 percent magnesium. However, since the beginning of 1991, prices for magnesium alloy have actually been higher than those for pure magnesium. U.S. producers and importers agree that there is not presently an established relationship between the prices of pure magnesium and those for magnesium alloy. During the period of investigation, prices for these two products did not exhibit a specific relationship.[58] [59]

All three U.S. producers reported that differences in quality between domestic and imported magnesium are not a significant factor in their sales of magnesium. Canadian producers, on the other hand, tend to disagree. Although Norsk Hydro reported that the actual chemical composition of its magnesium is similar to that of the U.S. product, it believes that its product has other superior qualities. Norsk Hydro stated that its DC cast pure magnesium T-bars are generally considered superior to mold-cast products due to their lower melt/loss ratio, reduced physical imperfections, and reduced risk of explosion in the molten metal environment.[60] In addition, Timminco, another Canadian producer, believes that its product is superior because it has a higher amount of magnesium and lower levels of impurities.[61] Available information from purchasers indicates that pure magnesium from the United States, Canada, and Norway are all similar;[62] this is also true for magnesium alloy.

Magnesium is sold on both a spot and a contract basis. Magcorp reported that *** of its sales to aluminum manufacturers were made on a spot basis and about *** percent of those to steel producers and desulfurizers were made on a contract basis.

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[57] In the majority of cases, the end uses for pure and alloy magnesium are separate; in a small number of applications, such as steel desulfurization and aluminum extrusions, pure and alloy magnesium are substitutable.

[58] Counsel for the respondents states that the prices of alloy magnesium follow those of aluminum 380, its principal competitor (transcript, p. 74).

[59] *** .

[60] Norsk Hydro stated that no firm in the United States is currently producing this T-bar product (transcript, pp. 66 and 91).

[61] Timminco stated that although Magcorp does produce a high-grade magnesium, it believes that the quality of its product is considered superior. Timminco also reported that its high-grade product is sold at a premium and prices for this product have not declined as prices for "commodity" grade magnesium have. *** . (Transcript, pp. 110 and 139 and questionnaire response of Timminco).

[62] Transcript, p. 140, and interviews with *** .

Dow Chemical and Northwest Alloys reported using contracts ***. Dow Chemical reported that *** of its total sales are made on a contract basis.[63] Northwest Alloys reported that *** percent of its sales to aluminum makers and all sales to steel desulfurizers and to chemical manufacturers were made on a contract basis. *** reported that sales to all customers are generally on a contract basis.[64]

Contracts in this industry vary in length from less than a year to five years, with the typical contract being one to two years long.[65] These agreements contain volume requirements but do not generally fix price for the duration of the contract.[66] Prices are usually negotiated at the onset of the agreement and take into account the overall competitive pricing levels of magnesium in the U.S. market.[67] Most agreements allow for price changes during the length of the contract as market prices change and most agreements contain meet or release clauses.[68] *** .

Suppliers of magnesium have list prices for pure and alloy magnesium; however, these prices are rarely, if ever, adhered to.[69] According to Magcorp, prior to 1984, list prices were generally close to spot and contract transaction prices in the United States in most customer markets. In 1984, transaction prices departed from list prices and were generally below list prices. Since that time, prices for pure magnesium have deviated from list prices and have also varied by end-use industry.[70] Published price series for magnesium are found in *American Metals Market*; these prices are based on list prices and thus do not reflect current market transaction prices.

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[63] These customer groups include aluminum manufacturers, steel producers and desulfurizers, and diecasters.

[64] Both firms reported that there are some spot sales, but these account for a very small portion of each company's overall sales.

[65] *** .

[66] Contracts or agreements in this industry tend to be verbal and not written; however, one purchaser at the conference reported that once an agreement is made, the firm is committed to buy from a supplier (transcript, pp. 136-137).

[67] All three U.S. producers reported that the prices vary for different customer groups depending on the specific needs of the customer and the demand levels in each segment.

[68] *** .

[69] *** .

[70] Postconference brief of Magcorp, p. A-12.

Prices for both pure and alloy magnesium are quoted on a per-pound basis.[71] Suppliers reported that prices for magnesium are generally quoted on a delivered basis with the supplier arranging and paying for the freight costs. Transportation costs account for approximately 1 to 4 percent of the delivered price and are not an important factor in a customer's sourcing decision for magnesium. As a result, suppliers can and do ship magnesium throughout the continental United States. All three U.S. producers reported that *** percent or more of their total shipments are made to customers located 500 or more miles from the plant. Leadtimes for delivery for spot sales of magnesium are relatively short. Magcorp reported that *** .[72] Dow Chemical and Northwest Alloys reported *** .[73]

Price Trends

The Commission requested price and quantity data from U.S. producers, importers, and foreign producers for their spot and contract sales of magnesium during the period January 1988-June 1991. Product specifications for which pricing data were requested are as follows:

Product 1: Pure magnesium ingots containing no less than 99.8 percent magnesium

Product 2: Magnesium diecasting alloy ingots containing no more than 9 percent aluminum and 1 percent zinc [74]

These products account for the bulk of primary magnesium sold in the U.S. market. According to Magcorp, these two products probably account for at least 90 percent of the total magnesium market. Usable pricing data were received from three U.S.

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[71] In the secondary magnesium market, toll agreements are usually used. In these instances, a secondary magnesium producer will receive secondary or off-spec magnesium from a producer. The secondary manufacturer recasts the magnesium and ships it back to the original producer. The secondary magnesium producer will receive a fee for the work that was performed.

[72] *** .

[73] *** .

[74] This alloy is commonly referred to as AZ91D and is used in diecasting applications.

producers, two Canadian producers, and one Norwegian producer.[75] The domestic products for which pricing data were reported accounted for approximately *** percent of total U.S. producers' domestic shipments of magnesium during 1990. The imported products accounted for approximately *** and *** percent of U.S. imports from Canada and Norway during 1990.

Contract Sales of Pure and Alloy Magnesium

Weighted-average contract sales of U.S.-produced pure magnesium *** from January-March 1988 to July-September 1989, *** percent during that time (table 38).[76] U.S. contract prices then *** throughout the remainder of the period, *** percent. Overall, these prices were *** in April-June 1991 than in January-March 1988.

Contract prices for Canadian pure magnesium followed a similar trend, *** percent from January-March 1988 to the same quarter of 1989 before *** percent throughout the remainder of the period (table 38).[77] Overall, Canadian contract prices were *** in April-June 1991 than in January-March 1988. Contract prices for Norwegian pure magnesium *** percent from January-March 1988 to the corresponding quarter of 1989 but then *** percent in July-September 1989. Contract prices for Norwegian pure magnesium *** percent in the first quarter of 1990 but then *** percent by April-June 1991. Norwegian contract prices for pure magnesium had an overall *** of *** percent.

Contract prices for the U.S.-produced magnesium alloy AZ91D (product 2) were *** during 1988, *** percent in the first quarter of 1989, and then *** during 1989 (table 39).[78] U.S. contract prices for AZ91D *** percent in the first quarter of 1990, *** for the rest of 1990, and then *** percent in the first two quarters of 1991. Overall, contract prices for domestic AZ91D were *** in April-June 1991 as they were in January-March 1988.

