ZINC

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

Domestic Production and Use: The value of zinc mined in 2016, based on zinc contained in concentrate, was about $1.70 billion. Zinc was mined in 5 States at 12 mines operated by 4 companies. Three smelter facilities, one primary and two 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-based alloys, and other uses.

Salient Statistics—United States:	2012	2013	2014	2015	2016[e]
Production:					
Zinc in ore and concentrate	738	784	832	825	780
Refined zinc[1]	261	233	180	172	140
Imports for consumption:					
Zinc in ore and concentrate	6	3	(2)	(2)	(2)
Refined zinc	655	713	805	771	710
Exports:					
Zinc in ore and concentrate	591	669	644	709	500
Refined zinc	14	12	20	13	70
Shipments from Government stockpile	—	—	—	—	—
Consumption, apparent, refined zinc[3]	902	935	965	931	780
Price, average, cents per pound:					
North American[4]	95.8	95.6	107.1	95.5	99.0
London Metal Exchange (LME), cash	88.3	86.6	98.1	87.6	92.0
Reported producer and consumer stocks, refined zinc, yearend	74	74	88	91	80
Employment:					
Mine and mill, number[5]	2,310	2,560	2,620	2,680	2,320
Smelter, primary, number	252	257	259	250	250
Net import reliance[6] as a percentage of apparent consumption (refined zinc)	71	75	81	81	82

Recycling: In 2016, about 25% (35,000 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 (2012–15): Ore and concentrate: Canada, 69%; Mexico, 31%. Refined metal: Canada, 63%; Mexico, 13%; Australia, 10%; Peru, 7%; and other, 7%. Waste and scrap: Canada, 75%; Mexico, 23%; and other, 2%. Combined total: Canada, 64%; Mexico, 14%; Australia, 9%; Peru, 7%; and other, 6%.

Tariff: Item	Number	Normal Trade Relations 12–31–16
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—9–30–16[7]

Material	Inventory	Disposal Plan FY 2016	Disposals FY 2016
Zinc	7	7	—

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ZINC

Events, Trends, and Issues: Global zinc mine production in 2016 was 11.9 million tons, 7% less than that of 2015. Zinc mine production in Australia decreased by almost 50% as a result of the closure of the Century Mine in 2015 owing to reserves depletion and temporary production cutbacks at the George Fisher and Lady Loretta Mines. In a reversal from 2015, when production exceeded consumption, the zinc metal market fell into a sizable deficit during 2016, with consumption exceeding production. According to the International Lead and Zinc Study Group,[8] global refined zinc production in 2016 decreased by 3% to 13.22 million tons, and metal consumption was essentially unchanged at 13.57 million tons, resulting in a production-to-consumption deficit of 349,000 tons of refined zinc. Domestic zinc mine production decreased by 5% in 2016 owing mostly to a decrease in production in Tennessee; in December 2015, the Middle Tennessee Mines (50,000-ton-per-year capacity) were closed in response to low zinc prices at the time. Refined zinc production decreased by 19% as a result of a decline in secondary zinc production; in January, the zinc recycling facility in Mooresboro, NC (140,000-ton-per-year capacity) closed as a result of low zinc prices and ongoing equipment and technical issues. A 16% decrease in calculated apparent consumption, as reflected by lower domestic refined production and imports, was thought to be artificially low, owing to a significant drawdown in unreported consumer and merchant stocks.

Coincident with increased investment interest and the growing production to consumption deficit, the monthly average North American Special High Grade zinc price increased by almost 50% in the first 9 months of 2016 to an average of $1.10 per pound in September from $0.75 per pound in January.

World Mine Production and Reserves: Reserves estimates for Bolivia, Canada, Kazakhstan, Mexico, and other countries were revised based on company data. The reserves estimate for China was revised based on data from Government reports.

	Mine production[9]		Reserves[10]
	2015	2016[e]	
United States	825	780	11,000
Australia	1,600	850	[11]63,000
Bolivia	440	460	4,000
Canada	277	310	5,700
China	4,300	4,500	40,000
India	821	650	10,000
Ireland	236	150	1,100
Kazakhstan	339	340	11,000
Mexico	680	710	17,000
Peru	1,420	1,300	25,000
Sweden	247	250	3,000
Other countries	1,610	1,600	32,000
World total (rounded)	12,800	11,900	220,000

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-based alloys are major competitors for zinc-based 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, 2016, ILZSG session/forecasts: Lisbon, Portugal, International Lead and Zinc Study Group press release, October 31, 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.