



2017 Minerals Yearbook

ANTIMONY [ADVANCE RELEASE]

ANTIMONY

By Kateryna Klochko

Domestic survey data and tables were prepared by Hoa P. Phamdang, statistical assistant.

In 2017, no marketable antimony was mined in the United States. A mine in Nevada that had extracted about 800 metric tons (t) of stibnite ore from 2013 through 2014 was placed on care-and-maintenance status in 2015 and had no reported production in 2017. Primary antimony metal production decreased in 2017. Primary antimony metal and antimony trioxide were produced by one company in Montana by upgrading imported antimony intermediate products. Secondary antimony production increased by 15% to 4,370 t and was recovered as a component of lead alloys from recycled lead-acid batteries at secondary lead smelters.

Reported consumption of primary antimony decreased by 7% from that of the revised consumption in 2016 (tables 1, 2). In 2017, about 36% 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 2017 was reported to be flame retardants, 48%; lead-acid batteries, 33%; and plastics, 8% (Roskill Information Services Ltd., 2018, p. 25).

Antimony was commercially mined as a principal product or was recovered as a byproduct during the smelting of base-metal ores in 15 countries. China, the world's leading producer of primary antimony, accounted for 71% of world mine production, followed by Russia (10%) and Tajikistan (10%). Estimated global mine production decreased by 12% in 2017 (table 9).

Production

Mine.—In April 2017, Midas Gold Corp. (Canada) announced commencement of the feasibility study for the Stibnite Gold project (Midas Gold Corp., 2017a). In September 2017, the company reported that the U.S. Army Corps of Engineers, U.S. Environmental Protection Agency, U.S. Forest Service, Idaho Department of Lands, Idaho Department of Environmental Quality, the Idaho Governor's Office of Energy and Mineral Resources, and the Valley County, ID, government entered into an agreement indicating their commitment to coordinate the Stibnite Gold project's permitting process (Midas Gold Corp., 2017b).

In September 2017, Renaissance Gold Inc., a Nevada-based gold and silver exploration company, began exploratory drilling of gold mineralization associated with high antimony concentrations in the Diamond Point, Spruce East, and Buffalo Canyon projects in Nevada. The company conducted gravity and magnetic surveys prior to drilling. The exploration is projected to continue into 2018 (Renaissance Gold Inc., 2017).

Primary Smelter.—The United States had only one primary 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 2017, USAC reported approval of the permit for a cyanide leach plant in the Puerto Blanco mill in Guanajuato, Mexico, to recover gold, silver, and antimony from the Los Juarez deposit in Queretaro, Mexico. The recovery rate of antimony contained in ore in this deposit was projected to be 70%. The leach plant equipment construction was taking place in Montana (U.S. Antimony Corp., 2017). In 2017, USAC reported selling about 858 t of antimony as contained metal (602 t produced in the United States, 256 t in Mexico), a decrease of 36% (a 7% decrease in production in the United States and a 83% decrease in production in Mexico) compared with 1,332 t produced (645 t produced in the United States, 687 t in Mexico) in 2016 (U.S. Antimony Corp., 2018, p. 18).

Secondary.—All of the secondary antimony in the United States is produced at secondary lead smelters from scrap battery grids and other battery parts, as well as from bearing metal, type metal, and other antimonial lead scrap. In 2017, 12 secondary lead smelters recovered 4,370 t of antimony, a 15% increase from that in 2016 (table 1).

Consumption

Of the 137 companies to which a U.S. Geological Survey (USGS) antimony consumption survey was sent, 111 firms responded. Consumption data were estimated for the remaining 26 firms. The reported consumption of primary antimony was 7,780 t, a 7% decrease from the revised total in 2016. The reported consumption of primary antimony in the United States in 2017 was divided between three main groups of products: flame retardants (antimony trioxide), 36%; nonmetal products, 33%; and metal products, 31% (lead-antimony alloys) (table 3). Lead-antimony alloys were used in the production of lead-acid batteries, 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 2017, the average Platts Metals Week New York dealer price of antimony was \$3.98 per pound, an increase of 19% compared with that in 2016 (table 1). The price for antimony started to recover in 2016 after a 23% decline in the average annual price in 2015 (the lowest average annual price since 2010) and continued to increase during 2017, largely owing to the Government of China's antipollution shutdowns of mining and processing facilities that resulted in a 50% reduction in antimony output in the second quarter of 2017 (Metal Bulletin, 2017a).