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[75] Sales prices reported by Canadian and Norwegian magnesium producers are used for trend and comparison analysis. These producers sell directly to end users, and they pay the duty and freight costs. Therefore, prices from these foreign producers are directly comparable with those reported by U.S. producers for sales to end users.

[76] Prices for contract sales were reported by all three U.S. producers. *** .

[77] Prices were reported by *** .

[78] Contract prices for alloy magnesium (AZ91D) were reported by *** .

Table 38
Pure magnesium: Weighted-average delivered contract sale prices and total quantity of U.S.-produced magnesium and magnesium imported from Norway and Canada, by quarters, January 1988-June 1991

Period	United States		Norway		Canada	
	Price	Total quantity	Price	Total quantity	Price	Total quantity
	($/lb.)	(metric tons)	($/lb.)	(metric tons)	($/lb.)	(metric tons)
	*	*	*	*	*	*	*

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 39
Magnesium alloys: Weighted-average delivered contract sale prices and total quantity of U.S.-produced magnesium and magnesium imported from Norway and Canada, by quarters, January 1988-June 1991

Period	United States		Norway		Canada	
	Price	Total quantity	Price	Total quantity	Price	Total quantity
	($/lb.)	(metric tons)	($/lb.)	(metric tons)	($/lb.)	(metric tons)
*	*	*	*	*	*	*

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Contract prices for Canadian AZ91D were only reported by *** and were for 1990 and 1991.[79] These prices were *** in 1990, *** percent in the first quarter of 1991, and then *** in the second quarter of 1991. Contract prices for Norwegian AZ91D *** percent from January-March 1988 to July-September 1988. Prices *** percent in the first quarter of 1989 and *** throughout the rest of 1989. Contract prices for the Norwegian product *** percent in the first quarter of 1990, *** during 1990, before *** percent in 1991. Overall, prices for the Norwegian product were *** in April-June 1991 than in January-March 1988.

Spot Sales of Pure and Alloy Magnesium

Weighted-average prices for U.S.-produced pure magnesium (product 1) *** percent from January-March 1988 to the same quarter of 1989 (table 40). Prices *** during 1989 but then *** from October-December 1989 to April-June 1991, *** percent during that time. Overall U.S. spot prices for magnesium were *** at the end of the period than at the beginning.

Spot prices for Norwegian pure magnesium were only reported for five quarters during the period of investigation (table 40);[80] therefore, it is difficult to discuss meaningful trends. Overall, these prices were *** in October-December 1989 than in January-March 1988.

Weighted-average spot prices for U.S.-produced magnesium alloy AZ91D (product 2) *** percent from January-March 1988 to October-December 1989 but then *** percent by the end of the period (table 41). Prices for U.S.-produced AZ91D *** in April-June 1991 as in January-March 1988.

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[79] Norsk Hydro began production and small shipments in late 1989.

[80] No spot-price data were received for Canadian pure magnesium; both Timminco and Norsk Hydro reported that virtually all sales are on a contract basis. In addition, the quantities for spot sales of Norwegian magnesium (in table 40) are significantly smaller than the quantities of the U.S.-produced magnesium sold on a spot basis.

Table 40
Pure magnesium: Weighted-average delivered spot sale prices and total quantity of U.S.-produced magnesium and magnesium imported from Norway, by quarters, January 1988-June 1991

Period	United States		Norway	
	Price	Total quantity	Price	Total quantity
	($/lb.)	(metric tons)	($/lb.)	(metric tons)
* * *	*	*	*	*

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 41
Magnesium alloys: Weighted-average delivered spot sale prices and total quantity of U.S.-produced magnesium and magnesium imported from Norway and Canada, by quarters, January 1988-June 1991

Period	United States		Norway		Canada	
	Price	Total quantity	Price	Total quantity	Price	Total quantity
	($/lb.)	(metric tons)	($/lb.)	(metric tons)	($/lb.)	(metric tons)
•	•	•	•	•	•	•

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Spot prices for Canadian and Norwegian alloy AZ91D were only reported for a few quarters (table 41).[81] Prices for the Canadian alloy product *** percent from October-December 1990 to January-March 1991 but then *** percent in April-June 1991. Overall, prices for the Canadian alloy product were *** in April-June 1991 than in October-December 1990. Prices for the Norwegian AZ91D were *** but were *** in October-December 1990 than in January-March 1988.

Price Comparisons

Table 42 shows margins of underselling and overselling for pure and alloy magnesium in the spot and contract markets. In the spot market for pure magnesium, the Norwegian product undersold the domestic product in three of the five quarters in which price comparisons were possible; margins ranged from *** to *** percent. In the remaining two quarters, the Norwegian product was priced *** and *** percent above the domestic product.

In the spot market for magnesium alloy, the Norwegian product undersold the domestic product in two of the five quarters for which comparisons were possible; margins were *** and *** percent. In the other three quarters, the Norwegian product was priced between *** and *** percent higher than the domestic alloy product. In one of the three comparable quarters, the Canadian alloy product was priced *** percent lower than the domestic product. In the two remaining quarters, the Canadian product was priced between *** and *** percent higher than the domestic.

In the contract market for pure magnesium, the Canadian product undersold the domestic by between *** and *** percent in 6 of 12 quarters. In the other six quarters, the Canadian product was priced above the domestic, with margins ranging from *** to *** percent.[82] The Norwegian product was priced below the domestic in 6 of the 14 instances in which comparisons were possible; margins ranged from *** to *** percent. In the remaining eight quarters, the Norwegian product was priced between *** and *** percent above the domestic product.

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[81] The quantity of imported magnesium alloy sold on a spot basis was significantly lower than that for spot sales of domestic magnesium alloys.

[82] ***.

Table 42
Magnesium: Margins of under/(over) selling for sales of pure and alloy magnesium in the spot and contract markets, by quarters, January 1986-June 1991

(In percent)

Period	Pure magnesium				Magnesium alloy			
	Spot market[1]		Contract market		Spot market[1]		Contract market	
	Norway	Canada	Norway	Canada	Norway	Canada	Norway	Canada
.	.	.	.	.	.	.	.	.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

In the contract sales market for magnesium alloy, the Canadian product was priced *** percent below the domestic product in one of the six comparable quarters. In two quarters, the price of the Canadian product was *** percent higher than the domestic. In the remaining three quarters, the prices of the Canadian and the domestic product were the same. The Norwegian alloy product was priced between *** and *** percent higher than the domestic product in 3 of the 14 quarters. In five quarters, the Norwegian alloy product was priced above the domestic product, with margins ranging from *** to *** percent. In the other six quarters, the domestic and Norwegian product were priced the same.

Exchange Rates

Quarterly data reported by the International Monetary Fund indicate that the currencies of the two countries subject to these investigations fluctuated in relation to the U.S. dollar over the period from January-March 1988 through April-June 1991 (table 43).[83] The nominal value of the Canadian currency appreciated by 10.3 percent and the Norwegian currency depreciated by 5.8 percent. When adjusted for movements in producer price indexes in the United States and the specified countries, the real value of the Canadian currency appreciated by 3.3 percent. During the same period the Norwegian currency showed a depreciation of 3.8 percent.

