



# 2015 Minerals Yearbook

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## ANTIMONY [ADVANCE RELEASE]

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# ANTIMONY

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In the United States, one company in Montana produced antimony metal and antimony trioxide by upgrading imported antimony intermediate products. Secondary antimony was recovered as a component of lead alloys from recycled lead-acid batteries at secondary lead smelters.

Reported consumption of primary antimony decreased by 3% from that in 2014 primarily owing to decreases in consumption for use in nonmetal and metal products that were partially offset by an increase in consumption for flame retardants. In 2015, about 35% of the reported primary antimony used in the United States was in flame retardants; most of the remaining antimony was used in ceramics, glass, and lead-base alloys (table 3). Secondary antimony, which was derived almost entirely from antimonial lead contained in recycled lead-acid batteries, was used in the manufacture of new batteries. The worldwide end-use distribution of antimony in 2014 (latest data available) was reported to be flame retardants, 50%; lead-acid batteries, 35%; heat stabilizers and plastics, 7%; and other uses, 8% (Roskill Information Services Ltd., 2015, p. 111).

Antimony was commercially mined as a principal product or was recovered as a byproduct during the smelting of base metal ores in nine countries. China was the world's leading producer of primary antimony, accounting for 78% of world mine production, followed by Russia (6%) and Tajikistan (6%) (table 9). Estimated global mine production declined by 9% from that in 2014 and was at its lowest level since 2009.

## Production

**Mine.**—In October 2013, First Liberty Power Corp. (FLPC) (Las Vegas, NV) began mining stibnite (antimony trisulfide) ore for upgrade and sale at its Fencemaker antimony project, 194 kilometers northeast of Reno, NV. By February 2014, more than 750 metric tons (t) of raw stibnite ore had been produced and was being stored at a nearby facility for further processing. In 2014, the company reported that it had been working to acquire additional permits to construct a concentrator and refinery. However, the company experienced financial challenges during 2014, and the mine was placed on care-and-maintenance status in early 2015 (First Liberty Power Corp., 2014; Roskill Information Services Ltd., 2015, p. 241). The company did not provide any updates on the project in 2015.

**Smelter.**—The United States had only one antimony smelter, operated by U.S. Antimony Corp. (USAC) (Thompson Falls, MT) in Montana. The smelter processed intermediate antimony products from Australia, Canada, and Mexico; recovered precious metals; and produced antimony trioxide and metal. The company also operated a smelter and mines in Mexico. USAC produced antimony metal for bearings, lead alloys, and ordnance; antimony oxide as a raw material for flame retardants; and sodium antimonite for glass and other applications.

USAC also recycled antimony-containing products that would otherwise be discarded. In 2015, USAC concluded a capacity expansion project at its smelter in Madero, Mexico, with the addition of a large furnace and five smaller furnaces to process high-grade concentrates. The company reported that overall antimony production (as contained metal produced in the United States and Mexico) in 2015 was about 1,130 t (627 t produced in the United States, 501 t in Mexico) compared with 789 t (518 t produced in the United States, 271 t in Mexico) in 2014, an increase of 30% (U.S. Antimony Corp., 2016, p. 4, 7).

## Consumption

Of the 113 companies to which a U.S. Geological Survey (USGS) antimony consumption survey was sent, 78 firms responded. Consumption data were estimated for the remaining 35 firms. Reported consumption of primary antimony decreased by 3% from that in 2014, primarily owing to decreases in consumption for use in nonmetal and metal products (table 3). Lead-antimony alloys were used in ammunition, antifriction bearings, cable sheaths, corrosion-resistant pumps and pipes, roof sheet solder, and tank linings. Antimony oxide was used primarily in conjunction with a halogen to form a flame retardant system for coatings, fiberglass, paper, plastics, rubber, textile goods, and paints. Antimony oxide was also used as a color fastener in paint, as a catalyst for production of polyester resins for fibers and film, as a catalyst for production of polyethylene terephthalate in plastic bottles, and as a phosphorescent agent in fluorescent light bulbs.

