

GYPSUM

(Data in thousand metric tons unless otherwise noted)

Domestic Production and Use: In 2018, domestic production of crude gypsum was estimated to be 21 million tons with a value of about \$168 million. The leading crude gypsum-producing States were Colorado, Iowa, Kansas, Nevada, Oklahoma, and Texas, which together accounted for an estimated 67% of total output. Overall, 47 companies produced or processed gypsum in the United States at 50 mines in 16 States. The majority of domestic consumption, which totaled approximately 48 million tons, was used by agriculture, cement production, and manufacturers of wallboard and plaster products. Small quantities of high-purity gypsum, used in a wide range of industrial processes, accounted for the remaining tonnage. At the beginning of 2018, the production capacity of operating wallboard plants in the United States was about 33.4 billion square feet¹ per year. Total wallboard sales were estimated to be 25.5 billion square feet.

Salient Statistics—United States:	2014	2015	2016	2017	2018^e
Production:					
Crude	18,300	18,800	19,800	20,700	21,000
Synthetic ²	15,200	15,500	16,700	20,700	22,000
Calcined ³	16,100	16,500	17,900	17,800	18,000
Wallboard products sold (million square feet ¹)	21,500	22,100	24,400	25,000	25,500
Imports, crude, including anhydrite	3,720	4,030	4,340	4,890	5,400
Exports, crude, not ground or calcined	67	63	43	36	34
Consumption, apparent ⁴	37,100	38,200	40,700	46,300	48,000
Price:					
Average crude, free on board (f.o.b.) mine, dollars per metric ton	8.00	7.80	8.00	7.50	7.80
Average calcined, f.o.b. plant, dollars per metric ton	27.00	28.00	30.00	30.00	31.00
Employment, mine and calcining plant, number ^e	4,500	4,500	4,500	4,500	4,500
Net import reliance ⁵ as a percentage of apparent consumption	10	10	11	10	11

Recycling: Approximately 700,000 tons of gypsum scrap that was generated by wallboard manufacturing was recycled onsite. The recycling of wallboard from new construction and demolition sources also took place, although those amounts are unknown. 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 (2014–17): Mexico, 41%; Canada, 30%; Spain, 27%; and other, 2%.

Tariff:	Item	Number	Normal Trade Relations
	Gypsum; anhydrite	2520.10.0000	<u>12–31–18</u> Free.

Depletion Allowance: 14% (Domestic and foreign).

Government Stockpile: None.

Events, Trends, and Issues: U.S. gypsum production increased slightly compared with that of 2017. Apparent consumption increased by 4% compared with that of 2017. The world's leading crude gypsum producer, the United States, produced an estimated 21 million tons. Iran, tied for second with China in world production, supplied much of the gypsum needed for construction in the Middle East. China and Iran each produced an estimated 16 million tons. Spain, the leading European producer, ranked seventh in the world and supplied crude gypsum and gypsum products to much of Western Europe. Increased use of wallboard in Asia, coupled with new gypsum product plants, spurred increased production in that region. As wallboard becomes more widely used in other regions, worldwide production of gypsum is expected to increase.

Prior year chapters of this commodity included gypsum production for China that totaled as much as 130 million tons. However, recently acquired information revealed that the vast majority of that amount was likely synthetic gypsum, which is not "mine production." Hence, the large decrease in reported gypsum in China reflects a recategorization of gypsum material and should not be interpreted as a large decrease in the overall total world production of gypsum nor the production of gypsum in China.

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Demand for gypsum depends principally on construction industry activity, particularly in the United States, where the majority of gypsum consumed is used for building plasters, the manufacture of portland cement, and wallboard products. If the construction of wallboard manufacturing plants designed to use synthetic gypsum from coal flue gas desulfurization (FGD) units as feedstock continues, this could result in less mining of natural gypsum. The availability of inexpensive natural gas, however, may limit the additional construction of FGD units and, therefore, the use of synthetic gypsum in wallboard. U.S. gypsum imports increased by 10% compared with those of 2017. Exports, although very low compared with imports and often subject to wide fluctuations, decreased by 6%.

World Mine Production and Reserves: Reserves for Brazil, India, and Turkey were revised based on Government and other public data.

	Mine production		Reserves ⁶
	2017	2018 ^e	
United States	20,700	21,000	700,000
Algeria	2,200	2,200	NA
Argentina	1,500	1,500	NA
Australia	14,700	15,000	NA
Brazil	3,400	3,400	340,000
Canada	1,700	1,700	450,000
China	15,500	16,000	NA
Egypt	2,200	2,200	NA
France	4,200	4,200	NA
Germany	3,100	3,100	NA
India	2,700	2,700	36,000
Iran	16,000	16,000	1,600
Japan	4,700	4,700	NA
Mexico	5,400	5,400	NA
Oman	5,500	5,500	4,900
Pakistan	2,000	2,000	NA
Russia	4,000	4,000	NA
Saudi Arabia	3,150	3,200	NA
Spain	7,000	7,000	NA
Thailand	9,250	9,300	NA
Turkey	9,000	9,000	200,000
Other countries	16,100	21,000	NA
World total (rounded)	154,000	160,000	Large

World Resources: Reserves are large in major producing countries, but data for most are not available. 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; 82 countries were thought to produce gypsum in 2018.

Substitutes: In such applications as stucco and plaster, cement and lime may be substituted for gypsum; 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 FGD of smokestack emissions, is very important as a substitute for mined gypsum in wallboard manufacturing, cement production, and agricultural applications (in descending order by tonnage). In 2018, synthetic gypsum accounted for more than 50% of the total domestic gypsum supply.

^eEstimated. NA Not available.

¹The standard unit used in the U.S. wallboard industry is square feet; multiply square feet by 9.29×10^{-2} to convert to square meters. Source: The Gypsum Association.

²Data refer to the amount sold or used, not produced. Source: American Coal Ash Association.

³From domestic crude and synthetic.

⁴Defined as crude production + total synthetic reported used + imports – exports.

⁵Defined as imports – exports.

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