Lost Sales and Lost Revenues

The Commission received lost-sales and lost-revenue allegations from three U.S. producers: *** . The *** lost-sales allegations totaled approximately *** million and involved about *** metric tons of magnesium allegedly purchased from Canadian sources. The *** lost-revenue allegations totaled *** and involved about *** metric tons of magnesium.[84] The Commission contacted four purchasers and a summary of the information obtained follows.

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[83] International Monetary Fund, *International Financial Statistics,* Sept. 1991.

[84] ***.

Table 43
Exchange rates:[1] Indexes of nominal and real exchange rates of the Canadian dollar and Norwegian krone, and indexes of producer prices[2] in the United States and Canada, and Norway, by quarters, January 1988-June 1991

Period	U.S. producer price index	Canada			Norway		
		Producer price index	Nominal exchange-rate index	Real exchange-rate index[3]	Producer price index	Nominal exchange-rate index	Real exchange-rate index[3]
1988:							
January-March	100.0	100.0	100.0	100.0	100.0	100.0	100.0
April-June	101.6	101.2	103.1	102.7	100.9	101.7	101.1
July-September	103.1	102.3	103.9	103.1	102.7	93.1	92.8
October-December	103.5	103.1	105.1	104.6	102.7	96.3	95.5
1989:							
January-March	105.8	104.6	106.3	105.2	105.3	94.7	94.2
April-June	107.7	104.8	106.2	103.4	107.1	90.8	90.3
July-September	107.3	104.4	107.2	104.4	108.0	90.4	91.0
October-December	107.7	103.8	108.5	104.5	108,0	92.9	93.2
1990:							
January-March	109.3	104.2	107.2	102.2	109.7	97.4	97.8
April-June	109.1	104.4	108.3	103.6	108.8	98.1	97.9
July-September	111.0	104.4	109.9	103.4	111.5	103.4	103.9
October-December	114.4	105.7	109.2	100.9	113.3	108.6	107.5
1991:							
January-March	112.0	105.4	109.7	103.2	113.3	106.6	107.8
April-June	110.9	103.9	110.3	103.3	113.3	94.2	96.2

[1] Exchange rates expressed in U.S. dollars per unit of foreign currency.
[2] Producer price indexes—intended to measure final product prices—are based on period-average quarterly indexes presented in line 63 of the *International Financial Statistics*.
[3] The real exchange rate is derived from the nominal rate adjusted for relative movements in producer prices in the United States and the specified countries.

Source: International Monetary Fund, *International Financial Statistics*, September 1991.

*** alleged that it lost revenues on *** separate occasions to *** due to competition from Canadian imports in *** . These *** allegations totaled *** and involved *** metric tons of magnesium ***. *** could not remember all the exact dates involved but did provide information on the firm's purchasing habits and prices in the magnesium market.[85] *** reported that *** purchases from ***.[86] He also stated that he has gone to both *** at various times and asked them both to lower prices. According to ***, prices for magnesium *** have generally declined during the period of investigation, with both U.S. and Canadian prices following similar trends. *** .

*** alleged that it lost revenues on *** separate occasions in *** to *** due to competition from Canadian imports. These *** allegations totaled *** and involved approximately *** metric tons of *** magnesium. *** could not confirm these specific allegations. *** stated that *** purchases magnesium from *** suppliers, ***. According to ***, no one firm has been the price leader during the period of investigation; at different times, each of its suppliers has been the lower-priced supplier. *** stated that *** . ***. ***.

*** named *** in *** lost revenue allegations and *** lost sale allegations during *** due to the competition from Canadian imports. The lost revenue allegations totaled *** and involved approximately *** metric tons of *** magnesium and the lost sale allegations totaled about *** million and involved about *** metric tons. *** denied these allegations. With respect to the lost sales allegations, *** reported that *** purchased the ***. ***. According to ***, approximately *** percent of *** purchases in 1990 were of U.S.-produced magnesium. *** also reported that *** did switch some of its purchases of U.S.-produced magnesium to *** during the period of investigation. This was done to *** .

*** was named by *** in *** lost sale allegations totaling approximately *** million and involved approximately *** metric tons of *** magnesium. *** provided specific information for *** of the allegations. *** reported that in all cases the lowest bidder was chosen. This was most often a U.S. supplier; however, in some cases *** was the lowest bidder. *** stated that *** offered the opportunity for ***. ***.[87]

*** accepted the two lowest bids which were from ***; *** price was *** per pound. *** purchased about *** tons from *** .

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[85] ***.

[86] ***.

[87] ***.

*** reported that *** were the two lowest bidders during this time. *** purchased about *** metric tons of *** magnesium and *** metric tons of *** magnesium from *** for *** per pound. In addition, *** bought *** metric tons of *** magnesium from ***.

Appendix A

U.S. International Trade Commission's *Federal Register* Notices

INTERNATIONAL TRADE COMMISSION

Institution of Magnesium From Canada and Norway

[Investigations Nos. 701-TA-309 and 310 and 731-TA-528 and 529 (Preliminary)]

AGENCY: International Trade Commission.

ACTION: Institution and scheduling of a preliminary countervailing duty and antidumping investigations.

SUMMARY: The Commission hereby gives notice of the institution of preliminary countervailing duty investigations Nos. 701-TA-309 and 310 (Preliminary) under section 703(a) of the Tariff Act of 1930 (19 U.S.C. 1671b(a)) to determine whether there is a reasonable indication that an industry in the United States is materially injured, or is threatened with material injury, or the establishment of an industry in the United States is materially retarded, by reason of imports from Canada and Norway of primary magnesium,[1] that are alleged to be subsidized by the Governments of Canada and Norway.

The Commission hereby also gives notice of the institution of preliminary antidumping investigations Nos. 731-TA-528 and 529 (Preliminary) under section 733(a) of the Tariff Act of 1930 (19 U.S.C. 1673b(a)) to determine whether there is a reasonable indication that an industry in the United States is materially injured, or is threatened with material injury, or the establishment of an industry in the United States is materially retarded, by reason of imports from Canada and Norway of primary magnesium, that are alleged to be sold in the United States at less than fair value. The Commission must complete preliminary countervailing duty and antidumping investigations in 45 days, or in these cases by October 21, 1991.

For further information concerning the conduct of these investigations and rules of general application, consult the Commission's Rules of Practice and Procedure, part 201, subparts A through E (19 CFR part 201) and part 207, subparts A and B (19 CFR part 207)

EFFECTIVE DATE: September 5, 1991.

FOR FURTHER INFORMATION CONTACT: Fred Fischer (202-205-3179), Office of Investigations, U.S. International Trade Commission, 500 E Street SW., Washington, DC 20436. Hearing-impaired persons can obtain information on this matter by contacting the Commission's TDD terminal on 202-252-1810. Persons with mobility impairments who will need special assistance in gaining access to the Commission should contact the Office of the Secretary at 202-205-2000.

SUPPLEMENTARY INFORMATION:

Background.—These investigations are being instituted in response to a petition filed on September 5, 1991, by Magnesium Corp. of America (MagCorp), Salt Lake City, UT.