## Prices

In 2015, the average Platts Metals Week New York dealer price of antimony was 327 cents per pound, a decrease of 23% compared with that in 2014 (table 1). The average monthly price for antimony started 2015 at 380 cents per pound, the peak for the year, and decreased to 280 cents per pound by yearend. Annual average antimony prices in 2015 were at their lowest level since 2010 (table 1). The price decline in 2015 was reportedly due to decreased demand in China and the collapse of the Fanya Metal Exchange (Roskill's Letter from Japan, 2015).

## Foreign Trade

U.S. imports of antimony (metal content) in 2015 were, as has been the case in the recent past, much more than exports—about ninefold more (tables 5–8). Imports of antimony metal (gross weight), concentrates (metal content), and oxide (metal content) were 22,500 t, a 6% decrease from that in 2014. China was the leading supplier to the United States, accounting for 53% of antimony metal imports and 54% of antimony oxide (metal content) imports in 2015 (tables 7–8).

## World Review

In 2015, global mine production of antimony declined by 9% to 141,000 t from 155,000 t in 2014. China (78%), Russia (6%), and Tajikistan (6%) were the leading global producers of antimony in 2015. Global mine production was about 24% less than it was in 2011 (the historical peak for global antimony mine production) owing primarily to declines in production in Burma, Canada, China, and South Africa (table 9).

Globally, the majority of antimony was consumed for use in flame retardants (50%) and in lead-acid batteries (35%). It was estimated that in 2014 (latest year for which data were available), global consumption of antimony was about 182,000 t, a slight decline from that in 2013. In 2014, Asia accounted for 56% of global antimony consumption followed by Europe and North America with 19% each (Roskill Information Services Ltd., 2015, p. 4, 111–112).

**Australia.**—Mandalay Resources Corp. (Canada) operated the Costerfield gold-antimony mine in Victoria. Mandalay purchased the idled mine in 2009, restarted operations in 2010, and has been making improvements to increase production since then. In 2015, the mine produced 3,710 t of antimony in concentrate, a slight increase from that produced in 2014 and more than twice as much as was produced in 2011 (Mandalay Resources Corp., 2012, 2016).

**China.**—In 2015, China continued to be the dominant producer of mined antimony, accounting for about 78% of global mine production. The largest and highest grade deposits were in southern China, specifically, in the Guangxi Zhuang Autonomous Region and Hunan and Yunnan Provinces. China was also the leading global producer of antimony metal and oxides, leading importer of antimony contained in ore and concentrates, and leading exporter of antimony metal and oxide (Roskill Information Services Ltd., 2015, p. 1, 36). Antimony mine production was estimated to be about 110,000 t in 2015, an 8% decrease from that in 2014 and about 27% less than that produced in 2011. Hsikwangshan Twinkling Star Co., Ltd. (one of the leading antimony mine and metal producers in China) and eight smaller producers in Hunan Province were required by the Government to consolidate and reduce antimony metal production capacity in 2016. The eight smaller producers were required to reduce combined metal production capacity to about 25,000 metric tons per year (t/yr) from 48,000 t/yr, and Hsikwangshan Twinkling Star was required to reduce production capacity at its smelter to 18,000 t/yr from 28,000 t/yr (Xu, 2016a, b). In December 2014, China's Ministry of Commerce released minor metals export quotas for 2015. During 2015, the total export quota (metal content) for antimony metal and antimony trioxide was 59,400 t, the same as in 2014.

China's consumption of antimony in 2015 fell by 9% to about 58,000 t, 18% less than that consumed in 2010. Since 2010, antimony consumption in China has declined owing to increased substitution for antimony in flame retardants and the slowdown in the global economy that reduced demand for some downstream products containing antimony that were produced in China (Minor Metals Monthly, 2015; Research and Markets, 2016).

**Oman.**—In July 2014, Tri-Star Resources Plc (United Kingdom) announced that it had formed a joint-venture company called Strategic and Precious Metals Processing LLC [owned by Tri-Star, the Oman Investment Fund (a sovereign wealth fund of the Sultanate of Oman), and Castell Investments Ltd. (a subsidiary of Dubai Transport Co.)] to construct and operate an antimony roaster in Oman. The roaster would be built in the Sohar Free Trade Zone and have the capacity to produce 20,000 t/yr of antimony metal and antimony trioxide and was projected to cost \$60 million to build. In September 2015, the company announced that a \$70 million funding package for the project had been secured. Commissioning of the plant was expected during 2016, and production would begin in 2017 (Tri-Star Resources Plc, 2015, p. 3). Raw materials were to be imported from Tri-Star's mines in Canada and Turkey (both still in development stages) and from other suppliers, and the antimony metal and trioxide produced were expected to be exported primarily to customers in Asia, Europe, and the United States (Spicer, 2014; Tri-Star Resources Plc, 2014).

