CLAYS

(Data in thousand metric tons unless otherwise noted)

<u>Domestic Production and Use</u>: In 2012, clay and shale production was reported in 40 States. About 180 companies operated approximately 750 clay pits or quarries. The leading 20 firms supplied about 55% of the tonnage and 85% of the value for all types of clay sold or used in the United States. In 2012, sales or use was estimated to be 25.7 million tons valued at \$1.57 billion. Uses for specific clays were estimated to be as follows: ball clay—38% floor and wall tile, 20% sanitaryware, and 42% other uses; bentonite—30% drilling mud, 27% absorbents, 14% iron ore pelletizing, 16% foundry sand bond, and 13% other uses; common clay—46% brick, 24% lightweight aggregate, 20% cement, and 10% other uses; fire clay—57% heavy clay products, 43% refractory products and other uses; fuller's earth—75% absorbent uses and 25% other uses; and kaolin—50% paper and 50% other uses.

Salient Statistics—United States:1	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u> 2011</u>	<u>2012^e</u>
Production (sold or used):					
Ball clay	967	831	912	886	900
Bentonite	4,910	3,650	4,630	4,810	4,800
Common clay	17,500	12,500	12,100	11,700	11,900
Fire clay	296	320	216	215	230
Fuller's earth ²	2,340	2,010	2,040	1,950	2,000
Kaolin	6,740	<u>5,290</u>	5,420	<u>5,770</u>	<u>5,900</u>
Total ^{2, 3}	32,700	24,500	25,400	25,300	25,700
Imports for consumption:					
Artificially activated clay and earth	30	27	19	18	20
Kaolin	194	281	239	550	540
Other	<u>13</u> 237	<u>17</u>	_26	_33	<u>100</u>
Total ³	237	325	284	601	660
Exports:					
Ball clay	65	35	45	49	70
Bentonite	1,090	709	953	1,020	1,000
Fire clay⁴	393	328	404	371	280
Fuller's earth	127	90	100	105	95
Kaolin	2,960	2,290	2,470	2,490	2,570
Clays, not elsewhere classified	466	374	383	<u> 565</u>	_ 590
Total ³	5,100	3,830	4,360	4,600	4,600
Consumption, apparent	27,800	21,000	21,300	21,300	21,700
Price, average, dollars per ton:					
Ball clay	46	45	45	46	47
Bentonite	49	57	56	68	68
Common clay	12	12	12	12	12
Fire clay	40	38	28	29	30
Fuller's earth	98	102	98	100	102
Kaolin	134	135	145	142	145
Employment, number:					
Mine	1,060	875	828	810	900
Mill	5,020	4,540	4,400	4,200	4,300
Net import reliance ⁵ as a percentage of	•		•	•	-
apparent consumption	E	E	E	E	E
• • • • • • • • • • • • • • • • • • • •					

Recycling: Insignificant.

Import Sources (2008-11): Brazil, 80%; Mexico, 5%; Canada, 4%; United Kingdom, 2%; and other, 9%.

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<u>Tariff</u> : Item	Number	Normal Trade Relations 12–31–12
Kaolin and other kaolinitic clays,		
whether or not calcined	2507.00.0000	Free.
Bentonite	2508.10.0000	Free.
Fire clay	2508.30.0000	Free.
Common blue clay and other ball clays	2508.40.0110	Free.
Decolorizing and fuller's earths	2508.40.0120	Free.
Other clays	2508.40.0150	Free.
Chamotte or dina's earth	2508.70.0000	Free.
Activated clays and earths	3802.90.2000	2.5% ad val.
Expanded clays and other mixtures	6806.20.0000	Free.

<u>Depletion Allowance</u>: 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 from which alumina and aluminum compounds are extracted, 22% (Domestic); and ball clay, bentonite, china clay, sagger clay, and clay used or sold for use dependent on its refractory properties, 14% (Domestic).

Government Stockpile: None.

Events, Trends, and Issues: Increased commercial and residential housing construction is likely to result in slightly increased sales of common clay and fire clay for heavy clay products and ball clay for ceramic tile and sanitaryware manufacture. Bentonite sales may increase for foundry sand bond, although sales for drilling mud and pet litter were expected to decline. Fuller's earth could see slight gains as sales increase for agriculture and fluid purification applications. Kaolin production is likely to increase slightly as ceramic markets increase and paper markets stabilize.

World Mine Production and Reserves: Reserves are large in many countries, but additional data are not available.

	Mine production						
	Ben	Bentonite		Fuller's earth		Kaolin	
	<u>2011</u>	<u>2012^e</u>	<u>2011</u>	2012 ^e	<u>2011</u>	<u>2012^e</u>	
United States (sales)	4,810	4,800	² 1,950	² 2,000	5,770	5,900	
Brazil (beneficiated)	532	540	_	_	2,200	2,250	
Czech Republic (crude)	160	180	_	_	3,610	3,600	
Germany (sales)	350	350	_	_	4,900	4,500	
Greece (crude)	850	900	_	_	_	_	
Italy	110	110	3	3	640	640	
Mexico	54	54	107	100	120	120	
Spain	155	160	820	820	49	50	
Turkey	1,000	1,000	_	_	700	1,000	
Ukraine (crude)	185	210	_	_	1,100	1,300	
United Kingdom (sales)	_	_	_	_	900	900	
Uzbekistan (crude)	_	_		_	5,500	5,500	
Other countries	2,100	2,000	330	300	8,410	8,300	
World total (rounded)	10,300	10,000	² 3,210	² 3,200	33,900	34,000	

World Resources: Resources of all clays are extremely large.

<u>Substitutes</u>: Clays compete with calcium carbonate in filler and extender applications; diatomite, organic litters, polymers, silica gel, and zeolites in absorbent applications; and various siding types in building construction.

^eEstimated, E Net exporter, — Zero.

¹Excludes Puerto Rico.

²Excludes attapulgite.

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

⁴Also includes refractory-grade kaolin.

⁵Defined as imports – exports.

⁶See Appendix C for resource/reserve definitions and information concerning data sources.