



# 2013 Minerals Yearbook

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## TALC AND PYROPHYLLITE [ADVANCE RELEASE]

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# TALC AND PYROPHYLLITE

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Talc markets continued to recover from the recession of 2008–09. Production, sales, and apparent consumption in 2013 were greater than those of 2009, the year in which they were at their lowest level since 1949. In 2013, talc production increased by 5% to 542,000 metric tons (t) valued at \$20.8 million from 515,000 t valued at \$17.1 million in 2012 (table 1). The quantity of talc sold decreased by 3% to 560,000 t valued at \$91.3 million from 575,000 t valued at \$87.2 million in 2012. U.S. apparent consumption increased by 5% to 622,000 t in 2013 from 595,000 t in 2012. Exports of talc decreased by 30% to 189,000 t valued at \$52.8 million in 2013 from 270,000 t valued at \$56.8 million in 2012. Imports decreased by 23% to 269,000 t valued at \$111 million in 2013 from 350,000 t valued at \$109 million in 2012. U.S. production and sales of pyrophyllite remained essentially unchanged from that of 2012. The United States was the third leading producer of talc, following China and India. World production of talc and pyrophyllite increased slightly to 6.9 million metric tons (Mt) in 2013 from 6.81 Mt in 2012 (table 5).

## Legislation and Government Programs

In 2013, the U.S. Department of Defense authorized the disposal of 865 t of block and lump talc and 621 t of ground talc, which represented the entire uncommitted inventory of the National Defense Stockpile. No talc was sold from the stockpile in 2013.

## Production

**Talc.**—Domestic production data were obtained through a voluntary survey of U.S. mining companies conducted by the U.S. Geological Survey (USGS). Survey forms were sent to six talc companies and responses were received from four. Responses accounted for about 80% of the production data presented in table 1. Data for nonrespondents were estimated from prior year data adjusted according to the survey responses provided by the nonrespondents' mill operations, trends in production for reporting talc producers, and (or) Mine Safety and Health Administration (MSHA) employment data.

Four companies mined talc in 2013, operating six mines in four States. All were open pit mining operations. The producers were, in alphabetical order, Alberene Soapstone Co. in Virginia, American Talc Co. in Texas, Imerys Talc America in Montana and Vermont, and Specialty Minerals Inc. (a subsidiary of Minerals Technologies Inc.) in Montana. CAL-TALC, Inc. in California worked from stockpiles in 2013. One additional company did not mine or sell talc in 2013. The three leading domestic producers, American Talc, Imerys, and Specialty Minerals, collectively, accounted for nearly all the U.S. tonnage mined.

U.S. mine production increased by 5% to 542,000 t valued at \$20.8 million from 515,000 t valued at \$17.1 million in 2012 (table 1). Production increased in Montana and Vermont and decreased in Texas and Virginia. Montana led all States in the tonnage of talc produced, followed by Texas, Vermont, and Virginia.

**Pyrophyllite.**—Domestic production data for pyrophyllite (a hydrous aluminum silicate with a structure similar to talc) were acquired through a voluntary USGS survey of the two U.S. companies. One company responded to the survey. Data for the nonrespondent were estimated from previously reported data adjusted according to consuming industry trends and MSHA employment data.

Standard Mineral Co., the leading U.S. pyrophyllite producer, operated two mines in North Carolina. Standard Industrial Minerals, Inc. had one mine in California, which was idle in 2013. U.S. pyrophyllite production was essentially unchanged in 2013. Domestic data were withheld to avoid revealing company proprietary data.

## Consumption

Domestic sales data for talc and pyrophyllite were developed by the USGS from a voluntary survey of U.S. mills. Survey forms were sent to seven companies operating nine mills in six States for talc and two companies operating two mills in two States for pyrophyllite. Responses from five companies accounted for more than 80% of the talc data presented in table 2. Sales for nonrespondents were estimated using preliminary data adjusted according to survey responses provided by the nonrespondents' mining operations, prior year data adjusted according to trends in production for reporting talc producers and consuming industries, and (or) MSHA employment data.

