

## GYPSUM

(Data in thousand metric tons unless otherwise noted)

**Domestic Production and Use:** In 2009, domestic production of crude gypsum was estimated to be 9.4 million tons with a value of about \$79.9 million. The leading crude gypsum-producing States were, in descending order, Nevada, Iowa, California, Oklahoma, Texas, Arkansas, New Mexico, Indiana, and Michigan, which together accounted for 79% of total output. Overall, 46 companies produced gypsum in the United States at 55 mines in 18 States, and 9 companies calcined gypsum at 57 plants in 29 States. Approximately 88% of domestic consumption, which totaled approximately 21 million tons, was accounted for by manufacturers of wallboard and plaster products. Approximately 2 million tons for cement production, 1 million tons for agricultural applications, and small amounts of high-purity gypsum for a wide range of industrial processes accounted for the remaining tonnage. At the beginning of 2009, the production capacity of operating wallboard plants in the United States was about 26.8 billion square feet<sup>1</sup> per year.

<b>Salient Statistics—United States:</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009<sup>e</sup></b>
Production:					
Crude	21,100	21,100	17,900	14,400	9,400
Synthetic <sup>2</sup>	8,690	9,290	8,500	7,740	7,700
Calcined <sup>3</sup>	21,000	26,100	16,700	18,000	14,000
Wallboard products sold (million square feet <sup>1</sup> )	28,700	35,000	27,800	20,700	18,500
Imports, crude, including anhydrite	11,200	11,400	9,400	7,300	4,200
Exports, crude, not ground or calcined	148	143	147	149	120
Consumption, apparent <sup>4</sup>	40,800	41,600	35,700	29,300	21,000
Price:					
Average crude, f.o.b. mine, dollars per metric ton	7.48	8.83	7.50	8.70	8.50
Average calcined, f.o.b. plant, dollars per metric ton	37.18	41.79	38.30	42.64	40.00
Employment, mine and calcining plant, number <sup>e</sup>	5,900	5,900	6,000	5,400	4,500
Net import reliance <sup>5</sup> as a percentage of apparent consumption	27	27	26	24	19

**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 primarily for agricultural purposes and feedstock for the manufacture of new wallboard. Other potential markets for recycled gypsum include athletic field marking, cement production as a stucco additive, grease absorption, sludge drying, and water treatment.

**Import Sources (2005-08):** Canada, 67%; Mexico, 25%; Spain, 7%; and other, 1%.

<b>Tariff:</b>	<b>Item</b>	<b>Number</b>	<b>Normal Trade Relations</b>
	Gypsum; anhydrite	2520.10.0000	<b>12-31-09</b> Free.

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

**Government Stockpile:** None.

**Events, Trends, and Issues:** U.S. gypsum production declined as the housing and construction markets continued to falter, with apparent consumption decreasing by about 28%. China produced more than three times the annual amount of the United States, the world's second ranked producer. Iran ranks third in world production and supplies much of the gypsum needed for construction in the Middle East. Spain, the leading European producer, ranked fourth in the world, and supplies both crude gypsum and gypsum products to much of Western Europe. An increased use of wallboard in Asia, coupled with new gypsum product plants, heightened production in that region. As more cultures recognize the economics and efficiency of wallboard, worldwide production of gypsum is expected to increase.

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 building plasters, the manufacture of portland cement, and wallboard products. The construction of wallboard plants designed to use synthetic gypsum as feedstock will result in less use of natural gypsum as these new plants become operational. Imports decreased by approximately 42%. Exports, although very low compared with imports, decreased by 19%.

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In 2009, more than 2,000 homeowner complaints were filed with the U.S. Consumer Product Safety Commission regarding reports of corrosive drywall. The problematic drywall, which is suspected of causing health ailments and the corrosion of metal components within an affected home, is thought to have been imported from China in 2006 and 2007. According to the U.S. International Trade Commission, more than 600 metric tons of Chinese drywall was imported into the United States in 2009, which represented less than 1% of total 2009 imports.

### World Mine Production and Reserves:

	Mine production		Reserves <sup>6</sup>
	2008	2009 <sup>e</sup>	
United States	14,400	9,400	700,000
Algeria	1,670	1,700	
Argentina	1,200	1,200	
Australia	4,000	4,000	
Austria	1,000	1,000	
Brazil	2,100	2,100	1,300,000
Canada	5,740	5,500	450,000
China	46,000	42,000	
Egypt	2,000	2,000	
France	4,800	4,800	
Germany	1,900	1,900	
India	2,550	2,600	
Iran	12,000	12,000	
Italy	5,400	5,400	
Japan	5,800	5,800	
Mexico	5,140	4,500	
Poland	1,580	1,300	
Russia	2,300	2,300	
Saudi Arabia	2,300	2,300	
Spain	11,500	11,500	
Thailand	8,000	8,000	
Turkey	3,000	3,000	
United Kingdom	1,700	1,700	
Other countries	<u>12,700</u>	<u>16,000</u>	
World total (rounded)	159,000	152,000	Large

Reserves are large in major producing countries, but data for most 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 coastal regions. Imports from Mexico supplement 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; 86 countries produce gypsum.

**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 2009, synthetic gypsum accounted for 57% 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.

<sup>5</sup>Defined as imports – exports.

<sup>6</sup>See Appendix C for definitions. Reserve base estimates were discontinued in 2009; see [Introduction](#).