Participation in the investigations and public service list.—Persons (other than petitioners) wishing to participate in the investigations as parties must file an entry of appearance with the Secretary to the Commission, as provided in

[1] The merchandise covered by these investigations is primary magnesium whether pure or alloyed. Pure magnesium is provided for in subheading 8104.1100.00 of the Harmonized Tariff Schedule of the United States (HTS), and is defined as unwrought magnesium containing at least 99.8 percent magnesium by weight. Magnesium alloys are provided for in subheading 8104.1900.00 of the HTS, and are defined as unwrought magnesium containing less than 99.8 percent magnesium by weight, with magnesium being the largest metallic element in the alloy by weight.

§§ 201.11 and 207.10 of the commission's rules, not later than seven (7) days after publication of this notice in the Federal Register. The Secretary will prepare a public service list containing the names and addresses of all persons, or their representatives, who are parties to these investigations upon the expiration of the period for filing entries of appearance.

Limited disclosure of business proprietary information (BPI) under an administrative protective order (APO) and BPI service list.—Pursuant to § 207.7(a) of the Commission's rules, the Secretary will make BPI gathered in these preliminary investigations available to authorized applicants under the APO issued in the investigations, provided that the application is made not later than seven (7) days after the publication of this notice in the Federal Register. A separate service list will be maintained by the Secretary for those parties authorized to receive BPI under the APO.

Conference.—The Commission's Director of Operations has scheduled a conference in connection with these investigations for 9:30 a.m. on Thursday, September 26, 1991, at the U.S. International Trade Commission Building, 500 E Street SW., Washington, DC. Parties wishing to participate in the conference should contact Fred Fischer (202–205–3179) not later than Monday, September 23, 1991, to arrange for their appearance. Parties in support of the imposition of countervailing and antidumping duties in these investigations and parties in opposition to the imposition of such duties will each be collectively allocated one hour within which to make an oral presentation at the conference. A nonparty who has testimony that may aid the Commission's deliberations may request permission to present a short statement at the conference.

Written submissions.—As provided in §§ 201.8 and 207.15 of the Commission's rules, any person may submit to the Commission on or before Tuesday, October 1, 1991, a written brief containing information and arguments pertinent to the subject matter of the investigations. Parties may file written testimony in connection with their presentation at the conference no later than three (3) days before the conference. If briefs or written testimony contain BPI, they must conform with the requirements of §§ 201.6, 207.3, and 207.7 of the Commission's rules.

In accordance with §§ 201.16(c) and 207.3 of the rules, each document filed by a party to the investigations must be served on all other parties to the investigations (as identified by either the public or BPI service list), and a certificate of service must be timely filed. The Secretary will not accept a document for filing without a certificate of service.

Authority: These investigations are being conducted under authority of the Tariff Act of 1930, title VII. This notice is published pursuant to § 207.12 of the Commission's rules.

Issued: September 6, 1991.

By order of the Commission.

Kenneth R. Mason,

Secretary.

[FR Doc. 91–21910 Filed 9–11–91; 8:45 am]

BILLING CODE 7020-02-M

[Investigation No. 701-TA-310 (Preliminary)]

Termination Magnesium From Norway

AGENCY: United States International Trade Commission.

ACTION: Notice of termination of countervailing duty investigation No. 701-TA-310 (Preliminary).

SUMMARY: On September 25, 1991, the U.S. Department of Commerce notified the U.S. International Trade Commission under section 702(c) of the Tariff Act of 1930 (19 U.S.C. 1671a(c)) of its dismissal of a countervailing duty petition and termination of proceeding regarding imports of primary magnesium from Norway. Accordingly, pursuant to § 207.40(a) of the Commission's Rules of Practice and Procedure (19 CFR 207.40(a)), investigation No. 701-TA-310 (Preliminary) concerning imports of primary magnesium [1] from Norway is terminated.

EFFECTIVE DATE: September 26, 1991.

FOR FURTHER INFORMATION CONTACT: Fred Fischer (202-205-3179), Office of Investigations, U.S. International Trade Commission, 500 E Street SW., Washington, DC 20436. Hearing-impaired individuals are advised that information on this matter can be obtained by contacting the Commission's TDD terminal on 202-205-1810. Persons with mobility impairments who will need special assistance in gaining access to the Commission should contact the Office of the Secretary at 202-205-2000.

SUPPLEMENTARY INFORMATION:

Background.—The U.S. International Trade Commission instituted investigation No. 701-TA-310 (Preliminary) on September 5, 1991, following a petition filed by Magnesium Corp. of America (MagCorp), Salt Lake City, UT, alleging that an industry in the United States is materially injured, or is threatened with material injury, or the establishment of an industry in the United States is materially retarded, by reason of imports from Norway of primary magnesium, that are alleged to be subsidized by the Government of Norway.

Authority: This investigation is being conducted under authority of the Tariff Act of 1930, title VII. This notice is published pursuant to section 207.12 of the Commission's rules.

Issued: October 17, 1991.

By order of the Commission.

Kenneth R. Mason,

Secretary.

[FR Doc. 91-25507 Filed 10-22-91; 8:45 am]

BILLING CODE 7020-02-M

Appendix B

List of Participants in the Public Conference

United States International Trade Commission

List of Participants in the Public Conference

Magnesium from Canada and Norway

Invs. Nos. 701-TA-309 and 731-TA-528 and 529 (Preliminary)

DATE AND TIME

September 26, 1991 — 9:30 a.m.

LOCATION

Courtroom A — Room 100A
United States International Trade Commission
500 E Street, S.W.
Washington, DC

LIST OF PARTICIPANTS

Those listed below appeared at the United States International Trade Commission's conference held in connection with the subject investigations.

<u>In Support of Imposition of Countervailing and Antidumping Duties</u>

- **Magnesium Corporation of America** (U.S. producer)
  Don Wilkinson, President
  Lee R. Brown, Vice President
  Howard I. Kaplan, Vice President of Sales and Marketing

In Opposition to Imposition of Countervailing and Antidumping Duties

DEWEY BALLANTINE—Washington, D.C.
On behalf of—

- **Norsk Hydro a.s.** (Norwegian producer)
  Arnfinn Holaas, Vice President of Sales and Marketing
- **Norsk Hydro Canada, Inc.** (Canadian producer)
  James Walters, Vice President of Sales and Marketing
- **Diemakers, Inc.** (Diecaster)
  Jay Williams, Purchasing Manager
- **ESM II, Inc.** (Purchaser)
  Greg Magness, President

Michael H. Stein)
Carol A. Mitchell)—OF COUNSEL
William A. Noellert)

WEIL, GOTSHAL & MANGES—Washington, D.C.
On behalf of—

- **Timminco Limited** (Canadian producer)
  J. Thomas Timmins, President and CEO
- **Brush-Wellman, Inc.—Hanna** (Purchaser)
  John J. Pallam, General Counsel

Martin S. Applebaum)
Jeffrey P. Bialos)—OF COUNSEL
M. Jean Anderson)

ACKERSON & FELDMAN—Washington, D.C.
On behalf of—

- **Gouvernement du Quebéc**

Seth Kaplan, Economic Consultant, Trade Resources Co.

Elliot J. Feldman)
Stephen J. Narkin)—OF COUNSEL

Appendix C

U.S. Department of Commerce's *Federal Register* Notices

[A-122-814]

Initiation of Antidumping Duty Investigation: Pure and Alloy Magnesium From Canada

AGENCY: Import Administration, International Trade Administration, Department of Commerce.

