

## GYPSUM

(Data in thousand metric tons unless otherwise noted)

**Domestic Production and Use:** In 2007, domestic production of crude gypsum was estimated to be 22.0 million tons with a value of about \$165 million. The leading crude gypsum-producing States were, in descending order, Oklahoma, Iowa, Nevada, California, Arkansas, Texas, Indiana, and Michigan, which together accounted for 77% of total output. Overall, 25 companies produced gypsum in the United States at 59 mines in 17 States, and 9 companies calcined gypsum at 66 plants in 28 States. Almost 87% of domestic consumption, which totaled approximately 42.4 million tons, was accounted for by manufacturers of wallboard and plaster products. Approximately 3.5 million tons for cement production, 1.8 million tons for agricultural applications, and small amounts of high-purity gypsum for a wide range of industrial processes, such as smelting and glassmaking, accounted for the remaining tonnage. At the beginning of 2007, the capacity of operating wallboard plants in the United States was about 38.0 billion square feet<sup>1</sup> per year.

<b>Salient Statistics—United States:</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007<sup>e</sup></b>
Production:					
Crude	16,700	17,200	21,100	21,100	22,000
Synthetic <sup>2</sup>	8,300	8,400	8,690	9,290	9,300
Calcined <sup>3</sup>	20,400	23,200	21,100	26,100	25,000
Wallboard products sold (million square feet <sup>1</sup> )	33,300	34,300	36,200	35,000	36,100
Imports, crude, including anhydrite	8,300	10,100	11,200	11,400	11,200
Exports, crude, not ground or calcined	166	149	148	150	150
Consumption, apparent <sup>4</sup>	33,100	35,500	40,800	41,600	42,400
Price:					
Average crude, f.o.b. mine, dollars per metric ton	6.90	7.21	7.48	9.08	7.50
Average calcined, f.o.b. plant, dollars per metric ton	20.01	21.10	20.25	17.63	17.37
Stocks, producer, crude, yearend	1,500	1,500	1,500	1,500	1,500
Employment, mine and calcining plant, number <sup>e</sup>	5,900	5,900	5,900	5,900	6,000
Net import reliance <sup>5</sup> as a percentage of apparent consumption	25	28	27	27	26

**Recycling:** Some of the more than 4 million tons of gypsum waste that was generated by wallboard manufacturing, wallboard installation, and building demolition was recycled. The recycled gypsum was used chiefly for agricultural purposes and for the manufacture of new wallboard. Other potential markets for recycled gypsum waste are in athletic field marking, cement production as a stucco additive, grease absorption, sludge drying, and water treatment.

**Import Sources (2003-06):** Canada, 67%; Mexico, 23%; Spain, 8%; Dominican Republic, 1%; and other, 1%.

<b>Tariff:</b>	<b>Item</b>	<b>Number</b>	<b>Normal Trade Relations</b>
	Gypsum; anhydrite	2520.10.0000	<u>12-31-07</u> Free.

**Depletion Allowance:** 14% (Domestic and foreign).

**Government Stockpile:** None.

**Events, Trends, and Issues:** The United States was the world's leading producer of gypsum in 2007. The U.S. gypsum industry remained stable as the flat housing market kept demand constant. The construction of new wallboard plants and the expansion of existing plants that began in 2005 continued into 2007. These plants were expected to come online in 2008 and would result in an increase in annual domestic wallboard production capacity to about 42 billion square feet. Much of the production at new and expanded facilities will consume synthetic gypsum produced by scrubbing emissions from coal-fired electric powerplants. Increasing demand for gypsum depends principally on the strength of the construction industry—particularly in the United States, where about 95% of the gypsum consumed is used for wallboard products, building plasters, and the manufacture of portland cement. Road building and repair will continue to spur gypsum consumption in the cement industry. The construction of large wallboard plants designed to use synthetic gypsum as feedstock will result in less use of natural gypsum as the new plants become operational. In 2007, small, local shortages in wallboard supplies were met by increased imports.

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**World Mine Production, Reserves, and Reserve Base:**

	Mine production		Reserves <sup>6</sup>	Reserve base <sup>6</sup>
	2006	2007 <sup>e</sup>		
United States	21,100	22,000	700,000	Large
Algeria	1,500	1,500		
Australia	4,000	4,000		
Austria	1,000	1,000		
Brazil	1,600	1,600	1,300,000	Large
Canada	9,500	9,500	450,000	Large
China	7,500	7,700		
Egypt	2,000	2,000		
France	4,800	4,800		
Germany	1,650	1,650		
India	2,450	2,500		
Iran	13,000	13,000		
Italy	1,200	1,220		
Japan	5,950	5,950		
Mexico	7,000	7,400		
Poland	1,250	1,300		
Russia	2,200	2,400		
Spain	13,200	13,200		
Thailand	8,355	8,400		
United Kingdom	2,900	2,900		
Uruguay	1,130	1,130		
Other countries	<u>11,800</u>	<u>11,800</u>		
World total (rounded)	125,000	127,000	Large	Large

Reserves and reserve base are large in major producing countries, but data are not available.

**World Resources:** Domestic gypsum resources are adequate but unevenly distributed. Large imports from Canada augment domestic supplies for wallboard manufacturing in the United States, particularly in the eastern and southern coasts. Imports from Mexico augment domestic supplies for wallboard manufacturing along portions of the U.S. western seaboard. Large gypsum deposits occur in the Great Lakes region, the midcontinent region, and several Western States. Foreign resources are large and widely distributed; more than 90 countries produce gypsum. Spain is the leading European producer and second in the world, and supplies both crude gypsum and gypsum products to much of Western Europe. Iran ranks third in world production and supplies much of the gypsum needed for construction and reconstruction in the Middle East. Increased wallboard use and new gypsum product plants in Asia led to increased production in that region. As more cultures recognize the economics and efficiency of building with wallboard, worldwide production of gypsum should increase proportionally.

**Substitutes:** In such applications as stucco and plaster, cement and lime may be substituted; brick, glass, metallic or plastic panels, and wood may be substituted for wallboard. Gypsum has no practical substitute in the manufacturing of portland cement. Synthetic gypsum generated by various industrial processes, including flue gas desulfurization of smokestack emissions, is very important as a substitute for mined gypsum in wallboard manufacturing, cement production, and agricultural applications (in descending tonnage order). In 2007, synthetic gypsum accounted for 22% of the total domestic gypsum supply.

<sup>e</sup>Estimated.

<sup>1</sup>The standard unit used in the U.S. wallboard industry is square feet. Multiply square feet by  $9.29 \times 10^{-2}$  to convert to square meters.

<sup>2</sup>Data refer to the amount sold or used, not produced.

<sup>3</sup>From domestic crude.

<sup>4</sup>Defined as crude + total synthetic reported used + imports – exports + adjustments for industry stock changes.

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

<sup>6</sup>See Appendix C for definitions.