

ZINC

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

Domestic Production and Use: The value of zinc mined in 2007, based on zinc contained in concentrate, was about \$2.59 billion. It was produced in 7 States at 14 mines operated by 8 companies. Alaska, Missouri, Montana, and Washington accounted for about 99% of domestic mine output; the Red Dog Mine in Alaska accounted for about 77% of total U.S. production. One primary and 12 large- and medium-sized secondary smelters refined zinc metal of commercial grade in 2007. Of the total zinc consumed, about 55% was used in galvanizing, 21% in zinc-based alloys, 16% in brass and bronze, and 8% in other uses. Zinc compounds and dust were used principally by the agriculture, chemical, paint, and rubber industries. Major coproducts of zinc mining and smelting, in order of decreasing tonnage, were lead, sulfuric acid, cadmium, silver, gold, and germanium.

Salient Statistics—United States:	2003	2004	2005	2006	2007^e
Production:					
Mine, zinc in ore ¹	768	739	748	727	740
Primary slab zinc	187	188	182	113	120
Secondary slab zinc ²	150	139	139	139	128
Imports for consumption:					
Ore and concentrate	164	231	156	383	380
Refined zinc	758	812	668	851	693
Exports:					
Ore and concentrate	841	745	786	825	789
Refined zinc	2	3	1	3	11
Shipments from Government stockpile ³	7	32	27	30	7
Consumption:					
Apparent, refined zinc	1,110	1,170	1,020	1,130	936
Apparent, all forms	1,340	1,410	1,260	1,380	1,180
Price, average, cents per pound:					
Domestic producers ⁴	40.6	52.5	67.1	158.9	159.0
London Metal Exchange (LME), cash	37.5	47.5	62.7	148.5	151.0
Producer and consumer stocks, slab zinc, yearend	64	63	61	56	58
Employment:					
Mine and mill, number ⁵	860	935	978	1,120	1,470
Smelter primary, number ^e	600	600	600	246	246
Net import reliance ⁶ as a percentage of apparent consumption:					
Refined zinc	70	72	68	78	73
All forms of zinc	58	60	55	64	58

Recycling: In 2007, an estimated 420,000 tons of zinc was recovered from waste and scrap; about 30% was recovered in the form of slab zinc and the remainder in alloys, oxide, and chemicals. Of the total amount of scrap recycled, 370,000 tons was derived from new scrap, and 50,000 tons was derived from old scrap. About 103,000 tons of scrap was exported, mainly to China (80%), and 23,000 tons was imported, most of which came from Canada (60%).

Import Sources (2003-06): Ore and concentrate: Peru, 67%; Mexico, 14%; Ireland, 9%; Australia, 9%; and other, 1%. Metal: Canada, 64%; Mexico, 17%; Australia, 4%; and other, 15%. Waste and scrap: Canada, 83%; Mexico, 15%; and other, 2%. Combined total: Canada, 50%; Peru, 17%; Mexico, 16%; Australia, 5%; and other, 12%.

Tariff: Item	Number	Normal Trade Relations⁷ 12-31-07
Zinc ores and concentrates	2608.00.0030	Free.
Hard zinc spelter	2620.11.0000	Free.
Zinc oxide and zinc peroxide	2817.00.0000	Free.
Unwrought metal containing 99.99% or more of zinc	7901.11.0000	1.5% ad val.
Alloys, casting-grade	7901.12.1000	3% ad val.
Alloys	7901.20.0000	3% ad val.
Waste and scrap	7902.00.0000	Free.

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

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Government Stockpile:**Stockpile Status—9-30-07⁸**

Material	Uncommitted inventory	Committed inventory	Authorized for disposal	Disposal plan FY 2007	Disposals FY 2007
Zinc	8	3	8	⁹ 45	3

Events, Trends, and Issues: The average monthly LME cash settlement price of zinc began the year at 171.74 cents per pound in January. The price fell during the months of February and March, rose during April and May, and then continued to decline through September. Strong demand for zinc, largely supported by China's growing economy and infrastructure, continued to outpace refined zinc production in 2007. The supply deficit for refined zinc, however, narrowed in 2007 from that of 2006, and a surplus was forecast for 2008. Rising refinery production continued to be driven by increases in production from China and India.

Zinc mine production in the United States was expected to increase during the next few years owing to recent mine restarts. Around mid-2007, a company reopened three zinc mines in eastern Tennessee. Another company planned to reopen a zinc mining complex in mid-Tennessee by the end of 2007. The zinc mines in eastern and mid-Tennessee were previously shut down in 2001 and 2003, respectively, owing to low zinc prices.

Prefeasibility studies for a United States zinc and iron recycling project were completed in early 2007. The project included plans to construct an electric arc furnace (EAF) dust processing plant in Ohio and to modify an existing primary zinc smelter in Illinois. The Ohio plant was to recover zinc and lead in an oxide concentrate (HZO) from EAF dust generated by the steel industry. The HZO will be sent to the modified Illinois facility to recover the zinc. The Illinois facility will be designed to produce 90,000 metric tons per year of Special High Grade zinc.

World Mine Production, Reserves, and Reserve Base: Reserves data, and where appropriate, reserve base data were revised based on updated resource information published by companies with mines in Australia, Canada, Kazakhstan, Mexico, Peru, and the United States.

	Mine production ¹⁰		Reserves ¹¹	Reserve base ¹¹
	2006	2007 ^e		
United States	727	740	14,000	90,000
Australia	1,380	1,400	42,000	100,000
Canada	710	680	5,000	30,000
China	2,600	2,800	33,000	92,000
Kazakhstan	400	400	14,000	35,000
Mexico	480	480	7,000	25,000
Peru	1,200	1,500	18,000	23,000
Other countries	2,500	2,500	49,000	87,000
World total (rounded)	10,000	10,500	180,000	480,000

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

Substitutes: Aluminum, steel, and plastics substitute for galvanized sheet. Aluminum, plastics, and magnesium are major competitors as diecasting materials. Plastic coatings, paint, and cadmium and aluminum alloy coatings replace zinc for corrosion protection; aluminum alloys substitute for brass. Many elements are substitutes for zinc in chemical, electronic, and pigment uses.

^eEstimated.

¹Zinc recoverable after smelting and refining was reported for mine production prior to Mineral Commodity Summaries 2001.

²Revisions to secondary slab zinc production reflect new company information.

³Revised basis of calculation; based on changes in yearend inventory from the previous year.

⁴Platts Metals Week price for North American Special High Grade zinc.

⁵Includes mine and mill employment at lead-zinc-, zinc-, and zinc-lead-producing mines only. Source: Mine Safety and Health Administration.

⁶Defined as imports – exports + adjustments for Government and industry stock changes.

⁷No tariff for Canada and Mexico for items shown.

⁸[See Appendix B for definitions.](#)

⁹Actual quantity will be limited to remaining inventory.

¹⁰Zinc content of concentrate and direct shipping ore.

¹¹[See Appendix C for definitions.](#)