Foreign Trade

U.S. imports for consumption of antimony in 2017 were, as has been the case in the recent past, much more than exports (tables 5–8). Imports for consumption of antimony oxide (antimony content) in 2017 were 17,900 t, an 11% increase from that in 2016. Imports for consumption of antimony metal, alloys, and waste and scrap in 2017 were 6,830 t, a 4% decrease from that in 2016. China was the leading supplier to the United States, accounting for 53% of antimony metal imports and 64% of antimony oxide (antimony content) imports in 2017 (tables 7–8). Exports of antimony oxide (antimony content) in 2017 were 1,600 t, a 21% increase from those in 2016. Exports of antimony metal, alloys, and waste and scrap (gross weight) were 653 t, an increase of 5% from those in 2016; Mexico and Canada were the leading destinations, accounting for 50% and 25%, respectively (tables 5–6).

World Review

In 2017, global mine production of antimony decreased by 11% to 137,000 t from the revised total of 155,000 t in 2016. China (71%), Russia (10%), and Tajikistan (10%) were the leading global producers of antimony in 2017. Global mine production was about 29% less than it was in 2013 (the historical peak for global antimony mine production) owing primarily to declines in production in Burma and China (table 9).

Globally, consumption of primary and secondary antimony was estimated to be about 177,000 t in 2017, essentially unchanged from that in 2016. Asia accounted for more than 59% of global antimony non-metallurgical consumption (Roskill Information Services Ltd., 2018, p. 25, 30).

Australia.—Mandalay Resources Corp. (Canada) operated the Costerfield gold-antimony mine in Victoria. Mandalay purchased the idled mine in 2009 and restarted operations in 2010. In 2017, the mine produced 3,115 t of antimony in concentrate, a 13% decrease from 3,598 t produced in 2016 (Mandalay Resources Corp., 2018, p. 7).

China.—In 2017, China continued to be the dominant producer of mined antimony, accounting for about 71% of global mine production (table 9). The largest and highest grade deposits were in southern China, specifically, in Guangxi Zhuang Autonomous Region and Hunan and Yunnan Provinces. China was also the leading global producer of antimony metal and oxides, the leading importer of antimony contained in ore and concentrates, and the leading exporter of antimony metal and oxide. Antimony mine production was estimated to be about 98,000 t in 2017, a 16% decrease from that in 2016 and about

36% less than that produced in 2013 (table 9). In 2017, China's Government was carrying out environmental inspections through the whole country in an effort to curb pollution (Metal Bulletin, 2017a). Environmental inspectors shut down all the private-sector antimony smelters in April 2017 demanding an upgrade of equipment and production technology to comply with the environmental standards. After a brief reopening in the fall of 2017, the smelters were shut down again in December as a result of failure to meet environmental standards (Argus Metals International, 2017).

At the beginning of 2017, the Ministry of Commerce of China lifted the export quota for antimony, which was set at 54,400 t, and introduced an export license system in its place (Metal-Pages, 2016; Metal-Pages, 2017a).

Oman.—Strategic & Precious Metals Processing LLC [a joint venture among Oman Investment Fund (40%), Tri-Star Resources Plc (40%), and DNR Industries (20%)] continued development of the Oman Antimony Roaster project in Sohar. The facility was expected to produce 26,000 metric tons per year of antimony and about 1,560 kilograms per year of gold. Operations had been projected to commence in 2017 but were pushed back to the first quarter of 2018 (Metal-Pages, 2017b).

Tajikistan.—Antimony was mined from the Dzhdzhikrutskoe antimony-mercury deposit in the Sughd Province, owned by the U.S.-based company Comsup Commodities Inc. (Chorshanbiyev, 2011). Anzob Mining and Processing Co. operated the Dzhdzhikrutskoe underground mine and produced antimony-mercury concentrates via flotation. In 2017, mine production of antimony was estimated to be about 14,000 t (table 9).

Outlook

Global consumption of antimony is expected to increase from 2017 to 2028 owing to projected increases in its use for flame retardants, lead-acid batteries, and plastics, primarily in Asia. 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; 2018, p. 66).

Globally, flame retardants are expected to remain the principal use of antimony. However, the 19% increase in antimony prices in 2017 led some producers of flame retardants to begin to consider the reformulation and switching to less expensive substitutes where possible (Metal Bulletin, 2017b).

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. Russia and Tajikistan remain the two leading producers of antimony after China. The construction of the Oman antimony roaster will become important for the antimony sector in the coming years. 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., 2018, p. 77).

