

CLAYS

(Data in thousand metric tons unless otherwise noted)

Domestic Production and Use: In 2004, clay and shale production was reported in 41 States. About 240 companies operated approximately 810 clay pits or quarries. The leading 20 firms supplied about 50% of the tonnage and 79% of the value for all types of clay sold or used in the United States. Domestic producers estimated that sales or use will be about 49 million tons valued at \$1.70 billion in 2004. Based on trends exhibited by the brick, construction, and paper industries, however, sales or use probably will be nearer to 42 million tons than 49 million tons. The 49 million tons probably includes crude clay production tonnages which contain considerable water content. Major domestic uses for specific clays were estimated to be as follows: ball clay—31% floor and wall tile, 20% sanitaryware, and 49% other uses; bentonite—25% pet waste absorbent, 20% drilling mud, 19% foundry sand bond, 13% iron ore pelletizing, and 23% other uses; common clay—55% brick, 19% cement, 16% lightweight aggregate, and 10% other uses; fire clay—79% refractories and 21% other uses; fuller's earth—76% absorbent uses and 24% other uses; and kaolin—54% paper, 14% refractories, and 32% other uses.

Salient Statistics—United States: ¹	2000	2001	2002	2003	2004^e
Production, mine:					
Ball clay	1,140	1,100	1,120	1,310	1,460
Bentonite	3,760	3,970	3,970	3,940	4,550
Common clay	23,700	23,200	23,000	23,100	29,700
Fire clay ²	476	383	446	400	398
Fuller's earth	2,910	2,890	2,730	3,600	3,960
Kaolin	8,800	8,110	8,010	7,680	8,780
Total ³	40,800	39,600	39,300	40,000	48,900
Imports for consumption:					
Artificially activated clay and earth	18	21	27	21	9
Kaolin	63	114	158	224	175
Other	16	13	32	50	41
Total ³	96	148	217	325	225
Exports:					
Ball clay	100	174	127	150	110
Bentonite	761	628	722	680	787
Fire clay ²	216	238	251	275	355
Fuller's earth	136	146	60	50	47
Kaolin	3,690	3,440	3,350	3,400	3,765
Clays, not elsewhere classified	357	344	449	420	516
Total ³	5,260	4,970	4,960	4,980	5,580
Consumption, apparent	35,600	34,800	34,600	35,300	43,500
Price, average, dollars per ton:					
Ball clay	42	42	42	43	39
Bentonite	41	42	45	45	40
Common clay	6	6	6	6	5
Fire clay	16	16	24	25	25
Fuller's earth	87	89	90	95	86
Kaolin	106	103	119	122	108
Stocks, yearend ⁴	NA	NA	NA	NA	NA
Employment, number: ^e					
Mine	1,500	1,400	1,350	1,320	1,250
Mill	5,800	5,800	5,200	5,000	4,980
Net import reliance ⁵ as a percentage of apparent consumption	E	E	E	E	E

Recycling: Insignificant.

Import Sources (2000-03): Brazil, 68%; Mexico, 9%; United Kingdom, 8%; Canada, 3%; and other, 12%.

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Tariff: Item	Number	Normal Trade Relations <u>12-31-04</u>
Kaolin and other kaolinitic clays, whether or not calcined	2507.00.0000	Free.
Bentonite	2508.10.0000	Free.
Fuller's and decolorizing earths	2508.20.0000	Free.
Fire clay	2508.30.0000	Free.
Common blue and other ball clays	2508.40.0010	Free.
Other clays	2508.40.0050	Free.
Chamotte or dina's earth	2508.70.0000	Free.
Activated clays and earths	3802.90.2000	2.5% ad val.
Expanded clays and mixtures	6806.20.0000	Free.

Depletion Allowance: Ball clay, bentonite, fire clay, fuller's earth, and kaolin, 14% (Domestic and foreign); clay used in the manufacture of common brick, lightweight aggregate, and sewer pipe, 7.5% (Domestic and foreign); clay used in the manufacture of drain and roofing tile, flower pots, and kindred products, 5% (Domestic and foreign); clay used for alumina and aluminum compounds, 22% (Domestic).

Government Stockpile: None.

Events, Trends, and Issues: Domestic producers estimated that sales or use of clays will be 49 million tons in 2004. This tonnage probably includes crude clay production which contains significant water content. Compensating for this problem, actual sales or use of common clay probably will be about 24 million tons, sales or use of fuller's earth will be about 3.5 million tons, and sales or use of kaolin will be about 7.6 million tons. Sales or use of ball clay, bentonite, and fire clay will be 1.46 million tons, 4.55 million tons, and 398,000 tons, respectively. Imports for consumption decreased to an estimated 225,000 tons. The major sources of imported clay were Brazil (kaolin), Canada (bentonite), Mexico (activated clay), and the United Kingdom (kaolin). Exports increased to 5.6 million tons. Major markets for exported clays, by descending order of tonnage, were Canada, Japan, Mexico, Finland, and Taiwan.

World Mine Production, Reserves, and Reserve Base: Reserves and reserve base are large in major producing countries, but data are not available.

	Bentonite		Mine production Fuller's earth		Kaolin	
	<u>2003</u>	<u>2004^e</u>	<u>2003</u>	<u>2004^e</u>	<u>2003</u>	<u>2004^e</u>
United States (sales)	3,940	4,550	3,600	3,960	7,680	8,780
Brazil (beneficiated)	175	175	—	—	1,700	1,800
Commonwealth of Independent States (crude)	750	750	—	—	5,620	5,700
Czech Republic (crude)	175	175	—	—	4,000	4,100
Germany (sales)	500	500	500	500	1,800	1,800
Greece (crude)	950	950	—	—	60	60
Italy	500	500	30	30	10	10
Korea, Republic of (crude)	—	—	—	—	2,500	2,500
Mexico	425	450	153	155	800	800
Turkey	600	600	—	—	400	400
United Kingdom (sales)	—	—	140	140	2,400	2,000
Other countries	<u>2,220</u>	<u>1,830</u>	<u>330</u>	<u>300</u>	<u>14,000</u>	<u>13,000</u>
World total (rounded)	10,200	10,500	4,750	5,100	41,000	41,000

World Resources: Resources of all clays are extremely large.

Substitutes: Alternatives, such as calcium carbonate and talc, are available for filler and extender applications.

^eEstimated. E Net exporter. NA Not available. — Zero.

¹Excludes Puerto Rico.

²Refractory uses only.

³Data may not add to total shown because of independent rounding.

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

⁵Defined as imports – exports + adjustments for Government and industry stock changes.