(Data in thousand metric tons, unless otherwise noted)

Domestic Production and Use: In 2002, clay and shale production was reported in all States except Alaska, Delaware, Hawaii, Idaho, New Hampshire, New Jersey, Rhode Island, Vermont, and Wisconsin. About 240 companies operated approximately 630 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. U.S. production was estimated to be 40.7 million metric tons valued at \$1.32 billion. Major domestic uses for specific clays were estimated to be as follows: ball clay—35% floor and wall tile, 22% sanitaryware, and 43% other uses; bentonite—28% pet waste absorbent, 23% foundry sand bond, 19% drilling mud, 16% iron ore pelletizing, and 14% other uses; common clay—56% brick, 20% cement, 16% lightweight aggregate, and 8% other uses; fire clay—72% refractories and 28% other uses; fuller's earth—75% absorbent uses and 25% other uses; and kaolin—53% paper, 12% refractories, and 35% other uses.

Salient Statistics—United States: ¹	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u> e
Production, mine:	1,130	1 200	1,140	1,100	1,070
Ball clay Bentonite		1,200			4,110
	3,820	4,070	3,760	4,290	
Common clay	24,500	24,800	23,700	23,200	24,200
Fire clay ² Fuller's earth	410	402	476	383	355
	2,350	2,560	2,910	2,890	3,400
Kaolin Total ³	9,450	<u>9,160</u>	8,800	<u>8,110</u>	7,450
	41,600	42,200	40,800	40,000	40,700
Imports for consumption:	10	47	40	04	20
Artificially activated clay and earth	19	17	18	21	20
Kaolin	53	57	63	114	155
Other	<u>14</u> 86	<u>16</u> 90	<u>16</u> 96	13	49
Total ³	86	90	96	148	224
Exports:	4.40	407	100	474	4.45
Ball clay	140	107	100	174	145
Bentonite	818	719	761	628	723
Fire clay ²	168	189	216	238	245
Fuller's earth	121	152	136	146	63
Kaolin	3,550	3,310	3,690	3,440	3,350
Clays, not elsewhere classified	432	329	357	344	464
Total ³	5,230	4,800	5,260	4,970	4,990
Consumption, apparent	36,500	37,500	35,600	35,200	35,900
Price, average, dollars per ton:					
Ball clay	45	40	42	42	40
Bentonite	46	43	41	42	44
Common clay	6	6	6	6	4
Fire clay	18	16	16	16	19
Fuller's earth	109	90	87	89	78
Kaolin	111	104	106	103	97
Stocks, yearend ⁴	NA	NA	NA	NA	NA
Employment, number: ^e					
Mine	1,550	1,500	1,500	1,500	1,350
Mill	6,100	5,700	5,800	5,800	5,200
Net import reliance ⁵ as a percentage of					
apparent consumption	E	E	E	E	E

Recycling: Insignificant.

Import Sources (1998-2001): Brazil, 55%; United Kingdom, 17%; Mexico, 13%; Canada, 5%; and other, 10%.

CLAYS

<u>Tariff</u> : Item	Number	Normal Trade Relations 12/31/02		
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); clays 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: The amount of clay and shale sold or used by domestic producers increased slightly in 2002. Increases were reported for the production of common clay and shale and fuller's earth. Imports for consumption increased 51% to 224,000 tons in 2002. The largest increase was in imports of kaolin from Brazil. Brazil, Mexico, and the United Kingdom were the major sources for imported clays. Exports increased slightly to 4.9 million tons in 2002. Canada, Finland, Japan, the Netherlands, and Taiwan were major markets for exported clays.

<u>World Mine Production, Reserves, and Reserve Base</u>: The 2001 production estimates have been revised for Brazil (kaolin), Germany (kaolin), and Greece (bentonite) based on new information from those countries. Reserves and reserve base are large in major producing countries, but data were not available.

	Mine production						
	Bentonite		Fuller's earth		Kaolin		
	<u>2001</u>	<u>2002^e</u>	<u>2001</u>	<u>2002</u> ^e	<u>2001</u>	<u>2002°</u>	
United States (sales)	4,290	4,110	2,890	3,400	8,110	7,450	
Brazil (beneficiated)	—		—	—	1,800	1,800	
Czech Republic (crude)	250		—	—	5,500	5,500	
Germany (sales)	500	500	500	500	3,770	3,770	
Greece (crude)	1,150	1,150	—	—	60	60	
Korea, Republic of (crude)			_	—	2,380	2,380	
United Kingdom (sales)			140	140	2,400	2,400	
Former Soviet Union (crude) ⁶	750	750	—	—	⁷ 5,800	⁷ 5,800	
Other countries	3,560	3,500	360	350	<u>14,300</u>	<u>14,000</u>	
World total (rounded)	10,500	10,000	3,890	4,390	44,100	43,200	

<u>World Resources</u>: Clays are divided for commercial purposes into ball clay, bentonite, common clay, fire clay, fuller's earth, and kaolin. 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 1.4 billion tons.

<u>Substitutes</u>: Limited substitutes and 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.

⁶As constituted before December 1991.

⁷Uzbekistan produced approximately 5.5 million tons of kaolin in 2001 and 2002.