CLAYS

(Data in thousand metric tons unless otherwise noted)

<u>Domestic Production and Use</u>: In 2011, clay and shale production was reported in 40 States. About 175 companies operated approximately 800 clay pits or quarries. The leading 20 firms supplied about 51% of the tonnage and 79% of the value for all types of clay sold or used in the United States. In 2011, sales or use was estimated to be 25.9 million tons valued at \$1.56 billion. Major uses for specific clays were estimated to be as follows: ball clay—39% floor and wall tile, 21% sanitaryware, and 40% other uses; bentonite—30% absorbents, 26% drilling mud, 13% iron ore pelletizing, 12% foundry sand bond, and 19% other uses; common clay—47% brick, 25% lightweight aggregate, 21% cement, and 7% other uses; fire clay—50% heavy clay products, 50% refractory products and other uses; fuller's earth—72% absorbent uses and 28% other uses; and kaolin—44% paper and 56% other uses.

Salient Statistics—United States:1	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011^e</u>
Production, mine:	4.070	207	004	0.40	0.40
Ball clay	1,070	967	831	912	940
Bentonite	4,820	4,910	3,650	4,630	4,950
Common clay	20,600	17,500	12,500	12,100	12,200
Fire clay	565	296	320	216	240
Fuller's earth	2,600	² 2,340	² 2,010	² 2,050	² 2,100
Ka <u>o</u> lin	7,110	6,740	5,290	5,370	5,480
Total ³	36,700	² 32,700	² 24,500	² 25,300	² 25,900
Imports for consumption:					
Artificially activated clay and earth	23	25	27	28	18
Kaolin	194	330	281	239	300
Other	<u>14</u> 231	_20	<u> 26</u>	<u>34</u> 301	<u>25</u>
Total ³	231	375	334	301	340
Exports:					
Ball clay	83	65	35	45	60
Bentonite	1,430	1,090	709	953	980
Fire clay⁴	425	393	328	404	390
Fuller's earth	134	127	90	100	105
Kaolin	3,300	2,960	2,290	2,470	2,500
Clays, not elsewhere classified	<u>279</u>	<u> 153</u>	<u>374</u>	<u>382</u>	<u>350</u>
Total ³	5,650	4,790	3,830	4,350	4,390
Consumption, apparent	31,300	28,300	21,000	21,300	21,900
Price, average, dollars per ton:					
Ball clay	46	46	45	46	47
Bentonite	52	49	57	59	60
Common clay	11	12	13	12	13
Fire clay	42	40	30	31	32
Fuller's earth	97	² 98	² 102	² 107	110
Kaolin	135	134	135	146	150
Employment, number: ^e					
Mine	1,150	1,060	875	828	810
Mill _	5,080	5,020	4,540	4,400	4,200
Net import reliance ⁵ as a percentage of					
apparent consumption	Е	Е	E	Е	Е
•					

Recycling: Insignificant.

Import Sources (2007-10): Brazil, 76%; Mexico, 6%; Canada, 5%; United Kingdom, 3%; and other, 10%.

CLAYS

Tariff: Item	Number	Normal Trade Relations 12-31-11
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: Markets for clays improved slightly for most clays in 2011 as the U.S. economy struggled to recover from the recession that began in 2008. Stagnant commercial and residential housing construction resulted in little increase in sales of common clay and fire clay for heavy clay products. Ball clay benefited from increased sales to ceramic tile markets. Bentonite sales increased mainly on the strength of sales to the foundry industry and, to a lesser extent, oil drilling. Kaolin production increased as world paper markets improved.

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

	Mine production							
	Ben	Bentonite		s earth	Kaolin			
	<u>2010</u>	2011 ^e	2010	2011 ^e	<u>2010</u>	<u>2011^e</u>		
United States (sales)	4,630	4,950	² 2,050	² 2,100	5,370	5,480		
Brazil (beneficiated)	265	270	_	_	2,000	2,050		
Czech Republic (crude)	183	190	_		3,490	3,550		
Germany (sales)	350	360	_		4,500	4,500		
Greece (crude)	850	890	_	_		_		
Italy	111	115	3	3	641	645		
Mexico	591	600	179	180	120	120		
Spain	155	160	820	820	485	485		
Turkey	1,200	1,500	_		800	650		
Ukraine (crude)	200	200	_	_	1,120	1,120		
United Kingdom (sales)			_		900	900		
Uzbekistan (crude)			_		5,500	5,500		
Other countries	2,100	2,100	238	240	8,170	8,300		
World total (rounded)	10,600	11,300	3,290	3,340	33,100	33,300		

World Resources: Resources of all clays are extremely large.

<u>Substitutes</u>: Clays compete with calcium carbonate in many filler and extender applications. For pet litter, clays compete with other mineral-based litters such as those manufactured using diatomite and zeolite; organic litters made from shredded corn stalks and paper, straw, and wood shavings; and litters made using silica gel. As an oil absorbent, clays compete mainly with diatomite, zeolite, and a variety of polymer and natural organic products.

^eEstimated, E Net exporter, — Zero.

¹Excludes Puerto Rico.

²Excludes attapulgite.

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

⁴Also includes some refractory-grade kaolin.

⁵Defined as imports – exports.

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