BAUXITE AND ALUMINA[1]

(Data in thousand metric dry tons unless otherwise noted)

Domestic Production and Use: Nearly all bauxite consumed in the United States was imported; of the total, more than 90% was converted to alumina. Of the total alumina used, about 90% went to primary aluminum smelters and the remainder went to nonmetallurgical uses. Annual alumina capacity was 5.75 million tons, with all four Bayer refineries operating during the year. Domestic bauxite was used in the production of nonmetallurgical products, such as abrasives, chemicals, and refractories.

Salient Statistics—United States:[2]	2001	2002	2003	2004	2005[e]
Production, bauxite, mine	NA	NA	NA	NA	NA
Imports of bauxite for consumption[3]	8,670	7,710	8,860	10,500	10,400
Imports of alumina[4]	3,100	3,010	2,310	1,650	1,700
Exports of bauxite[3]	88	52	89	75	75
Exports of alumina[4]	1,250	1,270	1,090	1,230	1,200
Shipments of bauxite from Government stockpile excesses[3]	3,640	297	1,710	66	—
Consumption, apparent, bauxite and alumina (in aluminum equivalents)[5]	3,670	2,860	2,580	2,810	2,800
Price, bauxite, average value U.S. imports (f.a.s.) dollars per ton	23	20	19	22	25
Stocks, bauxite, industry, yearend[3]	1,740	1,280	3,830	3,120	2,500
Net import reliance,[6] bauxite and alumina, as a percentage of apparent consumption	100	100	100	100	100

Recycling: None.

Import Sources (2001-04):[7] Bauxite: Jamaica, 37%; Guinea, 32%; Brazil, 12%; Guyana, 11%; and other, 8%. Alumina: Australia, 53%; Suriname, 26%; Jamaica, 10%; and other, 11%. Total: Jamaica, 26%; Australia, 22%; Guinea, 19%; Suriname, 10%; and other, 23%.

Tariff: Import duties on bauxite and alumina were abolished in 1971 by Public Law 92-151. Duties can be levied only on such imports from nations with nonnormal trade relations. However, all countries that supplied commercial quantities of bauxite or alumina to the United States during the first 8 months of 2005 had normal-trade-relations status.

Depletion Allowance: 22% (Domestic), 14% (Foreign).

Government Stockpile:

Stockpile Status—9-30-05[8]

Material	Uncommitted inventory	Committed inventory	Authorized for disposal	Disposal plan FY 2005	Disposals FY 2005
Bauxite, metal grade:					
Jamaica-type	—	2,840	—	2,030	—
Suriname-type	—	11	—	—	—
Bauxite, refractory-grade	—	6	—	68	—

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BAUXITE AND ALUMINA

Events, Trends, and Issues: Increased demand and limited supply caused spot prices for metallurgical-grade alumina, as published by Metal Bulletin, to rise dramatically by the end of the third quarter. The published price range began the year at $390 to $420 per ton of alumina. By the middle of March, the price range had increased to $440 to $460 per ton. The price range then began a downward slide that lasted through early August to a range of $400 to $420 per ton, before rebounding to $470 to $500 per ton at the end of September.

In October, domestic alumina refineries closed temporarily in preparation for two major storms that struck the Gulf Coast of the United States. The storms either missed the plants completely or caused only minor damage, and the plants were back onstream within a few days.

World production of bauxite and alumina increased compared with that of 2004. Based on production data from the International Aluminium Institute, world alumina production during the first 2 quarters of 2005 increased 2% compared with that for the same period in 2004.

World Bauxite Mine Production, Reserves, and Reserve Base:

	Mine production		Reserves[9]	Reserve base[9]
	2004	2005[e]		
United States	NA	NA	20,000	40,000
Australia	56,600	58,000	5,700,000	7,700,000
Brazil	18,500	18,000	1,900,000	2,500,000
China	15,000	17,000	700,000	2,300,000
Greece	2,440	2,200	600,000	650,000
Guinea	16,000	16,000	7,400,000	8,600,000
Guyana	1,500	1,500	700,000	900,000
India	11,300	14,000	770,000	1,400,000
Jamaica	13,300	14,000	2,000,000	2,500,000
Kazakhstan	4,700	4,600	350,000	360,000
Russia	6,000	6,000	200,000	250,000
Suriname	4,050	4,500	580,000	600,000
Venezuela	5,500	5,500	320,000	350,000
Other countries	4,070	3,900	3,400,000	4,000,000
World total (rounded)	159,000	165,000	25,000,000	32,000,000

World Resources: Bauxite resources are estimated to be 55 to 75 billion tons, located in South America (33%), Africa (27%), Asia (17%), Oceania (13%), and elsewhere (10%). Domestic resources of bauxite are inadequate to meet long-term U.S. demand, but the United States and most other major aluminum-producing countries have essentially inexhaustible subeconomic resources of aluminum in materials other than bauxite.

Substitutes: Bauxite is the only raw material used in the production of alumina on a commercial scale in the United States. However, the vast U.S. resources of clay are technically feasible sources of alumina. Other domestic raw materials, such as anorthosite, alunite, coal wastes, and oil shales, offer additional potential alumina sources. Although it would require new plants using new technology, alumina from these nonbauxitic materials could satisfy the demand for primary metal, refractories, aluminum chemicals, and abrasives. Synthetic mullite, produced from kyanite and sillimanite, substitutes for bauxite-base refractories. Although more costly, silicon carbide and alumina-zirconia substitute for bauxite-base abrasives.

[e]Estimated. NA Not available. — Zero.

[1]See also Aluminum. As a general rule, 4 tons of dried bauxite is required to produce 2 tons of alumina, which, in turn, provides 1 ton of primary aluminum metal.

[2]Includes U.S. Virgin Islands.

[3]Includes all forms of bauxite, expressed as dry equivalent weights.

[4]Calcined equivalent weights.

[5]The sum of U.S. bauxite production and net import reliance.

[6]Defined as imports – exports + adjustments for Government and industry stock changes (all in aluminum equivalents). Treated as separate commodities, the net import reliance equaled 100% for bauxite and 9% for alumina in 2005. For the years 2001-04, the net import reliance was 100% for bauxite and ranged from 7% to 29% for alumina.

[7]Aluminum equivalents.

[8]See Appendix B for definitions.

[9]See Appendix C for definitions.