EFFECTIVE DATE: October 1, 1991.

FOR FURTHER INFORMATION CONTACT: Rick Herring or Magd Zalok, Office of Countervailing Duty Investigations, Import Administration, International Trade Administration, U.S. Department of Commerce, room B099, 14th Street and Constitution Avenue NW., Washington, DC 20230; telephone (202) 377-3530 or (202) 377-4162.

Initiation:

The Petition

On September 5, 1991, the Magnesium Corporation of America filed with the Department of Commerce [the Department] an antidumping duty petition on behalf of the United States industry producing pure and alloy magnesium. In accordance with 19 CFR 353.12 (1991), the petitioner alleges that imports of pure and alloy magnesium from Canada are being, or are likely to be, sold in the United States at less than fair value within the meaning of section 731 of the Tariff Act of 1930, as amended (the Act), and that these imports are materially injuring, or threaten material injury to, domestic producers of magnesium. The petitioner has stated that it has standing to file the petition because it is an interested party, as defined in 19 CFR 353.2(k), and because it has filed the petition on behalf of the U.S. industry producing magnesium. If any interested party, as described in 19 CFR 353.2(k) (3), (4), (5), or (6), wishes to register support for, or opposition to, this investigation, please file written notification with the Assistant Secretary for Import Administration.

United States Price and Foreign Market Value

Petitioner based U.S. price (USP) on delivered sales transactions to unrelated U.S. customers from Norsk Hydro Magnesium, a Canadian manufacturer of the subject merchandise. Norsk Hydro Magnesium is a subsidiary of the Norwegian company Norsk Hydro A.S. USP was calculated pursuant to purchase price methodology (19 CFR 353.41(b)). A deduction from USP was made for freight charges. Freight charges were based on the distance between the Norsk Hydro plant in Becancour, Quebec and its U.S. customers and the freight rates which petitioner incurs when shipping magnesium.

Petitioner provided home market prices based on sales transactions between Norsk Hydro and an unrelated customer in Canada. Petitioner alleges that these prices were below Norsk Hydro's cost of production. Therefore, petitioner provided foreign market value (FMV) based on constructed value pursuant to 19 CFR 353.50. Since petitioner uses a production process that is different from Norsk Hydro, petitioner calculated cost of production and constructed value based on information obtained from a 1991 tour of Norsk Hydro's Canadian plant, chemical engineering principles and, for certain steps in the production process, its own experience in producing magnesium. Petitioner included Norsk Hydro's interest on capital in its calculation of constructed value. Since the interest on capital is not an expense in accordance with generally accepted accounting principles, we adjusted petitioner's calculated constructed value by excluding interest on capital. We first compared the cost of production to home market prices and determined that these prices were below Norsk Hydro's cost of production. Therefore, FMV was based on constructed value pursuant to 19 CFR 353.51(b). We compared the adjusted constructed value to the USP and calculated alleged dumping margins ranging from 27.18 percent to 32.74 percent.

Petitioner's analysis provides reasonable grounds to believe or suspect that Norsk Hydro has made sales in the home market at prices below cost of production. Therefore, pursuant to section 773(b) of the Act, we are initiating an investigation to determine whether home market sales are made at prices below the cost of production.

Initiation of Investigation

Under 19 CFR 353.13(a), the Department must determine, within 20 days after a petition is filed, whether the petition properly alleges the basis on which an antidumping duty may be imposed under section 731 of the Act, and whether the petition contains information reasonably available to the petitioner supporting the allegations. We have examined the petition on pure and alloy magnesium from Canada and find that it meets the requirements of 19 CFR 353.13(a). Therefore, we are initiating an antidumping duty investigation to determine whether imports of pure and alloy magnesium from Canada are being, or are likely to be, sold in the United States at less than fair value.

In accordance with 19 CFR 353.13(b) we are notifying the International Trade Commission (ITC) of this action.

Any producer or reseller seeking exclusion from a potential antidumping duty order must submit its request for exclusion within 30 days of the date of the publication of this notice. The procedures and requirements regarding the filing of such requests are contained in 19 CFR 353.14.

Scope of Investigation

The products covered by this investigation are pure and alloy magnesium from Canada. Pure unwrought magnesium contains at least

99.8 percent magnesium by weight and is sold in various slab and ingot forms and sizes. Magnesium alloys contain less than 99.8 percent magnesium by weight, with magnesium being the largest metallic element in the alloy by weight. Pure and alloy magnesium are currently provided for in subheadings 8104.11.0000 and 8104.19.0000, respectively, of the Harmonized Tariff Schedule (HTS). Although the HTS subheadings are provided for convenience and customs purposes, our written description of the scope of this proceeding is dispositive.

Preliminary Determination by ITC

The ITC will determine by October 21, 1991, whether there is a reasonable indication that imports of pure and alloy magnesium from Canada are materially injuring, or threaten material injury to, a U.S. industry. If its determination is negative, the investigation will be terminated. If affirmative, the Department will make its preliminary determination on or before February 12, 1992, unless the investigation is terminated pursuant to 19 CFR 353.17 or the preliminary determination is extended pursuant to 19 CFR 353.15.

This notice is published pursuant to section 732(c)(2) of the Act and 19 CFR 353.13(b).

Dated: September 25, 1991.

Eric I. Garfinkel,

Assistant Secretary for Import Administration.

[FR Doc. 91-23627 Filed 9-30-91; 8:45 am]

BILLING CODE 3510-DS-M

[A-403-803]

Initiation of Antidumping Duty Investigation: Pure and Alloy Magnesium From Norway

AGENCY: Import Administration, International Trade Administration, Department of Commerce.

EFFECTIVE DATE: October 1, 1991.

FOR FURTHER INFORMATION CONTACT: Rick Herring or Magd Zalok, Office of Countervailing Duty Investigations, Import Administration, International Trade Administration, U.S. Department of Commerce, room B099, 14th Street and Constitution Avenue NW., Washington, DC 20230; telephone (202) 377-3530 or (202) 377-4162.

Initiation

The Petition

On September 5, 1991, the Magnesium Corporation of America filed with the Department of Commerce (the Department) an antidumping duty petition on behalf of the United States industry producing pure and alloy magnesium. In accordance with 19 CFR 353.12 (1991), the petitioner alleges that imports of pure and alloy magnesium from Norway are being, or are likely to be, sold in the United States at less than fair value within the meaning of section 731 of the Tariff Act of 1930, as amended (the Act), and that these imports are materially injuring, or threaten material injury to, domestic producers of magnesium. The petitioner has stated that it has standing to file the petition because it is an interested party, as defined in 19 CFR 353.2(k), and because it has filed the petition on behalf of the U.S. industry producing magnesium. If any interested party, as described in 19 CFR 353.2(k) (3), (4), (5), or (6), wishes to register support for, or opposition to, this investigation, please file written notification with the Assistant Secretary for Import Administration.

United States Price and Foreign Market Value

Petitioner based United States Price (USP) on prices from Norsk Hydro A.S., a manufacturer and exporter of the subject merchandise, to an unrelated U.S. customer. USP was calculated pursuant to purchase price methodology (19 CFR 353.41(b)). However, petitioner did not provide data on the expenses incurred in delivering the subject merchandise to the United States. Therefore, no deductions to USP were made.