References Cited

- Argus Metals International, 2017, China shuts Sb smelters for environmental compliance: Argus Media group, Argus Metals International, December 1. (Accessed December 1, 2017, via <http://www.argusmedia.com>.)
- Chorshanbiyev, Payrav, 2011, Comsup Commodities Inc to build metallurgical enterprise in Tajikistan: Asia-Plus Media Group Tajikistan, May 19. (Accessed May 7, 2018, at <https://asiaplustj.info/en/news/tajikistan/economic/20110519/comsup-commodities-inc-build-metallurgical-enterprise-tajikistan>.)
- Mandalay Resources Corp., 2018, Management's discussion and analysis for the quarter and year ended December 31, 2017: Toronto, Ontario, Canada, Mandalay Resources Corp. news release, February 22, 53 p. (Accessed March 20, 2020, at https://www.mandalayresources.com/wp-content/uploads/2018/02/MND_MDA_Q4-2017.pdf.)
- Metal Bulletin, 2017a, 2017 review—Environmental scrutiny reshapes China's minor metals markets: Metal Bulletin, December 28. (Accessed March 20, 2020, at <https://www.metalbulletin.com/Article/3776159/2017-REVIEW-Environmental-scrutiny-reshapes-Chinas-minor-metals-markets.html?ArticleId=3776159>.)
- Metal Bulletin, 2017b, 2017 interview—Flame retardant industry could substitute antimony if prices continue to rise—Campine: Metal Bulletin, December 7. (Accessed March 20, 2020, at <https://www.metalbulletin.com/Article/3773432/INTERVIEW-Flame-retardant-industry-could-substitute-antimony-if-prices-continue-to-riseCampine.html>.)
- Metal-Pages, 2016, China to cancel Sb export quota in 2017: Argus Media group Metal-Pages, December 8. (Accessed September 14, 2017, via <https://www.metal-pages.com/>.)
- Metal-Pages, 2017a, China cancels antimony export quotas: Argus Media group Metal-Pages, January 4. (Accessed December 1, 2017, via <http://www.metal-pages.com>.)

- Metal-Pages, 2017b, Tri-Star delays Oman Sb roaster start-up: Argus Media group, Argus Metals International Metal-Pages, June 1. (Accessed June 1, 2017, via <http://www.metal-pages.com>.)
- Midas Gold Corp., 2017a, Midas Gold commences feasibility study for its Stibnite Gold project, Idaho: Vancouver, British Columbia, Canada, Midas Gold Corp. news release, April 3. (Accessed March 20, 2020, at <https://www.midasgoldcorp.com/investors/news/2017/midas-gold-commences-feasibility-study-for-its-stibnite-gold-project-idaho/>.)
- Midas Gold Corp., 2017b, State & Federal agencies agree to coordinate permitting of Midas Gold's proposed Stibnite Gold project: Vancouver, British Columbia, Canada, Midas Gold Corp. news release, September 18. (Accessed March 20, 2020, at <https://www.midasgoldcorp.com/investors/news/2017/state-federal-agencies-agree-to-coordinate-permitting-of-midas-golds-proposed-stibnite-gold-project/>.)
- Renaissance Gold Inc., 2017, Renaissance Gold exploration progress: Reno, NV, Renaissance Gold Inc. news release, September 6. (Accessed March 20, 2020, at <https://rengold.com/news/renaissance-gold-exploration-progress/>.)
- Roskill Information Services Ltd., 2015, The world market for antimony to 2020—Standard edition (12th ed.): London, United Kingdom, Roskill Information Services Ltd., 274 p.
- Roskill Information Services Ltd., 2018, Antimony. Global industry, markets & outlook 2018: London, United Kingdom, Roskill Information Services Ltd., 254 p.
- U.S. Antimony Corp., 2017, U.S. Antimony reports approval of Los Juarez leach plant permit: Thompson Falls, MT, U.S. Antimony Corp. news release, November 29. (Accessed March 20, 2020, at http://usantimony.com/2017_newsroom.htm.)
- U.S. Antimony Corp., 2018, Form 10-K—2017: U.S. Securities and Exchange Commission, 65 p. (Accessed March 20, 2020, at http://filings.irdirect.net/data/101538/000165495418003447/uamy_10k.pdf.)