**Talc.**—In 2013, sales and use decreased by 3% to 560,000 t of talc valued at \$91.3 million from 575,000 t valued at \$87.2 million in 2012 (table 1). This decline was associated with decreased talc exports in 2013. U.S. producers reported that talc sold for domestic use increased by 3% to 475,000 t in 2013 from 463,000 t in 2012 (table 2). Ceramics (mainly for ceramic tile) was the leading market, followed by paper (mainly pitch control), paint (filler and extender), other and (or) unknown uses, roofing (bitumen filler and surface coating), plastics (filler and extender), rubber (filler and dusting agent), and cosmetics, in decreasing order of tonnage (table 2). Sales to rubber markets increased by 9%, sales to plastics markets increased by 6%, and sales to ceramics markets increased by 5%.

Most of the 269,000 t of imported talc listed in table 4 was not included in the domestic end-use data in table 2. More than 50% of talc imports were thought to be used for manufacturing plastic components. Combining domestic sales by U.S.

producers (table 2) with U.S. use of imported talc, major end-use markets in the United States were, in decreasing order of consumption, plastics, ceramics, paint, paper, other (unspecified or unknown), roofing, cosmetics, and rubber.

**Pyrophyllite.**—In 2013, domestic consumption of pyrophyllite remained essentially unchanged from that of 2012; data were withheld to avoid disclosing company proprietary data. Pyrophyllite was used in refractory products, paint, ceramics, and unspecified applications, in decreasing order of consumption. Refractory uses accounted for more than 50% of domestic pyrophyllite sales.

## Prices

In 2013, the unit value of mine-run crude talc was estimated to be \$38 per metric ton compared with \$33 per ton in 2012 (table 1). Most crude talc was sorted to remove waste and underwent primary crushing and screening before sale so its unit value would likely range from \$50 to \$70 per ton. The average reported unit value of milled talc increased to \$163 per ton in 2013 from \$152 per ton in 2012 owing to two domestic talc producers reporting higher unit values in 2013. The unit value of crude and milled pyrophyllite was unchanged from that of 2012.

In 2013, the average free alongside ship unit value of all exports increased to \$279 per ton compared with \$210 per ton in 2012 (table 1). The average value of talc exports not crushed or powdered (unmilled talc) under Harmonized Tariff Schedule (HTS) 2526.10.00 was \$1,650 per ton in 2013 compared with \$441 per ton in 2012. Low-tonnage shipments, some of extremely high value, contributed to the increase in the unit value. High unit values for some of the unground talc exports suggest that specialty talc products, such as surface-treated milled talc, and (or) consumer talc products, such as talcum powder, may have been included under this HTS code. Exports of talc crushed or powdered (milled talc) under HTS code 2526.20.00 increased to \$253 per ton in 2013 from \$204 per ton in 2012. Unit values of low-tonnage exports of milled talc increased considerably in 2013, and those for high-tonnage exports increased only slightly.

The average customs unit value for all talc imports was \$411 per ton in 2013 compared with \$313 per ton in 2012 (table 1). The average unit value for imports of unground (not crushed or powdered) talc (HTS code 2526.10.00) was \$1,090 per ton in 2013, a substantial increase from \$468 per ton in 2012. This was attributed mainly to imports of low-tonnage, high-value talc from Australia, Hong Kong (probably transshipped from China), South Africa (probably pyrophyllite), and Taiwan (probably transshipped from China). As with exports, the high unit values of some shipments suggest that some imports may have been specialty talc products or talc-based consumer goods. The average customs value for ground (crushed or powdered) talc (HTS code 2526.20.00) was \$269 per ton in 2013, an increase from \$230 per ton in 2012. The average customs value for cut or sawed talc (HTS code 6815.99.20) was \$1,190 per ton in 2013, compared with \$1,090 per ton in 2012.

## Foreign Trade

U.S. talc exports decreased by 30% in tonnage to 189,000 t valued at \$52.8 million in 2013 from 270,000 t valued at \$56.8 million in 2012. Mexico, Belgium, Colombia, France, Singapore, China, and Japan, in descending order of quantity, accounted for 72% of the decline in U.S. talc exports in 2013. Partial trade data from the United Nations for 2013 suggest that most of the major global suppliers and not just the United States experienced a decline in talc exports (United Nations, undated). By tonnage, Mexico was the leading destination for talc exported from the United States with 37% of the quantity, followed by Canada with 35% (table 3). About 99% of talc exports were milled.

