

## CLAYS

(Data in thousand metric tons, unless otherwise noted)

**Domestic Production and Use:** In 1996, clays were produced in most States except Alaska, Delaware, Hawaii, Rhode Island, Vermont, and Wisconsin. The leading 90 firms supplied 83% of the output, and about 190 firms provided the remainder. Together, these firms operated about 820 mines. Estimated value of all marketable clay produced was about \$1.7 billion. Major domestic uses for specific clays were estimated as follows: kaolin—52% paper, 13% kiln furniture, 6% fiberglass, 4% paint, and 3% rubber; ball clay—25% floor and wall tile, 21% sanitaryware, and 13% pottery; fire clay—69% grogs, calcines, and firebrick; bentonite—22% foundry sand bond, 19% iron ore pelletizing, and 18% drilling mud; fuller's earth—73% absorbent uses and 12% insecticide dispersant; and common clay—50% brick, 25% cement, and 16% lightweight aggregate.

<b>Salient Statistics—United States:<sup>1</sup></b>	<b>1992</b>	<b>1993</b>	<b>1994</b>	<b>1995</b>	<b>1996<sup>e</sup></b>
Production, mine:					
Kaolin	8,740	8,830	8,770	9,480	9,530
Ball clay	854	911	1,050	993	968
Fire clay <sup>2</sup>	383	459	458	583	495
Bentonite	2,950	2,870	3,290	3,820	4,110
Fuller's earth	2,410	2,480	2,640	2,640	2,580
Common clay	<u>24,900</u>	<u>25,300</u>	<u>25,900</u>	<u>25,600</u>	<u>26,300</u>
Total <sup>3</sup>	40,200	40,700	42,000	43,100	44,000
Imports for consumption	41	39	36	35	42
Exports	4,160	4,150	4,620	4,680	4,800
Consumption, apparent 36,100	36,600	37,600	38,500	39,200	
Price, average, dollars per ton:					
Kaolin	107	107	116	117	114
Ball clay	42	42	43	46	49
Fire clay	27	25	25	22	16
Fuller's earth	100	92	92	101	102
Common clay	5	5	5	6	5
Bentonite	39	36	41	36	36
Stocks, yearend <sup>4</sup>	NA	NA	NA	NA	NA
Employment <sup>e</sup> , number: Mine	5,000	4,500	3,950	4,900	4,900
Mill	9,000	9,000	9,000	9,000	9,000
Net import reliance <sup>5</sup> as a percent of apparent consumption	E	E	E	E	E

**Recycling:** Insignificant.

**Import Sources (1992-95):** Mexico, 31%; China, 20%; United Kingdom, 20%; Canada, 15%; and other, 14%.

<b>Tariff:</b>	<b>Item</b>	<b>Number</b>	<b>Most favored nation (MFN) 12/31/96</b>	<b>Non-MFN<sup>6</sup> 12/31/96</b>
	Kaolin and other kaolinitic clays, whether or not calcined	2507.00.0000	19.5¢/mt	\$2.46/mt.
	Bentonite	2508.10.0000	23.6¢/mt	\$3.20/mt.
	Fuller's and decolorizing earths	2508.20.0000	14.8¢/mt	\$1.48/mt.
	Fire clay	2508.30.0000	29.5¢/mt	\$1.97/mt.
	Common blue and other ball clays	2508.40.0010	28¢/mt	\$1.97/mt.
	Other clays	2508.40.0050	28¢/mt	\$1.97/mt.
	Chamotte or dinas earth	2508.70.0000	Free	Free.
	Activated clays and earths	3802.90.2000	2.5% ad val.	0.6¢ per kg + 30% ad val.
	Expanded clays and mixtures	6806.20.0000	2.9% ad val.	30% ad val.

**Depletion Allowance:** Kaolin, ball clay, bentonite, fuller's earth, and fire clay, 14% (Domestic), 14% (Foreign); clay used for extraction of alumina or aluminum compounds, 22% (Domestic); clay and shale used for making brick, tile, and lightweight aggregate, 7.5% (Domestic), 7.5% (Foreign); clay used in making drainage and roofing tile, flowerpots, and kindred products, 5% (Domestic), 5% (Foreign).

**Government Stockpile:** None.

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**Events, Trends, and Issues:** The total tonnage of clays sold or used by domestic producers increased 2% in 1996. There was an increase in sales and/or use for bentonite, common clay, and kaolin. Imports for consumption increased 20% to 42,000 tons. China and the United Kingdom were the major sources for imported clays. Exports increased 3% to 4.8 million tons. Canada, Finland, Japan, and the Netherlands were major markets for exported clays. U.S. apparent consumption was estimated to be 39.2 million tons.

An International Agency for Research on Cancer (IARC) panel met in October to review the health risk posed by several forms of silica. The IARC panel concluded that there was sufficient evidence in humans for the carcinogenicity of inhaled crystalline silica in the form of quartz or cristobalite from occupational sources and inadequate evidence for amorphous silica. A monograph detailing the results of the study will be published in March 1997.

**World Mine Production, Reserves, and Reserve Base:** Not available.

**World Resources:** Clays are divided for commercial purposes into kaolin, ball clay, fire clay, bentonite, fuller's earth, and common clay. Resources of these types of clay are extremely large except for lesser resources of high-grade ball clay and sodium-bentonite. Resources of kaolin in Georgia are estimated to be 5 to 10 billion tons.

**Substitutes:** Limited substitutes and alternatives, such as talc and whiting, are available for filler and extender applications.

<sup>e</sup>Estimated. E Net exporter. NA Not available.

<sup>1</sup>Excludes Puerto Rico.

<sup>2</sup>Refractory uses only.

<sup>3</sup>Data may not add to total shown because of independent rounding.

<sup>4</sup>Data on stocks are not available and are assumed to be zero for apparent consumption and net import reliance calculations.

<sup>5</sup>Defined as imports - exports + adjustments for Government and industry stock changes.

<sup>6</sup>See Appendix B.