Petitioner did not have home market prices; therefore, petitioner based foreign market value (FMV) on constructed value pursuant to 19 CFR 353.50. Since petitioner uses a production process that is different from that used by Norsk Hydro, petitioner calculated constructed value based on chemical engineering principles and, for certain steps in the production process, its own experience in producing magnesium. Petitioner included Norsk Hydro's interest on capital in its constructed value. Since the interest on capital is not an expense in accordance with generally accepted accounting principles, we adjusted petitioner's calculated constructed value by excluding interest on capital. We adjusted dolomite costs to agree with the supporting documentation. We compared the adjusted constructed value to the USP and calculated an alleged dumping margin of 10.92 percent.

Initiation of Investigation

Under 19 CFR 353.13(a), the Department must determine, within 20 days after a petition is filed, whether the petition properly alleges the basis on which an antidumping duty may be imposed under section 731 of the Act, and whether the petition contains information reasonably available to the petitioner supporting the allegations. We have examined the petition on pure and alloy magnesium from Norway and find that it meets the requirements of 19 CFR 353.13(a). Therefore, we are initiating an antidumping duty investigation to determine whether imports of pure and alloy magnesium from Norway are being, or are likely to be, sold in the United States at less than fair value.

In accordance with 19 CFR 353.13(b) we are notifying the International Trade Commission (ITC) of this action.

Any producer or reseller seeking exclusion from a potential antidumping duty order must submit its request for exclusion within 30 days of the date of the publication of this notice. The procedures and requirements regarding the filing of such requests are contained in 19 CFR 353.14.

Scope of Investigation

The products covered by this investigation are pure and alloy magnesium from Norway. Pure unwrought magnesium contains at least 99.8 percent magnesium by weight and is sold in various slab and ingot forms and sizes. Magnesium alloys contain less than 99.8 percent magnesium by weight, with magnesium being the largest metallic element in the alloy by weight. Pure and alloy magnesium are currently provided for in subheadings 8104.11.0000 and 8104.19.0000, respectively, of the Harmonized Tariff Schedule (HTS). Although the HTS subheadings are provided for convenience and customs purposes, our written description of the scope of this proceeding is dispositive.

Preliminary Determination by ITC

The ITC will determine by October 21, 1991, whether there is a reasonable indication that imports of pure and alloy magnesium from Norway are materially injuring, or threaten material injury to, a U.S. industry. If its determination is negative, the investigation will be terminated. If affirmative, the Department will make its preliminary determination on or before February 12, 1992, unless the investigation is terminated pursuant to 19 CFR 353.17 or the preliminary determination is extended pursuant to 19 CFR 353.15.

This notice is published pursuant to section 732(c)(2) of the Act and 19 CFR 353.13(b).

Dated: September 25, 1991.

Eric I. Garfinkel,

Assistant Secretary for Import Administration.

[FR Doc. 91-23628 Filed 9-30-91; 8:45 am]

BILLING CODE 3510-DS-M

[C-122-815]

Initiation of Countervailing Duty Investigation: Pure and Alloy Magnesium From Canada

AGENCY: Import Administration, International Trade Administration, Department of Commerce.

EFFECTIVE DATE: October 1, 1991.

FOR FURTHER INFORMATION CONTACT: Kristal A. Eldredge or Rick Herring, Office of Countervailing Investigations, Import Administration, International Trade Administration, U.S. Department of Commerce, 14th Street and Constitution Avenue NW., Washington, DC 20230; telephone: (202) 377-0631 and (202) 377-3530, respectively.

SUPPLEMENTARY INFORMATION:

The Petition

On September 5, 1991, we received a petition in proper form from Magnesium Corporation of America, on behalf of the U.S. industry producing pure and alloy magnesium (magnesium). Petitioner filed amendments to the petition on September 6, 10, 13, and 18, 1991. In accordance with 19 CFR 355.12 (1991), petitioner alleges that manufacturers, producers, or exporters of magnesium in Canada receive subsidies within the meaning of section 701 of the Tariff Act of 1930, as amended (the Act).

Since Canada is a "country under the Agreement" within the meaning of section 701(b) of the Act, Title VII of the Act applies to this investigation, and the U.S. International Trade Commission (ITC) is required to determine whether imports of the subject merchandise from Canada materially injure, or threaten material injury to, the U.S. industry.

Petitioner has stated that it has standing to file the petition because it is an interested party as defined under 19 CFR 355.2(i), and because it has filed the petition on behalf of the U.S. industry manufacturing the product which is subject to this investigation. If any interested party, as described in 19 CFR 355.2(i) (3), (4), (5), or (6), wishes to register support for, or opposition to, this petition, please file written notification with the Assistant Secretary for Import Administration.

Initiation of Investigation

Under 19 CFR 355.13(a) the Department must determine, within 20 days after a petition is filed, whether the petition properly alleges the bases on which a countervailing duty may be imposed under section 701(a) of the Act, and whether the petition contains information reasonably available to the petitioner supporting the allegations. We have examined the petition on magnesium from Canada and have found that it meets these requirements. Therefore, we are initiating a countervailing duty investigation to determine whether Canadian manufacturers, producers, or exporters of magnesium receive subsidies.

In accordance with 19 CFR 355.13(b), we are notifying the ITC of this action.

Scope of Investigation

The products covered by this investigation are pure and alloy magnesium from Canada. Pure magnesium unwrought contains at least 99.8 percent magnesium by weight sold in various slab and ingot forms and sizes. Magnesium alloys contain less than 99.8 percent magnesium by weight, with magnesium being the largest metallic element in the alloy by weight. Pure and alloy magnesium are currently provided for in subheadings 8104.11.0000 and 8104.19.0000, respectively, of the Harmonized Tariff Schedule (HTS). Although the HTS subheadings are provided for convenience and customs purposes, our written description of the scope of this proceeding is dispositive.

Allegations of Subsidies

Petitioner lists a number of practices by the Government of Canada (GOC) and the Government of the province of Quebec which allegedly confer subsidies on manufacturers, producers, or exporters of magnesium in Canada. We are initiating an investigation of the following programs:

A. *Federal Programs*
1. Quebec Resource Regions (Outside the Central Regions)
2. St. Lawrence River Environmental Technology Development Program
3. Program for Export Market Development
4. Export Development Program

B. *Joint Federal-Provincial Program*
Government Funding of Institute of Magnesium Technology (IMT)

C. *Provincial Programs*
1. Hydro-Quebec "Program of Risk and Profit Sharing"
2. Major Opportunities to Stimulate Technology (MOST) Programs
3. Development Assistance Program (AQVIR)
4. Industrial Feasibility Study Assistance Program
5. Export Promotion Assistance Program
6. Manpower Training Programs
7. Creation of Scientific Jobs in Industries
8. Business Investment Assistance Program
9. Business Financing Program
10. Research and Innovation Activities Program
11. Export Assistance Program
12. Other Research and Innovation Programs

We are not initiating an investigation of the following programs alleged in the petition:

1. Remission of Import Duties

Petitioner alleges that the GOC offers remission of import duties paid for raw materials or manufactured goods used in products earmarked for exportation or for production machinery and equipment not available in Canada. We found this program, with respect to imports of machinery and equipment, not to be countervailable in the Final Affirmative Countervailing Duty Detemination: Certain Fresh Atlantic Ground Fish from Canada (51 FR 10041, March 24, 1986). Absent the provision of new evidence, or an allegation of changed circumstances, we have no basis upon which to initiate an investigation of this program. For the remission of import duties on raw materials, there is no evidence or allegation that remission of duties is paid on non-physically incorporated

materials. Remission of duties on physically incorporated materials is not a countervailable subsidy. Therefore, we are not initiating an investigation of this program.

