

STRONTIUM

(Data in metric tons of strontium content¹ unless otherwise noted)

Domestic Production and Use: Although deposits of strontium minerals occur widely throughout the United States, strontium minerals have not been mined in the United States since 1959. Domestic production of strontium carbonate, the principal strontium compound, ceased in 2006. A few domestic companies produce small quantities of downstream strontium chemicals. Estimates of primary strontium compound end uses in the United States were pyrotechnics and signals, 30%; ferrite ceramic magnets, 30%; master alloys, 10%; pigments and fillers, 10%; electrolytic production of zinc, 10%; and other applications, including glass, 10%.

<u>Salient Statistics—United States:</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012^e</u>
Production	—	—	—	—	—
Imports for consumption:					
Strontium minerals	2,030	6,420	2,370	7,320	8,400
Strontium compounds	9,420	5,860	8,640	10,000	8,000
Exports, compounds	70	94	72	18	75
Consumption, apparent, celestite and compounds	11,400	12,200	10,900	17,300	16,300
Price, average value of mineral imports at port of exportation, dollars per ton	64	47	45	46	50
Net import reliance ² as a percentage of apparent consumption	100	100	100	100	100

Recycling: None.

Import Sources (2008–11): Strontium minerals: Mexico, 100%. Strontium compounds: Mexico, 63%; Germany, 19%; China, 15%; and other, 3%. Total imports: Mexico, 78%; Germany, 11%; China, 9%; and other, 2%.

<u>Tariff:</u>	<u>Item</u>	<u>Number</u>	<u>Normal Trade Relations</u>
			<u>12–31–12</u>
	Celestite	2530.90.8010	Free.
	Strontium metal	2805.19.1000	3.7% ad val.
	Compounds:		
	Strontium oxide, hydroxide, peroxide	2816.40.1000	4.2% ad val.
	Strontium nitrate	2834.29.2000	4.2% ad val.
	Strontium carbonate	2836.92.0000	4.2% ad val.

Depletion Allowance: 22% (Domestic), 14% (Foreign).

Government Stockpile: None.

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Events, Trends, and Issues: Strontium compounds are mostly consumed by the ceramics and glass and pyrotechnics industries, with smaller amounts consumed by a multitude of other industries. Ceramics and glass manufacture remained the top end-use industries through strontium's use in ceramic ferrite magnets and other ceramic and glass applications. The use of strontium nitrate in pyrotechnics was thought to equal the use of strontium carbonate in ferrite magnets.

With expected improvements to global economic conditions, demand for strontium carbonate in more traditional applications is expected to increase. Use of strontium by the ceramics, glass, and pyrotechnic industries is expected to continue, with solid demand for strontium used in ferrite magnets. With improvements in advanced applications, consumption of strontium in new end uses may increase.

In descending order of production, China, Spain, and Mexico are the world's leading producers of celestite. China also is a major importer of celestite. Iranian celestite production was expected to increase owing to increased exports to China.

World Mine Production and Reserves:³

	Mine production		Reserves ⁴
	2011	2012 ^e	
United States	—	—	—
Argentina	8,000	8,000	All other:
China	190,000	190,000	6,800,000
Iran	2,000	2,000	
Mexico	31,500	31,500	
Morocco	2,500	2,500	
Spain	140,000	145,000	
Turkey	1,100	1,100	
World total (rounded)	375,000	380,000	6,800,000

World Resources: World resources of strontium are thought to exceed 1 billion tons.

Substitutes: Barium can be substituted for strontium in ferrite ceramic magnets; however, the resulting barium composite will have reduced maximum operating temperature when compared with that of strontium composites. Substituting for strontium in pyrotechnics is hindered by difficulty in obtaining the desired brilliance and visibility imparted by strontium and its compounds.

^eEstimated. — Zero.

¹The strontium content of celestite is 43.88%; this factor was used to convert units of celestite to strontium content.

²Defined as imports – exports + adjustments for Government and industry stock changes.

³Metric tons of strontium minerals.

⁴[See Appendix C for resource/reserve definitions and information concerning data sources.](#)