In 2013, U.S. talc imports decreased by 23% to 269,000 t valued at \$111 million from 350,000 t valued at \$109 million in 2012. Part of the decline in imports in 2013 may have resulted from increased imports and a buildup of inventories in 2012. By tonnage, Pakistan was the leading source for imported talc in 2013, accounting for 33% of the tonnage; followed by Canada, 31%; China, 24%; and Japan, 6% (table 4). Shipments from Pakistan were likely to have included talc from Afghanistan, which shipped its talc through Karachi, Pakistan. Much of the imported tonnage from Japan likely was pyrophyllite rather than talc. About 84% of talc imports was crushed or powdered; 3% was not crushed or powdered; and 13% was cut or sawed. China was the source of 90% of the unground talc imports in 2013. Pakistan, Canada, and China accounted for 39%, 31%, and 21%, respectively, of milled talc imports. Canada accounted for 38% of cut or sawed talc imports; Germany, 29%; and China, 24%.

## World Review

World production of talc and pyrophyllite was estimated to be 6.9 Mt in 2013, a slight increase from 6.81 Mt in 2012. China was the world's leading producer of talc, followed by, in decreasing order of quantity, India, the United States, Finland, and France (crude). The Republic of Korea was the leading producer of pyrophyllite, followed by Brazil and Japan. Brazil, China, Finland, France, India, Japan, the Republic of Korea, and the United States collectively produced 83% of the world's talc and pyrophyllite (table 5).

## Outlook

Industries that consume talc and pyrophyllite, including automobiles and other vehicles; paints, coatings, and adhesives; and plastics and rubber products, increased their output in 2013 (U.S. Census Bureau, 2014). Growth in these industry sectors suggests that sales of talc used in catalytic converter bodies (ceramics); automotive and truck body and underhood components (plastics); paint and coatings (fillers and extenders); and plastics and rubber (fillers and extenders in plastic products, tires, and other rubber components) may increase slightly in 2014.

Sales of talc to manufacturers of such items as adhesives, caulks, ceramics (mainly tile), joint compounds, paint,

putties, and roofing materials were tied to commercial and residential construction and renovation. U.S. construction starts for new privately owned housing increased by 18% to 923,000 units in 2013 from 781,000 units in 2012 (U.S. Census Bureau, undated). This increase in commercial and residential construction suggests that sales of talc for construction-related markets may increase in 2014. Sales of pyrophyllite also may increase slightly in 2014 as the economy expands.

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## GENERAL SOURCES OF INFORMATION

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TABLE 1  
SALIENT TALC AND PYROPHYLLITE STATISTICS<sup>1</sup>

(Thousand metric tons and thousand dollars)

	2009	2010	2011	2012	2013
<b>United States:</b>					
<b>Mine production, crude:</b>					
<b>Quantity:</b>					
Talc	511	604	616	515	542
Pyrophyllite	W	W	W	W	W
<b>Value:</b>					
Talc	14,600	19,100	21,800	17,100	20,800
Pyrophyllite	W	W	W	W	W
<b>Sold by producers, crude and processed:</b>					
<b>Quantity:</b>					
Talc	512	567	567	575	560
Pyrophyllite	W	W	W	W	W
<b>Value:</b>					
Talc	57,200	84,900	87,700	87,200	91,300
Pyrophyllite	W	W	W	W	W
<b>Exports, talc:<sup>2</sup></b>					
Quantity	188	240	223	270 <sup>r</sup>	189
Value	37,600	54,300	52,700	56,800 <sup>r</sup>	52,800
<b>Imports for consumption, talc:</b>					
Quantity	134	242	285	350 <sup>r</sup>	269
Value	47,900	67,100	77,100	109,000	111,000
Apparent consumption <sup>3</sup>	457	606	678	595 <sup>r</sup>	622
World, production	6,870 <sup>r</sup>	6,830 <sup>r</sup>	6,910 <sup>r</sup>	6,810 <sup>r</sup>	6,900 <sup>e</sup>

<sup>e</sup>Estimated. <sup>r</sup>Revised. W Withheld to avoid disclosing company proprietary data.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Excludes powder—talcum (in package), face, and compact.