**South Africa.**—Village Main Reef Ltd., an antimony and gold producer, experienced financial difficulties in 2014 and began business rescue proceedings in mid-December after plans to sell its Cons Murch antimony and gold Mine to an Australian buyer fell through. According to Village Main Reef, Cons Murch was one of the largest antimony ore bodies outside of China, had the capacity to produce about 5,500 t/yr of antimony, and had been a relatively significant antimony producer until 2014. The company was hoping to maintain the mine until a suitable buyer could be found, but in early 2015, the mine was placed into provisional liquidation after the company failed to sell the mine's assets. The future of the mine was uncertain (Macmillan, 2015; Roskill Information Services Ltd., 2015, p. 272).

## Outlook

Global consumption of antimony is expected to increase from 2015 to 2020 owing to projected increases in use for flame retardants, lead-acid batteries, and plastics, primarily in Asia. One industry analyst estimated that global consumption of antimony would reach 206,000 t by 2020. Asia is expected to continue to be the leading consuming region, accounting for about 60% of global consumption by 2020 (Roskill Information Services Ltd., 2015, p. 192).

Globally, flame retardants are expected to remain the principal use of antimony. The increase in antimony prices from 2009 to 2011 led some producers of flame retardants to switch to less expensive substitutes where possible. However, if prices continue to decline, substitution for antimony could reverse as antimony is still a preferred synergist in many flame-retardant applications.

Antimony recovered from scrap has been an important part of the total domestic antimony supply. Recovery, however, is limited to the quantity contained in end-of-life batteries. Since 2001, a typical automotive lead-acid battery has contained a maximum of 0.6% antimony.

In recent years, lead-acid battery manufacturers have initiated research and development programs that could ultimately lead to significant changes in lead-acid battery design. This research has already yielded performance improvements that could make

lead-acid batteries viable options for future generation hybrid vehicles. These batteries might use less lead per battery than conventional lead-acid batteries and could reduce or eliminate the use of antimony in lead-acid battery alloys. Consumption of antimony for batteries in North America has declined over the past few decades as many newer starting, lighting, and ignition battery designs, such as sealed “maintenance free” batteries, are manufactured with alloys of lead with calcium, selenium, or tin instead of antimony owing to performance and price advantages. Lead-antimony alloys are still expected to be used in deep cycle batteries for motive power in boats, forklifts, golf carts, and some standby batteries.

Although production has declined in China and its antimony reserves may be declining, numerous antimony prospects around the world are being explored and developed, and future supplies of antimony are expected to be sufficient to meet demand. Mine projects in Australia, Bolivia, Canada, Kyrgyzstan, and Turkey are in various stages of development and could potentially become new sources of supply (Roskill Information Services Ltd., 2015, p. 192–193, 198).

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## GENERAL SOURCES OF INFORMATION

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- Antimony. Mineral Industry Surveys, quarterly.
- Antimony. Ch. in United States Mineral Resources, Professional Paper 820, 1973.
- Antimony (Sb). Ch. in Metal Prices in the United States Through 2010, Scientific Investigations Report 2012–5188, 2013.

### Other

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TABLE 1  
SALIENT ANTIMONY STATISTICS<sup>1</sup>

(Metric tons, antimony content unless otherwise specified)

	2011	2012	2013	2014	2015
United States:					
Smelter production:					
Primary	W	W	W	W	W
Secondary	2,860	3,050	4,410	4,230	3,850
Exports:					
Metal, alloys, waste and scrap gross weight	596 <sup>r</sup>	847	1,550	1,570	1,440
Antimony oxide <sup>2</sup>	3,590 <sup>r</sup>	3,830 <sup>r</sup>	2,140 <sup>r</sup>	1,670	1,760
Imports for consumption:					
Metal, alloys, waste and scrap gross weight	5,040	5,050	6,170	6,210	5,790
Antimony oxide <sup>2</sup>	18,200	17,200	18,200	17,600	16,700
Reported industrial consumption, primary antimony	8,610	8,050	9,040	8,520	8,270
Stocks, primary antimony, all classes, December 31	1,430	1,430	1,470	1,400	1,260
Price, average <sup>3</sup> cents per pound	650.3	564.5	462.6	424.8	326.5
World, mine production	187,000 <sup>r</sup>	179,000 <sup>r</sup>	159,000 <sup>r</sup>	155,000 <sup>r</sup>	141,000 <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, except prices.