GENERAL SOURCES OF INFORMATION

U.S. Geological Survey Publications

- Antimony. Ch. in *Critical Mineral Resources of the United States—Economic and Environmental Geology and Prospects for Future Supply*, Professional Paper 1802, 2017.
- Antimony. Ch. in *Mineral Commodity Summaries*, annual.
- Antimony. *Mineral Industry Surveys*, quarterly.
- Antimony (Sb). Ch. in *Metal Prices in the United States Through 2010*, Scientific Investigations Report 2012–5188, 2013.

Other

- Antimony. Ch. in *Mineral Facts and Problems*, U.S. Bureau of Mines Bulletin 675, 1985.

TABLE 1
SALIENT ANTIMONY STATISTICS¹

(Metric tons, antimony content, unless otherwise specified)

	2013	2014	2015	2016	2017	
United States:						
Smelter production:						
Primary ²	423	540 ^r	645 ^r	664 ^r	621	
Secondary	4,410	4,280 ^r	3,740 ^r	3,810 ^r	4,370	
Exports:						
Ore and concentrates	gross weight	35	41	31 ^r	12	46
Metal, alloys, waste and scrap	do.	1,550	1,570	1,440	623	653
Antimony oxide ³		2,410	1,670	1,760	1,330	1,600
Imports for consumption:						
Ore and concentrates		342	378	308	119	61
Metal, alloys, waste and scrap	gross weight	6,170	6,210	5,790	7,130	6,830
Antimony oxide ³		18,200	17,600	16,700	16,200	17,900
Reported industrial consumption, primary antimony		9,040	8,520	8,270	8,400 ^r	7,780
Stocks, primary antimony, all classes, December 31		1,470	1,400	1,290	1,090	1,360
Price, average ⁴	dollars per pound	4.63	4.25	3.27	3.35	3.98
World, mine production		193,000	157,000	151,000 ^r	155,000 ^r	137,000

^rRevised. do. Ditto.

¹Table includes data available through June 8, 2020. Data are rounded to no more than three significant digits, except prices.

²Contains residual antimony from primary antimony consumption and antimony produced at the primary antimony facility. Source: United States Antimony Corp., 2018, antimony, gold & silver, zeolite production information: Thompson Falls, MT, United States Antimony Corp. (Accessed May 31, 2018, via <http://usantimony.com/production.htm>).

³Antimony content data were calculated by the U.S. Geological Survey.

⁴New York dealer price for 99.65% metal, cost, insurance, freight U.S. ports. Source: Platts Metals Week.

TABLE 2
REPORTED INDUSTRIAL CONSUMPTION OF
PRIMARY ANTIMONY IN THE UNITED STATES¹

(Metric tons, antimony content)

Class of material consumed	2016	2017
Metal	1,780	1,690
Oxide	5,550	5,370
Other ²	1,070 ^r	718
Total	8,400 ^r	7,780

^rRevised.

¹Table includes data available through June 8, 2020. Data are rounded to no more than three significant digits; may not add to totals shown.

²Includes residues and sulfide.

TABLE 3
 REPORTED INDUSTRIAL CONSUMPTION OF PRIMARY ANTIMONY IN THE
 UNITED STATES, BY PRODUCT¹

(Metric tons, antimony content)

Product	2016	2017
Metal products:		
Antimonial lead	W	W
Bearing metal and bearings	9	8
Solder	15	14
Other ²	2,810 ^r	2,390
Total	2,840 ^r	2,410
Nonmetal products:		
Ammunition primers	W	W
Ceramics and glass	W	W
Pigments	703 ^r	769
Plastics	97 ^r	143
Other ³	1,970	1,650
Total	2,770	2,560
Flame retardants:		
Adhesives	127	50
Plastics	2,290	2,420
Pigments	2	45
Rubber	18	54
Textiles	360	238
Total	2,790	2,810
Grand total	8,400 ^r	7,780

^rRevised. W Withheld to avoid disclosing company proprietary data.

¹Table includes data available through June 8, 2020. Data are rounded to no more than three significant digits; may not add to totals shown.

²Includes ammunition, cable covering, castings, sheet and pipe, and type metal.

³Includes fireworks and rubber products.

TABLE 4
 INDUSTRY STOCKS OF PRIMARY ANTIMONY IN
 THE UNITED STATES, DECEMBER 31¹

(Metric tons, antimony content)

Type of material	2016	2017
Metal	314	382
Oxide	717	650
Other ²	57	331
Total	1,090	1,360

¹Table includes data available through June 8, 2020. Data are rounded to no more than three significant; may not add to totals shown.