<sup>3</sup>Production plus imports minus exports.

TABLE 2  
END USES FOR TALC PRODUCED IN THE UNITED STATES

(Metric tons)

End use	2012	2013
Ceramics <sup>1</sup>	116,000	122,000
Cosmetics	15,200	15,300
Paint	89,200	91,300
Paper	101,000	102,000
Plastics	37,100	39,400
Roofing	42,100	42,200
Rubber	14,100	15,400
Other <sup>2</sup>	48,600	47,500
Total	463,000	475,000

<sup>1</sup>Includes tile.

<sup>2</sup>Includes art sculpture, construction caulks, insecticides, joint compound, and other uses not specified.

TABLE 3  
U.S. EXPORTS OF TALC<sup>1</sup>

(Metric tons and thousand dollars)

Country	2012		2013	
	Quantity	Value <sup>2</sup>	Quantity	Value <sup>2</sup>
Belgium	8,680	2,730	3,160	3,470
Brazil	10,300	2,210	25,500	2,590
Canada <sup>3</sup>	66,600	12,300	66,500	12,200
Chile	6,860	3,090	6,980	3,460
China	9,430	2,260	4,970	2,140
France	6,750	753	1,150	625
Japan	6,940	1,300	3,280	1,360
Mexico	97,400 <sup>r</sup>	15,400 <sup>r</sup>	70,300	11,100
Singapore	10,900	3,170	6,220	2,870
Other <sup>4</sup>	46,600 <sup>r</sup>	13,700	1,170	12,900
Total	271,000 <sup>r</sup>	56,800 <sup>r</sup>	189,000	52,800

<sup>r</sup>Revised.

<sup>1</sup>Excludes powders—talcum (in package), face, and compact.

<sup>2</sup>Free alongside ship.

<sup>3</sup>Probably includes shipments in transit through Canadian ports.

<sup>4</sup>Includes 54 countries in 2012 and 49 countries in 2013.

Source: U.S. Census Bureau; data adjusted by the U.S. Geological Survey.

TABLE 4  
U.S. IMPORTS FOR CONSUMPTION OF TALC, BY COUNTRY<sup>1</sup>

Country	Not crushed or powdered		Crushed or powdered		Cut and sawed		Total unmanufactured	
	Quantity (metric tons)	Value <sup>2</sup> (thousands)	Quantity (metric tons)	Value <sup>2</sup> (thousands)	Quantity (metric tons)	Value <sup>2</sup> (thousands)	Quantity (metric tons)	Value <sup>2</sup> (thousands)
2012:								
Brazil	38	\$71	91	\$27	1,460	\$1,830	1,590	\$1,920
Canada	36	77	64,000	26,800	16,000	14,900	80,000	41,800
China	15,500	5,230	34,300	8,820	5,090	5,980	55,000	20,000
France	--	--	2,090	529	5	23	2,090	552
Italy	--	--	22,200	5,220	--	--	22,200	5,220
Japan	--	--	2,800	2,240	82	332	2,890	2,570
Pakistan	2,200	4,470	131,000	21,500	--	--	133,000	25,900
Other	10,800	3,530	39,600 <sup>r</sup>	2,960 <sup>r</sup>	3,090	4,990	53,400 <sup>r,3</sup>	11,500 <sup>r,3</sup>
Total	28,600	13,400	296,000 <sup>r</sup>	68,000 <sup>r</sup>	25,700	28,100	350,000 <sup>r</sup>	109,000
2013:								
Austria	--	--	--	--	966	2,210	966	2,210
Brazil	--	--	--	--	1,540	1,980	1,540	1,980
Canada	7	18	70,800	29,100	12,700	11,600	83,600	40,700
China	7,910	5,140	48,000	11,500	7,900	8,700	63,800	25,300
France	40	9	716	445	--	--	756	454
Italy	--	--	1,070	1,100	29	51	1,100	1,150
Japan	--	--	17,100	1,160	75	493	17,200	1,660
Pakistan	605	1,220	87,700	16,600	--	--	88,300	17,800
Other	188	3,150	1,510	1,370	10,300	14,900	12,000 <sup>3</sup>	19,400 <sup>3</sup>
Total	8,750	9,540	227,000	61,200	33,500	40,000	269,000	111,000

<sup>r</sup>Revised. -- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>U.S. Customs declared value.