<sup>2</sup>Antimony content data were calculated by the U.S. Geological Survey.

<sup>3</sup>New York dealer price for 99.65% metal, cost, insurance, freight U.S. ports.

TABLE 2  
REPORTED INDUSTRIAL CONSUMPTION OF  
PRIMARY ANTIMONY IN THE UNITED STATES<sup>1</sup>

(Metric tons, antimony content)

Class of material consumed	2014	2015
Metal	1,020 <sup>r</sup>	950
Oxide	6,140	5,860
Other <sup>2</sup>	1,360 <sup>r</sup>	1,460
Total	8,520	8,270

<sup>r</sup>Revised.

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

<sup>2</sup>Includes residues and sulfide.

TABLE 3  
REPORTED INDUSTRIAL CONSUMPTION OF PRIMARY ANTIMONY IN THE  
UNITED STATES, BY PRODUCT<sup>1</sup>

(Metric tons, antimony content)

Product	2014	2015
<b>Metal products:</b>		
Antimonial lead	W	W
Bearing metal and bearings	18	20
Solder	46	19
Other <sup>2</sup>	2,380	2,410
Total	2,440	2,450
<b>Nonmetal products:</b>		
Ammunition primers	W	W
Ceramics and glass	W	W
Pigments	877	808
Plastics	122	39
Other <sup>3</sup>	2,260	2,110
Total	3,260	2,960
<b>Flame retardants:</b>		
Adhesives	69	59
Plastics	2,440	2,200
Rubber	139	153
Textiles	172	450
Total	2,820	2,860
Grand total	8,520	8,270

W Withheld to avoid disclosing company proprietary data; included in "Other."

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

<sup>2</sup>Includes ammunition, cable covering, castings, sheet and pipe, and type metal.

<sup>3</sup>Includes fireworks and rubber products.

TABLE 4  
INDUSTRY STOCKS OF PRIMARY ANTIMONY IN  
THE UNITED STATES, DECEMBER 31<sup>1</sup>

(Metric tons, antimony content)

Type of material	2014	2015
Metal	214	198
Oxide	790	725
Other <sup>2</sup>	392	340
Total	1,400	1,260

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

<sup>2</sup>Includes ore and concentrate, residues, and sulfide.



TABLE 5  
U.S. EXPORTS OF ANTIMONY METAL, ALLOYS, AND WASTE AND SCRAP,  
BY COUNTRY<sup>1</sup>

Country	2014		2015	
	Gross weight (metric tons)	Value (thousands)	Gross weight (metric tons)	Value (thousands)
Australia	(2)	\$4	6	\$27
Austria	--	--	16	69
Belgium	--	--	18	79
Canada	247 <sup>r</sup>	1,050 <sup>r</sup>	32	133
Chile	64	198	--	--
China	6	27	125	479
Dominican Republic	(2)	14	18	86
Germany	45	140	169	538
Greece	--	--	20	127
Guatemala	--	--	6	35
India	26	81	36	136
Italy	2	5	3	9
Japan	5	17	40	250
Korea, Republic of	645	1,960	448	1,730
Mexico	264	1,320	208	946
Netherlands	6	19	10	32
Poland	21	66	45	140
Russia	8	32	--	--
South Africa	--	--	37	156
Spain	6	24	--	--
Swaziland	--	--	10	45
Sweden	1	3	3	18
Taiwan	16	50	55	172
Turkey	6	18	6	17
United Kingdom	78	242	103	319
Venezuela	118	615	14	158
Other	8 <sup>r</sup>	36 <sup>r</sup>	15	39
Total	1,570	5,930 <sup>r</sup>	1,440	5,740

