ZINC

(Data in thousand metric tons of zinc content unless otherwise noted)

Domestic Production and Use: The value of zinc mined in 2017, based on zinc contained in concentrate, was about $2.17 billion. Zinc was mined in five States at 14 mines operated by four companies. Two smelter facilities, one primary and one secondary, operated by two companies, produced commercial-grade zinc metal. Of the total reported zinc consumed, most was used in galvanizing, followed by brass and bronze, zinc-base alloys, and other uses.

Salient Statistics—United States:	2013	2014	2015	2016	2017[e]
Production:					
Zinc in ore and concentrate	784	831	825	805	730
Refined zinc[1]	233	180	172	126	130
Imports for consumption:					
Zinc in ore and concentrate	2	(2)	(2)	(2)	10
Refined zinc	713	805	771	713	770
Exports:					
Zinc in ore and concentrate	669	644	708	597	630
Refined zinc	12	20	13	47	36
Shipments from Government stockpile	—	—	—	—	—
Consumption, apparent, refined zinc[3]	935	965	931	792	870
Price, average, cents per pound:					
North American[4]	95.6	107.1	95.5	101.4	134.1
London Metal Exchange (LME), cash	86.6	98.1	87.6	94.8	126.1
Reported producer and consumer stocks, refined zinc, yearend	74	88	87	84	80
Employment:					
Mine and mill, number[5]	2,560	2,620	2,680	2,350	2,590
Smelter, primary, number	257	259	250	246	250
Net import reliance[6] as a percentage of apparent consumption (refined zinc)	75	81	81	84	85

Recycling: In 2017, about 25% (33,000 tons) of the refined zinc produced in the United States was recovered from secondary materials at both primary and secondary smelters. Secondary materials included galvanizing residues and crude zinc oxide recovered from electric arc furnace dust.

Import Sources (2013–16): Ore and concentrate: Canada, 99%; and other, 1%. Refined metal: Canada, 73%; Mexico, 14%; Peru, 8%; Australia, 4%; and other, 1%. Waste and scrap: Canada, 72%; Mexico, 27%; and other, 1%. Combined total: Canada, 73%; Mexico, 14%; Peru, 8%; Australia, 4%; and other, 1%.

Tariff: Item	Number	Normal Trade Relations 12–31–17
Zinc ores and concentrates, Zn content	2608.00.0030	Free.
Zinc oxide; zinc peroxide	2817.00.0000	Free.
Unwrought zinc, not alloyed:		
Containing 99.99% or more zinc	7901.11.0000	1.5% ad val.
Containing less than 99.99% zinc:		
Casting-grade	7901.12.1000	3% ad val.
Other	7901.12.5000	1.5% ad val.
Zinc alloys	7901.20.0000	3% ad val.

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

Government Stockpile:

Stockpile Status—9–30–17[7]

Material	Inventory	Disposal Plan FY 2017	Disposals FY 2017
Zinc	7.25	7.25	—

Prepared by **Christine L. Thomas [(703) 648–7713, clthomas@usgs.gov]**

ZINC

Events, Trends, and Issues: Global zinc mine production in 2017 was estimated to be 13.2 million tons, a 5% increase from that of 2016. Zinc mine production in India increased significantly owing to the completion of the Rampura Agucha underground mine. Other notable zinc mine production increases took place at the Bisha Mine in Eritrea and at the Antamina Mine in Peru. In 2017, the zinc metal market continued the deficit observed in 2016, with consumption exceeding production. According to the International Lead and Zinc Study Group,[8] global refined zinc production in 2017 was estimated to be 13.53 million tons, and metal consumption was estimated to be 13.93 million tons, resulting in a production-to-consumption deficit of 400,000 tons of refined zinc. Domestic zinc mine production decreased by 9% in 2017 owing to the ongoing strike at the Lucky Friday Mine in Idaho and decreased output at the Red Dog Mine in Alaska. Refined zinc production increased by 6% as a result of production resuming at the Middle Tennessee Mines and increased production at the Clarksville, TN, smelter. As reflected by higher domestic refined production and imports, calculated apparent consumption increased by 9% to 870,000 tons.

Coincident with increased investment interest and the production to consumption deficit in 2016, the monthly average North American Special High Grade zinc price increased by about 16% in the first 9 months of 2017 to an average of $1.50 per pound in September from $1.29 per pound in January.

World Mine Production and Reserves: Reserves for Bolivia, Canada, India, Kazakhstan, Mexico, Sweden, the United States, and other countries were revised based on company data. The reserves estimates for Australia, China, and Peru were revised based on data from Government reports.

	Mine production[9]		Reserves[10]
	2016	2017[e]	
United States	805	730	9,700
Australia	965	1,000	[11]64,000
Bolivia	490	500	4,800
Canada	322	340	5,400
China	4,800	5,100	41,000
India	682	1,300	11,000
Kazakhstan	340	360	13,000
Mexico	670	680	20,000
Peru	1,330	1,400	28,000
Sweden	257	260	3,800
Other countries	1,890	1,520	33,000
World total (rounded)	12,600	13,200	230,000

World Resources: Identified zinc resources of the world are about 1.9 billion tons.

Substitutes: Aluminum and plastics substitute for galvanized sheet in automobiles; and aluminum alloys, cadmium, paint, and plastic coatings replace zinc coatings in other applications. Aluminum- and magnesium-base alloys are major competitors for zinc-base die-casting alloys. Many elements are substitutes for zinc in chemical, electronic, and pigment uses.

[e]Estimated. — Zero.
[1]Includes primary and secondary refined production.
[2]Less than ½ unit.
[3]Defined as refined production + refined imports – refined exports + adjustments for Government stock changes.
[4]Platts Metals Week price for North American SHG zinc; based on the LME cash price plus premium.
[5]Includes mine and mill employment at all zinc-producing mines. Source: Mine Safety and Health Administration.
[6]Defined as imports – exports + adjustments for Government stock changes.
[7]See Appendix B for definitions.
[8]International Lead and Zinc Study Group, 2017, ILZSG session/forecasts: Lisbon, Portugal, International Lead and Zinc Study Group press release, October 30, 5 p.
[9]Zinc content of concentrate and direct shipping ore.
[10]See Appendix C for resource and reserve definitions and information concerning data sources.
[11]For Australia, Joint Ore Reserves Committee-compliant reserves were about 24 million tons.