<sup>3</sup>Includes 34 countries in 2012 and 30 countries in 2013.

Source: U.S. Census Bureau.

TABLE 5  
TALC AND PYROPHYLLITE: WORLD PRODUCTION, BY COUNTRY AND PRODUCT<sup>1,2</sup>

(Metric tons)

Country <sup>3</sup>	2009	2010	2011 <sup>c</sup>	2012 <sup>c</sup>	2013 <sup>c</sup>
Argentina, talc and related materials	22,762	24,820	24,379 <sup>4</sup>	22,000	22,000
Australia: <sup>e,5</sup>					
Chlorite, pyrophyllite, steatite, talc	90,000 <sup>r</sup>	100,000 <sup>r</sup>	120,000 <sup>r</sup>	120,000 <sup>r</sup>	110,000
Pyrophyllite	-- <sup>r</sup>	-- <sup>r</sup>	-- <sup>r</sup>	-- <sup>r</sup>	--
Talc	-- <sup>r</sup>	-- <sup>r</sup>	-- <sup>r</sup>	-- <sup>r</sup>	--
Austria, soapstone and talc, crude	111,388	138,367	132,018 <sup>4</sup>	134,665 <sup>r,4</sup>	135,000
Bhutan, talc	64,381	26,302	8,562 <sup>r,4</sup>	16,062 <sup>r,4</sup>	15,000
Brazil, talc and pyrophyllite	543,959	507,085	539,745 <sup>4</sup>	550,000	550,000
Canada, pyrophyllite, soapstone, talc	44,000	96,000	147,000	154,000	175,000
Chile, talc	1,202	1,364	349 <sup>4</sup>	730 <sup>r</sup>	750
China, unspecified <sup>c</sup>	2,300,000	2,000,000	2,100,000 <sup>r</sup>	2,200,000	2,200,000
Egypt, pyrophyllite, soapstone, steatite, talc <sup>c</sup>	44,000	12,934 <sup>4</sup>	48,000	45,000	50,000
Finland, talc	375,302	419,345	429,494 <sup>4</sup>	440,000	440,000
France, talc, crude <sup>c</sup>	420,000	420,000	420,000	420,000	420,000
Guatemala, talc	6,355	2,175	8,187 <sup>4</sup>	2,311 <sup>r,4</sup>	5,000
India: <sup>e</sup>					
Pyrophyllite	88,000	90,000	90,000	92,000	93,000
Steatite	550,000	550,000	560,000	570,000	570,000
Iran, talc <sup>6</sup>	66,383	95,767	58,887 <sup>r,4</sup>	60,000 <sup>r</sup>	60,000
Italy, steatite and talc <sup>c</sup>	112,000 <sup>r</sup>	110,000 <sup>r</sup>	110,000 <sup>r</sup>	110,000 <sup>r</sup>	110,000
Japan: <sup>e</sup>					
Pyrophyllite	340,000	340,000	350,000	340,000	350,000
Talc	25,000	24,000	24,000	25,000	26,000
Korea, North, unspecified <sup>c</sup>	50,000	50,000	50,000	50,000	50,000
Korea, Republic of:					
Pyrophyllite	617,411	673,936	510,708 <sup>4</sup>	483,133 <sup>r,4</sup>	500,000
Talc	5,996	5,729	15,608 <sup>4</sup>	2,165 <sup>r,4</sup>	20,000
Macedonia, talc	682	1,292	547 <sup>4</sup>	286 <sup>r,4</sup>	300
Mexico, talc	33,421	870	51,221 <sup>4</sup>	51,000	50,000
Morocco	200 <sup>r</sup>	-- <sup>r</sup>	5,129 <sup>r,4</sup>	5,000 <sup>r</sup>	5,000
Nepal, talc <sup>e,7</sup>	6,601 <sup>4</sup>	9,000	1,655 <sup>r,4</sup>	6,935 <sup>r,4</sup>	7,000
Norway, soapstone, steatite, talc <sup>c</sup>	28,000	26,000	25,000	20,000	22,000
Pakistan, pyrophyllite	40,792	121,800	114,100 <sup>r,4</sup>	110,000	105,000
Paraguay, pyrophyllite, soapstone, talc	-- <sup>r</sup>	-- <sup>r</sup>	-- <sup>r</sup>	-- <sup>r</sup>	--
Peru, talc	13,359	13,296	17,792 <sup>4</sup>	31,559 <sup>4</sup>	31,600
Portugal, talc	11,567	11,951	12,000	12,000	12,000
Romania, talc <sup>c</sup>	500	1,000	1,000	1,000	1,000
Russia, talc <sup>c</sup>	160,000	160,000	160,000	160,000	160,000
South Africa:					
Pyrophyllite	114,889	122,511	121,368 <sup>4</sup>	18,734 <sup>r,4</sup>	19,000
Talc	4,718	3,150	4,453 <sup>4</sup>	4,765 <sup>r,4</sup>	5,000
Spain, steatite and talc	47,218 <sup>r</sup>	51,897 <sup>r</sup>	11,957 <sup>r,4</sup>	8,857 <sup>r,4</sup>	9,000
Sweden, soapstone and talc	4,000 <sup>r</sup>	4,000 <sup>r</sup>	3,000 <sup>r</sup>	-- <sup>r</sup>	--
Thailand:					
Pyrophyllite	-- <sup>r</sup>	-- <sup>r</sup>	-- <sup>r</sup>	-- <sup>r</sup>	--
Talc	504 <sup>r</sup>	672 <sup>r</sup>	2,304 <sup>r,4</sup>	5,856 <sup>r,4</sup>	5,800
Turkey, talc and pyrophyllite	6,887 <sup>r</sup>	1,826 <sup>r</sup>	9,959 <sup>r,4</sup>	14,537 <sup>r,4</sup>	19,000
United Kingdom, pyrophyllite, soapstone, talc	3,000 <sup>r</sup>	3,000 <sup>r</sup>	4,000 <sup>r,4</sup>	4,000 <sup>r,4</sup>	4,000
United States:					
Pyrophyllite	W	W	W	W	W
Talc <sup>4</sup>	511,000	604,000	616,000	515,000	542,000
Uruguay, pyrophyllite, soapstone, talc <sup>c</sup>	1,150	1,150	1,150	1,150	1,150
Zimbabwe, talc	200 <sup>e</sup>	--	--	--	--