<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>Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 6  
U.S. EXPORTS OF ANTIMONY OXIDE, BY COUNTRY<sup>1</sup>

Country	2014			2015		
	Gross weight (metric tons)	Antimony content <sup>2</sup> (metric tons)	Value (thousands)	Gross weight (metric tons)	Antimony content <sup>2</sup> (metric tons)	Value (thousands)
Australia	97	80 <sup>r</sup>	\$389	54	45	\$239
Belgium	3	2	24	3	2	\$23
Canada	67 <sup>r</sup>	56	564	28	23	194
Chile	5	4	39	7	6	48
China	163	135	587	114	94	508
Colombia	102	85	900	175	145	1,370
Costa Rica	19	16	179	197	163	2,120
France	72	60	217	114	95	596
Germany	191 <sup>r</sup>	159	779	242	201	814
Hong Kong	27	23 <sup>r</sup>	71	102	85	271
India	35	29	142	(3)	(3)	5
Indonesia	15	12	105	64	53	439
Italy	1	1	5	18	15	105
Japan	363	301	2,120	361	300	1,890
Korea, Republic of	12 <sup>r</sup>	10	115	22	18	57
Mexico	251	208	1,890 <sup>r</sup>	176	146	1,470
Netherlands	8	7	21	--	--	--
Oman	100	83	390	--	--	--
Singapore	30	25	134	29	24	104
South Africa	16	13	70	5	4	13
Taiwan	153 <sup>r</sup>	124	745 <sup>r</sup>	258	214	1,140
Thailand	128	106	677	2	2	6
United Arab Emirates	--	--	--	60	50	188
United Kingdom	71	59	451	82	68	376
Venezuela	81	67	404	--	--	--
Other	4 <sup>r</sup>	7 <sup>r</sup>	31 <sup>r</sup>	2	2	17
Total	2,010	1,670	11,100 <sup>r</sup>	2,120	1,760	12,000

<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>Antimony content data were calculated by the U.S. Geological Survey.

<sup>3</sup>Less than ½ unit.

Source: U.S. Census Bureau.



TABLE 7  
U.S. IMPORTS FOR CONSUMPTION OF ANTIMONY, BY CLASS AND COUNTRY<sup>1</sup>

Country	2014			2015		
	Gross weight (metric tons)	Antimony content <sup>2</sup> (metric tons)	Value (thousands)	Gross weight (metric tons)	Antimony content <sup>2</sup> (metric tons)	Value (thousands)
<b>Antimony ore and concentrate:</b>						
Austria	13	6	\$72	4	2	\$24
Canada	--	--	--	(3)	(3)	5
China	129	89	852	53	39	297
India	153	53	388	--	--	--
Italy	324 <sup>r</sup>	227 <sup>r</sup>	2,910 <sup>r</sup>	388	254	2,670
Japan	(3)	(3)	8	5	3	63
Mexico	4	1	8	22	11	268
Turkey	(3)	(3)	2	--	--	--
Total	622 <sup>r</sup>	378 <sup>r</sup>	4,240 <sup>r</sup>	473	308	3,330
<b>Antimony oxide:</b>						
Austria	1	1	3	--	--	--
Belgium	1,780	1,470	15,200	2,000	1,660	15,100
Bolivia	1,990	1,660	15,500	1,980	1,640	12,500
Brazil	--	--	--	18	15	151
Chile	--	--	--	80	66	391
China	12,100	10,000	80,300	10,800	8,960	59,000
France	535	444	5,200	344	286	2,950
Germany	3	2	21	--	--	--
Hong Kong	60	50	520	(3)	(3)	3
India	6	5	68	11	9	94
Japan	718 <sup>r</sup>	596	4,210 <sup>r</sup>	578	480	3,460
Korea, Republic of	18	15	84	3	3	16
Mexico	1,130	935	11,300	1,040	862	9,480
Netherlands	16	14	155	--	--	--
Spain	--	--	--	36	30	138
Taiwan	(3)	(3)	4	--	--	--
Thailand	2,900	2,410	5,800	3,200	2,660	7,740
United Kingdom	(3)	(3)	6	(3)	(3)	19
Total	21,200	17,600	138,000	20,100	16,700	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>Antimony ore and concentrate content reported by the U.S. Census Bureau. Antimony content of oxide data were calculated by the U.S. Geological Survey.