For the programs listed below, petitioner has either (1) not provided an explanation as to how the benefits are limited to a specific enterprise or industry or group of enterprises or industries or (2) not provided an explanation as to why the magnesium industry would qualify for benefits from these programs. Therefore, we are not initiating an investigation of these programs.

2. Technology Inflow Program

Petitioner alleges that the GOC offers financial support in the form of sharing the costs of activities such as meetings of foreign experts in Canada and abroad, exploratory missions or working tours by Canadians abroad for up to five months.

3. Manpower Training Programs

Petitioner alleges that the GOC offers incentive programs for hiring and training workers. These programs are administered by the Employment and Immigration Canada.

4. Manpower Retraining and Development Program

Petitioner alleges that the GOC and Government of Quebec (GOQ) offer free technical evaluation of manpower training needs of an organization. This program also provides financing for retraining and development courses given by educational institutions.

5. Manpower Adaption Program

Petitioner alleges that the GOC and GOQ finance evaluations and organization services, and employee training.

6. Technology Outreach Program

Petitioner alleges that the GOC offers financial support of up to 50 percent, over a five-year period, to cover average operating costs of starting up national technology centers and, in some cases, to cover the costs of the eligible fixed assets of these centers. This program may also cover up to 50 percent of the operating costs of established centers provided services are in keeping with national development priorities.

7. Advanced Manufacturing Technology Application Program

Petitioner alleges that the GOC provides contributions of up to 75 percent to cover the costs of consulting services to carry out commercial and technical feasibility studies for upgrading manufacturing operations.

8. Microelectronics and Systems Development Program

Petitioner alleges that the GOC offers financing of up to five million dollars of eligible costs of a research and development project for innovative microelectronic components or systems using advanced microelectronics. Eligible costs include salaries, equipment, evaluation of prototypes, research on patents and copyrights, patent applications, subcontracts, etc.

9. Strategic Technologies Program

Petitioner alleges that the GOC offers contributions to cover up to 50 percent of eligible costs for the creation of research and development and/or Technology Application Alliances of Canadian companies with other Canadian companies or foreign firms, research institutes and universities leading to innovative projects, or new application of information technology.

10. The Automotive Components Initiative

Petitioner alleges that the GOC offers financial assistance to industries that manufacture or would like to manufacture automotive components. The assistance may cover up to 50 percent of the costs of consulting services to evaluate the need for improving the quality and distribution of the firm's products and 50 percent of the costs implementing the recommendations.

ITC Notification. Section 702(d) of the Act requires us to notify the ITC of this action and to provide it with the information we used to arrive at this determination. We will notify the ITC and make available to it all non-privileged and non-proprietary information. We will also allow the ITC access to all privileged and business proprietary information in the Department's files, provided the ITC confirms in writing that it will not disclose such information, either publicly or under administrative protective order, without written consent of the Deputy Assistant Secretary for Investigations, Import Administration.

Preliminary Determination by the ITC. The ITC will determine by October 21, 1991, whether there is a reasonable indication that imports of magnesium from Canada are materially injuring, or threaten material injury to, a U.S. industry. If its determination is negative, the investigation will be terminated. If affirmative, the Department will make its preliminary determination on or before November 29, 1991, unless the investigation is terminated pursuant to 19 CFR 355.17 or the preliminary determination is extended pursuant to 19 CFR 355.15.

This notice is published pursuant to section 702(c)(2) of the Act.

Dated: September 25, 1991.

Eric I. Garfinkel,

Assistant Secretary for Import Administration.

[FR Doc. 91-23829 Filed 9-30-91; 8:45 am]

BILLING CODE 3510-DS-M

[C-403-804]

Dismissal of Countervailing Duty Petition and Termination of Proceeding: Pure and Alloy Magnesium From Norway

AGENCY: Import Administration, International Trade Administration, Department of Commerce.

EFFECTIVE DATE: October 1, 1991.

FOR FURTHER INFORMATION CONTACT: Kristal A. Eldredge or Rick Herring, Office of Countervailing Investigations, Import Administration, International Trade Administration, U.S. Department of Commerce, 14th Street and Constitution Avenue NW., Washington, DC 20230; telephone: (202) 377-0631 and (202) 377-3530, respectively.

SUPPLEMENTARY INFORMATION:

The Petition

On September 5, 1991, we received a petition from Magnesium Corporation of America, on behalf of the U.S. industry producing pure and alloy magnesium (magnesium). Petitioner alleges that the Norwegian government authorized a Norwegian government-owned company, which produces magnesium, to "write-off" part of its investment in the company's subsidiary located in Canada and that this write-off constitutes a subsidy.

Dismissal of Petition

Under 19 CFR 355.13(a) the Department must determine, within 20 days after a petition is filed, whether the petition properly alleges the bases on which a countervailing duty may be imposed under section 705 of the Tariff Act of 1930, as amended, (the Act), and whether the petition contains information reasonably available to the petitioner supporting the allegations. We have examined the petition on magnesium from Norway and have found that it does not meet these requirements.

Petitioner's only allegation is that the Norwegian government authorized a

Norwegian government-owned company, which produces magnesium, to "write-off" part of its investment in the company's subsidiary located in Canada. Petitioner does not, however, allege that the write-off is pursuant to a particular government action or program which benefits a specific enterprise or industry or group of enterprises or industries, as opposed to a tax statute or regulation that is applicable to all companies. Nor does petitioner provide any other information describing the nature of the write-off or how it may provide a benefit to a Norwegian producer.

Therefore, we do not have sufficient basis to initiate a countervailing duty investigation to determine whether Norwegian manufacturers, producers, or exporters of magnesium receive subsidies.

In accordance with 19 CFR 355.13(c), we are notifying the International Trade Commission of this Action.

This notice is published pursuant to section 702(c) (3) of the Act (19 U.S.C. 1671a(c) (3)).

Dated: September 25, 1991.

Eric I. Garfinkel,

Assistant Secretary for Import Administration.

[FR Doc. 91-23630 Filed 9-30-91; 8:45 am]

BILLING CODE 3510-DS-M

Appendix D

Selected Data on Secondary Magnesium Producers

Table D-1
Secondary magnesium:[1] Selected data,[2] 1988-90, January-June 1990, and January-June 1991

Item	1988	1989	1990	January-June— 1990	January-June— 1991
Production (metric tons)	***	***	***	***	***
Average-of-period capacity	***	***	***	***	***
Average-of-period capacity utilization[3]	***	***	***	***	***
U.S. producers' domestic shipments (metric tons)	***	***	***	***	***
U.S. producers' exports	***	***	***	***	***
U.S producers' end-of-period inventories	***	***	***	***	***

[1] Magnesium recovered from scrap and processed in the United States; excludes magnesium recycled by aluminum can recyclers and titanium producers.
[2] ***.
[3] Practical capacity was defined as the greatest level of output a plant can achieve within the framework of a realistic work pattern. Producers were asked to consider, among other factors, a normal product mix and an expansion of operations that could be reasonably attained in their industry and locality in setting capacity in terms of the number of shifts and hours of plant operations. The capacity was reported using an industry average of *** hours per week and *** weeks per year.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Financial Experience of U.S. Producers on Their Operations Producing Secondary Magnesium

Overall Establishment Operations

Imco, the only producer of secondary magnesium to supply financial data, ***. Although *** (table D-2) ***.