²Includes ore and concentrate, residues, and sulfide.

TABLE 5
U.S. EXPORTS OF ANTIMONY METAL, ALLOYS, AND WASTE AND SCRAP,
BY COUNTRY OR LOCALITY¹

Country or locality	2016		2017	
	Gross weight (metric tons)	Value (thousands)	Gross weight (metric tons)	Value (thousands)
Australia	6	\$44	17	\$59
Austria	11	97	4	65
Belgium	14	104	6	26
Brazil	6	19	1	4
Canada	86	308	163	497
Chile	4	18	1	3
China	24	75	47	162
Colombia	--	--	3	9
Czechia	5	18	3	11
Denmark	6	35	(2)	9
Dominican Republic	10	43	--	--
France	--	--	2	134
Georgia	2	5	--	--
Germany	78	497	5	27
Guatemala	4	54	--	--
India	3	11	(2)	3
Italy	6	49	1	3
Japan	1	4	2	6
Korea, Republic of	13	39	2	8
Mexico	223	976	329	1,240
Netherlands	8	38	1	58
Peru	23	127	--	--
Poland	26	79	--	--
Swaziland	5	79	1	41
Sweden	10	42	5	19
Taiwan	10	31	23	71
Thailand	--	--	3	9
Turkey	--	--	7	21
United Kingdom	16	127	14	281
Venezuela	20	146	10	122
Vietnam	2	7	2	7
Other	1 ^r	22 ^r	1	21
Total	623	3,090	653	2,920

^rRevised. -- Zero.

¹Table includes data available through June 8, 2020. Data are rounded to no more than three significant digits; may not add to totals shown.

²Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 6
U.S. EXPORTS OF ANTIMONY OXIDE, BY COUNTRY OR LOCALITY¹

Country or locality	2016			2017		
	Gross weight (metric tons)	Antimony content ² (metric tons)	Value (thousands)	Gross weight (metric tons)	Antimony content ² (metric tons)	Value (thousands)
Argentina	3	2	\$8	--	--	--
Australia	64	53	212	34	28	\$103
Belgium	26	22	115	20	16	89
Brazil	118	98	276	--	--	--
Canada	68	56	408	139	115	721
Chile	7	6	46	5	4	42
China	20	17	82	47	39	155
Colombia	157	130	1,060	108	90	685
Costa Rica	62	51	400	36	30	279
France	106	88	327	77	64	258
Germany	113	94	367	190	158	635
Hong Kong	(3)	(3)	6	(3)	(3)	12
India	2	2	10	2	2	5
Indonesia	4	4	23	59	49	346
Israel	36	30	333	20	17	155
Italy	14	11	95	12	10	87
Japan	316	262	1,630	438	364	2,590
Korea, Republic of	96 ^r	79	579	90	75	314
Malaysia	17	14	45	25	21	74
Mexico	94	78	569	292	242	1,190
Netherlands	--	--	--	10	8	27
Singapore	66	55	218	23	19	59
South Africa	12	10	33	13	11	28
Switzerland	1	1	7	3	2	11
Taiwan	104	87	302	121	100	299
Thailand	--	--	--	10	8	63
Trinidad and Tobago	--	--	--	49	41	127
Turkey	--	--	--	2	2	17
United Kingdom	61	51	314	69	57	378
Venezuela	32	26	227	37	31	381
Total	1,600	1,330	7,690	1,930	1,600	9,130

^rRevised. -- Zero.

¹Table includes data available through June 8, 2020. Data are rounded to no more than three significant digits; may not add to totals shown.

²Antimony content data were calculated by the U.S. Geological Survey.

³Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 7
U.S. IMPORTS FOR CONSUMPTION OF ANTIMONY, BY CLASS AND COUNTRY OR LOCALITY¹