<sup>3</sup>Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 8  
U.S. IMPORTS FOR CONSUMPTION OF ANTIMONY METAL, ALLOYS,  
AND WASTE AND SCRAP, BY COUNTRY<sup>1</sup>

Country	2014		2015	
	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Austria	(2)	\$4	(2)	\$12
Bolivia	61	825	30	240
Brazil	(2)	3	(2)	2
Canada	(2)	194	(2)	126
China	4,060	31,800	3,050	23,100
France	--	--	(2)	82
Germany	(2)	97	(2)	145
Hong Kong	64	589	40	334
India	779	7,040	1,420	10,800
Japan	187	510	176	584
Korea, Republic of	34	312	--	--
Mexico	290	1,370	382	2,900
Netherlands	60	561	--	--
Peru	325	2,540	--	--
Tajikistan	--	--	20	160
Thailand	--	--	80	624
United Kingdom	195	2,070	354	3,690
Vietnam	150	1,370	243	1,580
Other	1	1 <sup>r</sup>	(2)	1
Total	6,210	49,300	5,790	44,400

<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>Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 9  
ANTIMONY: WORLD MINE PRODUCTION, BY COUNTRY<sup>1,2</sup>

(Metric tons, antimony content unless otherwise specified)

Country <sup>3</sup>	2011	2012	2013	2014	2015 <sup>e</sup>
Australia <sup>4</sup>	1,577	2,481	3,275	5,800 <sup>e</sup>	3,700
Bolivia	3,947	5,081 <sup>r</sup>	5,053 <sup>r</sup>	4,186 <sup>r</sup>	4,200
Burma <sup>e,5</sup>	5,600	5,900	7,200	3,300	3,000
Canada <sup>e,4</sup>	5,800	4,100	148 <sup>6</sup>	-- <sup>6</sup>	1 <sup>6</sup>
China <sup>e</sup>	150,000	136,000	121,000 <sup>r</sup>	120,000	110,000
Kyrgyzstan <sup>e</sup>	1,500	1,200	(7) <sup>r</sup>	-- <sup>r</sup>	--
Mexico	100	169	294	270	NA
Russia <sup>e</sup>	6,348 <sup>6</sup>	7,300	8,700	9,000	9,000
South Africa <sup>4</sup>	3,175	3,066 <sup>r</sup>	2,405 <sup>r</sup>	815 <sup>r</sup>	--
Tajikistan	6,000 <sup>r</sup>	6,600 <sup>r</sup>	5,500 <sup>r</sup>	8,000 <sup>r</sup>	8,000
Thailand	56	--	--	--	--
Turkey <sup>e</sup>	2,200 <sup>r</sup>	6,600 <sup>r</sup>	4,200 <sup>r</sup>	2,800 <sup>r</sup>	2,500
Vietnam <sup>e,8</sup>	300 <sup>r</sup>	500 <sup>r</sup>	1,000 <sup>r</sup>	1,000 <sup>r</sup>	1,000
Total	187,000 <sup>r</sup>	179,000 <sup>r</sup>	159,000 <sup>r</sup>	155,000 <sup>r</sup>	141,000

<sup>e</sup>Estimated. <sup>r</sup>Revised. NA Not available. -- Zero.

<sup>1</sup>Totals 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 October 17, 2017.

<sup>3</sup>In addition to the countries listed, antimony may have been produced in Iran, but information was inadequate to make reliable estimates of output.

<sup>4</sup>Antimony content of antimony ore and concentrate, lead concentrates, and lead-zinc concentrates.

<sup>5</sup>Data estimated from United Nations Comtrade database for antimony ores and concentrates imported from Burma by China, India, Singapore, and Thailand.

<sup>6</sup>Reported figure.

<sup>7</sup>Less than 1/2 unit.

<sup>8</sup>Figures were converted to antimony content (using a conversion factor of 40% antimony) from gross weight in metric tons, which was reported as follows: 2011—714 (revised); 2012—1,199; 2013—2,476; 2014—2,684; and 2015—2,680 (estimated). Data are rounded to one significant digit.