Operations on Secondary Magnesium

As shown in table D-3, Imco's ***.

The largest component of *** manufacturing costs (table D-4) is ***.

Investment in Productive Facilities, Capital Expenditures, and Research and Development Expenditures

Data on Imco's investment in productive facilities and return on assets are shown in table D-5, and its capital expenditures are shown in table D-6. ***.

Table D-2
Income-and-loss experience of Imco[1] on the overall operations of its establishment wherein secondary magnesium is produced, fiscal years 1988-90, January-June 1990, and January-June 1991

Item	1988	1989	1990	January-June— 1990	January-June— 1991
	Value (1,000 dollars)				
Net sales	***	***	***	***	***
Cost of goods sold	***	***	***	***	***
Gross profit	***	***	***	***	***
SG&A[2]	***	***	***	***	***
Operating income	***	***	***	***	***
Interest expense	***	***	***	***	***
Other income, net	***	***	***	***	***
Net income before taxes	***	***	***	***	***
Depreciation and amortization	***	***	***	***	***
Cash flow[3]	***	***	***	***	***
	Ratio to net sales (percent)				
Cost of goods sold	***	***	***	***	***
Gross profit	***	***	***	***	***
SG&A[2]	***	***	***	***	***
Operating income	***	***	***	***	***
Net income before taxes	***	***	***	***	***

[1] Imco's fiscal year ends ***.
[2] Selling, general, and administrative expenses.
[3] Cash flow is defined as net income or loss plus depreciation and amortization.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table D-3
Income-and-loss experience of Imco on its operations producing secondary magnesium, fiscal years 1988-90, January-June 1990, and January-June 1991

Item	1988	1989	1990	January-June— 1990	1991
	Quantity (metric tons)				
Net sales	***	***	***	***	***
	Value (1,000 dollars)				
Net sales	***	***	***	***	***
Cost of goods sold	***	***	***	***	***
Gross profit	***	***	***	***	***
SG&A[1]	***	***	***	***	***
Operating income	***	***	***	***	***
Interest expense	***	***	***	***	***
Other income, net	***	***	***	***	***
Net income before taxes	***	***	***	***	***
Depreciation and amortization	***	***	***	***	***
Cash flow[2]	***	***	***	***	***
	Value (dollars per pound)				
Net sales	***	***	***	***	***
Cost of goods sold	***	***	***	***	***
Gross profit	***	***	***	***	***
SG&A[1]	***	***	***	***	***
Operating income	***	***	***	***	***
	Ratio to net sales (percent)				
Cost of goods sold	***	***	***	***	***
Gross profit	***	***	***	***	***
SG&A[1]	***	***	***	***	***
Operating income	***	***	***	***	***
Net income before taxes	***	***	***	***	***

[1] Selling, general, and administrative expenses.
[2] Cash flow is defined as net income or loss plus depreciation and amortization.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table D-4
Imco's per-unit manufacturing costs on its operations producing secondary magnesium, fiscal years 1988-90, January-June 1990, and January-June 1991

Item	1988	1989	1990	January-June 1990	January-June 1991
	Quantity (metric tons)				
Production	***	***	***	***	***
	Cost (per pound)				
Direct materials	***	***	***	***	***
Direct labor	***	***	***	***	***
Factory overhead:	***	***	***	***	***
Indirect labor	***	***	***	***	***
Energy costs	***	***	***	***	***
Supplies/maintenance cost	***	***	***	***	***
Other	***	***	***	***	***
Subtotal	***	***	***	***	***
Total costs	***	***	***	***	***
	Percent of total cost				
Direct materials	***	***	***	***	***
Direct labor	***	***	***	***	***
Factory overhead:	***	***	***	***	***
Indirect labor	***	***	***	***	***
Energy costs	***	***	***	***	***
Supplies/maintenance cost	***	***	***	***	***
Other	***	***	***	***	***
Subtotal	***	***	***	***	***
Total costs	100.0	100.0	100.0	100.0	100.0

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table D-5
Value of Imco's assets and return on assets of its establishment wherein secondary magnesium is produced, fiscal years 1988-90, January-June 1990, and January-June 1991

Item	1988	1989	1990	January-June— 1990	January-June— 1991
	Value (1,000 dollars)				
All products:					
Fixed assets:					
Original cost	***	***	***	***	***
Book value	***	***	***	***	***
Total assets[1]	***	***	***	***	***
Secondary magnesium:					
Fixed assets:					
Original cost	***	***	***	***	***
Book value	***	***	***	***	***
Total assets[2]	***	***	***	***	***
	Return on book value of fixed assets (percent)[3]				
Secondary magnesium:					
Operating return[4]	***	***	***	***	***
Net return[5]	***	***	***	***	***
	Return on total assets (percent)[3]				
Secondary magnesium:					
Operating return[4]	***	***	***	***	***
Net return[5]	***	***	***	***	***

[1] Defined as book value of fixed assets plus current and noncurrent assets.
[2] Defined as operating income or loss divided by asset value.
[3] Data for the partial year periods are calculated using annualized income-and-loss information.
[4] Defined as net income-or-loss divided by asset value.
[5] Total establishment assets are apportioned to product groups on the basis of the ratio of the respective book values of fixed assets.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table D-6
Imco's capital expenditures, by products, fiscal years 1988-90, January-June 1990, and January-June 1991

(In 1,000 dollars)

Item	1988	1989	1990	January-June 1990	January-June 1991
All products	***	***	***	***	***
Secondary magnesium	***	***	***	***	***

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Appendix E

Effects of Imports on Producers' Existing Development and Production Efforts, Growth, Investment, and Ability to Raise Capital

The Commission requested U.S. producers to describe any actual or anticipated negative effects of imports of pure magnesium and/or magnesium alloys from Canada or Norway on existing development and production efforts, growth, investment, and ability to raise capital. Dow Chemical *** did supply comments. The responses of the four producers are as follows:

Response of U.S. Producers

1. Since January 1, 1988, has your firm experienced any actual negative effects on its growth, investment, ability to raise capital, or existing development and production efforts as a result of imports of pure magnesium and/or magnesium alloys from Canada or Norway?

Dow Chemical.—***.

Imco.—***.

Magcorp.—***.

Northwest.—***.

2. Does your firm anticipate any negative impact of imports of pure magnesium and/or magnesium alloys from Canada or Norway?

Dow Chemical.—***.

Imco.—***.

Magcorp.—***.

Northwest.—***.

3. Has the scale of capital investments undertaken been influenced by the presence of imports of pure magnesium and magnesium alloys from Canada and Norway?

Dow Chemical.—***.

Imco.—***.

Magcorp.—***.

Northwest.—***.