Country or locality	2016			2017		
	Gross weight (metric tons)	Antimony content ² (metric tons)	Value (thousands)	Gross weight (metric tons)	Antimony content ² (metric tons)	Value (thousands)
Antimony ore and concentrate:						
Austria	--	--	--	(3)	(3)	\$9
Bosnia and Herzegovina	9	3	\$16	6	5	35
China	--	--	--	(3)	(3)	8
Germany	--	--	--	3	2	18
India	(3)	(3)	5	(3)	(3)	3
Italy	160	113	998	54	41	420
Japan	(3)	(3)	4	(3)	(3)	3
Mexico	5	2	7	12	12	44
Total	174	119	1,030	75	61	540
Antimony oxide:						
Belgium	2,110	1,750	12,500	2,150	1,780	16,500
Bolivia	1,090	904	5,650	1,300	1,080	8,630
Brazil	1	1	8	--	--	--
Canada	--	--	--	19	16	129
China	13,500	11,200	58,800	13,800	11,400	81,300
Cocos Islands	--	--	--	10	8	30
France	333	277	2,200	461	383	3,610
India	6	5	39	6	5	47
Japan	677	562	3,760	582	483	3,120
Korea, Republic of	34	28	177	32	27	171
Liechtenstein	(3)	(3)	2	--	--	--
Mexico	654	543	5,970	911	756	8,510
Netherlands	10	9	54	--	--	--
Taiwan	--	--	--	20	17	128
Thailand	1,020	847	3,240	2,280	1,890	6,850
United Kingdom	2	2	29	8	6	38
Total	19,500	16,200	92,400	21,500	17,900	129,000

-- Zero.

¹Table includes data available through June 8, 2020. Data are rounded to no more than three significant digits; may not add to totals shown.

²Antimony ore and concentrate content reported by the U.S. Census Bureau. Antimony content of oxide data were calculated by the U.S. Geological Survey.

³Less 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 OR LOCALITY¹

Country or locality	2016		2017	
	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Bolivia	52	\$350	144	\$1,050
Brazil	1	9	--	--
Canada	2	262	8	218
China	4,390	26,800	3,600	28,500
Germany	1	263	(2)	59
Hong Kong	20	96	40	308
India	901	5,350	1,390	10,600
Japan	(2)	1,570	123	1,450
Korea, Republic of	156	876	230	1,840
Mexico	582	4,330	133	976
Sweden	--	--	20	154
Tajikistan	20	128	--	--
Thailand	40	274	61	502
Turkey	--	--	40	290
United Kingdom	387	3,870	431	5,010
Vietnam	579	3,250	617	4,630
Total	7,130	47,500	6,830	55,600

-- Zero.

¹Table includes data available through June 8, 2020. Data are rounded to no more than three significant digits; may not add to totals shown.

²Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 9
ANTIMONY: WORLD MINE PRODUCTION, BY COUNTRY OR LOCALITY¹

(Metric tons, antimony content, unless otherwise specified)

Country or locality	2013	2014	2015	2016	2017
Australia ²	3,275	3,639	3,712	3,598 ^r	3,115
Bolivia	5,052	4,186	3,843	2,669	2,700 ^e
Burma ^{e,3}	7,200	3,600 ^r	3,000	2,000 ^r	1,000
Canada ²	177	5	1	(4) ^r	(4)
China ^e	152,000	123,000	121,000 ^r	117,000 ^r	98,000
Guatemala	159 ^r	-- ^r	-- ^r	25	25 ^e
Iran ^e	300 ^r	220 ^r	330 ^r	500 ^r	300
Kazakhstan, concentrate	--	481	500	573	700 ^e
Laos	804	620	650	242	340 ^e
Mexico	294	270 ^e	90 ^{r, e}	116 ^r	243
Pakistan	89	127	121	114 ^e	60 ^e
Russia	8,700 ^e	8,000 ^e	8,000 ^e	11,900 ^r	14,400
South Africa, concentrate ²	2,405	815	400 ^e	-- ^{r, e}	-- ^e
Tajikistan, ore ^e	7,310	8,060	7,000 ^r	14,000	14,000
Turkey, concentrate ^e	4,180	3,070	1,950	1,950	2,000
Vietnam ^{e,5}	990	1,100	220 ^r	200 ^r	380
Total	193,000	157,000	151,000 ^r	155,000 ^r	137,000

^eEstimated. ^rRevised. -- Zero.

¹Table includes data available through September 18, 2018. All data are reported unless otherwise noted. Totals and estimated data are rounded to no more than three significant digits; may not add to totals shown.

²Antimony content of antimony ore and concentrate, lead concentrates, and lead-zinc concentrates.

³Data estimated from United Nations Comtrade database for antimony ores and concentrates imported from Burma by China, India, Singapore, and Thailand.

⁴Less than ½ unit.

⁵Figures were converted to antimony content (using a conversion factor of 40% antimony) from gross weight in metric tons (t), which was reported as follows: 2013, 2,476 t; 2014, 2,684 t; 2015, 548 t; 2016, 511 t; 2017, 576 t.