See footnotes at end of table.



TABLE 5—Continued  
TALC AND PYROPHYLLITE: WORLD PRODUCTION, BY COUNTRY AND PRODUCT<sup>1,2</sup>

(Metric tons)

Country <sup>3</sup>	2009	2010	2011 <sup>c</sup>	2012 <sup>c</sup>	2013 <sup>c</sup>
World total	6,870,000 <sup>r</sup>	6,830,000 <sup>r</sup>	6,910,000 <sup>r</sup>	6,810,000 <sup>r</sup>	6,900,000
Of which:					
Pyrophyllite	1,200,000 <sup>r</sup>	1,350,000 <sup>r</sup>	1,190,000 <sup>r</sup>	1,040,000 <sup>r</sup>	1,070,000
Steatite	550,000	550,000	560,000	570,000	570,000
Talc	1,710,000 <sup>r</sup>	1,800,000 <sup>r</sup>	1,830,000 <sup>r</sup>	1,750,000 <sup>r</sup>	1,800,000
Unspecified	3,410,000 <sup>r</sup>	3,130,000 <sup>r</sup>	3,330,000 <sup>r</sup>	3,440,000 <sup>r</sup>	3,460,000

<sup>c</sup>Estimated. <sup>r</sup>Revised. W Withheld to avoid disclosing company proprietary data; not included in "World total." -- Zero.

<sup>1</sup>World totals, U.S. data, and estimated data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Includes data available through September 8, 2014.

<sup>3</sup>Talc may have been produced in Nigeria, but available information is inadequate to make reliable estimates of output levels.

<sup>4</sup>Reported figure.

<sup>5</sup>Data based on fiscal year ending June 30 of that stated.

<sup>6</sup>Data based on fiscal year beginning March 21 of that stated.

<sup>7</sup>Data based on fiscal year beginning mid-July of that stated.