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

Domestic Production and Use: Domestic mine production in 2008 increased by about 12% to 1.3 million tons and its value rose to about $9.4 billion. The principal mining States, in descending order of production—Arizona, Utah, New Mexico, Nevada, and Montana—accounted for more than 99% of domestic production; copper also was recovered at mines in Idaho and Missouri. Although copper was recovered at 27 mines operating in the United States, 17 mines accounted for about 99% of production. Three primary smelters, 4 electrolytic and 3 fire refineries, and 15 solvent extraction-electrowinning facilities operated during the year. Refined copper and direct-melt scrap were consumed at about 30 brass mills; 16 rod mills; and 500 foundries, chemical plants, and miscellaneous consumers. Copper and copper alloy products were used in building construction, 49%; electric and electronic products, 21%; transportation equipment, 10%; consumer and general products, 11%; and industrial machinery and equipment, 9%.[1]

Salient Statistics—United States:	2004	2005	2006	2007	2008[e]
Production:					
Mine	1,160	1,140	1,200	1,170	1,310
Refinery:					
Primary	1,260	1,210	1,210	1,280	1,250
Secondary	51	47	45	42	50
Copper from all old scrap	191	183	150	150	140
Imports for consumption:					
Ores and concentrates	23	([2])	([2])	([2])	([2])
Refined	807	1,000	1,070	829	730
Unmanufactured	1,060	1,230	1,320	1,100	1,000
General imports, refined	704	977	1,070	832	730
Exports:					
Ores and concentrates	24	137	108	90	100
Refined	118	40	106	51	45
Unmanufactured	789	815	990	835	870
Consumption:					
Reported, refined	2,410	2,270	2,110	2,140	2,000
Apparent, unmanufactured[3]	2,550	2,400	2,190	2,280	2,090
Price, average, cents per pound:					
Domestic producer, cathode	133.9	173.5	314.8	328.0	324
London Metal Exchange, high-grade	130.0	166.8	304.9	322.8	320
Stocks, yearend, refined, held by U.S. producers, consumers, and metal exchanges	134	66	196	130	120
Employment, mine and mill, thousands	6.4	7.0	8.4	9.7	11.2
Net import reliance[4] as a percentage of apparent consumption	43	42	38	37	33

Recycling: Old scrap, converted to refined metal and alloys, provided 140,000 tons of copper, equivalent to 6% of apparent consumption. Purchased new scrap, derived from fabricating operations, yielded 750,000 tons of contained copper; about 89% of the copper contained in new scrap was consumed at brass or wire-rod mills. Of the total copper recovered from scrap (including aluminum- and nickel-based scrap), brass mills recovered 72%; miscellaneous manufacturers, foundries, and chemical plants, 14%; ingot makers, 9%; and copper smelters and refiners, 5%. Copper in all old and new, refined or remelted scrap contributed about 31% of the U.S. copper supply.

Import Sources (2004-07): Unmanufactured: Chile, 40%; Canada, 33%; Peru, 13%; Mexico, 6%; and other, 8%. Refined copper accounted for 79% of unwrought copper imports.

Tariff: Item	Number	Normal Trade Relations[5] 12-31-08
Copper ores and concentrates	2603.00.0000	1.7¢/kg on lead content.
Unrefined copper; anodes	7402.00.0000	Free.
Refined and alloys; unwrought	7403.00.0000	1.0% ad val.
Copper wire (rod)	7408.11.6000	3.0% ad val.

Depletion Allowance: 15% (Domestic), 14% (Foreign).

Government Stockpile: The stockpiles of refined copper and brass were liquidated in 1993 and 1994, respectively. Details on inventories of beryllium-copper master alloys (4% beryllium) can be found in the section on beryllium.

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Events, Trends, and Issues: Although copper prices began to weaken in September, on average copper prices during the first 9 months of 2008 remained at or near record-high levels. The London Metal Exchange Ltd. (LME) price reached an alltime high of $4.08 per pound in April and averaged $3.61 per pound for the first 9 months of the year. Global commodity exchange inventories, which began the year at low levels, trended downward for the first 9 months of the year. Despite numerous announced expansions in mine capacity, estimated global copper mine production for the first 9 months of the year was slightly lower than that for the same period of 2007. Numerous factors, including labor unrest, lower ore grades, rapidly escalating production costs, technical problems, and utility and equipment shortages, contributed to lower than anticipated production. In October, concurrent with development of the global financial crisis, copper prices plummeted, the LME price falling below $1.70 per pound. Though it cautioned that the economic crisis could significantly alter projections, the International Copper Study Group[6] forecast a small annual production surplus to develop by yearend that would expand to about 300,000 tons in 2009.

In the United States, mine production rose owing to the startup of two major mining projects and expanded output of existing operations. In October, however, the leading U.S. producer announced that the drop in copper prices and rising production costs would lead to revaluation of its planned global expansions. Owing to lower ore grades and increases in energy, labor, mining rates, and other input costs, the company's U.S. production costs had risen by 48% to $1.24 per pound of copper in the first 9 months of 2008 from the comparative period in 2007. Domestic consumption of refined copper continued to trend lower owing to weaker housing and automotive demand and brass mill closings. Domestic mine production was expected to rise by more than 200,000 tons in 2009 owing to the startup of new production and increased capacity utilization, while consumption was expected to decline further.

World Mine Production, Reserves, and Reserve Base: Official reserves reported by China may include small and low-grade deposits not currently economic to develop. Significant upward revisions to reserves for Chile, Kazakhstan, Mexico, and Peru are based on tabulated data from individual company reports.

	Mine production		Reserves[7]	Reserve base[7]
	2007	2008[e]		
United States	1,170	1,310	35,000	70,000
Australia	870	850	24,000	43,000
Canada	589	590	10,000	20,000
Chile	5,560	5,600	160,000	360,000
China	946	1,000	30,000	63,000
Indonesia	797	650	36,000	38,000
Kazakhstan	407	460	18,000	22,000
Mexico	347	270	38,000	40,000
Peru	1,190	1,220	60,000	120,000
Poland	452	430	30,000	48,000
Russia	740	750	20,000	30,000
Zambia	520	560	19,000	35,000
Other countries	1,840	2,030	70,000	110,000
World total (rounded)	15,400	15,700	550,000	1,000,000

World Resources: A recent assessment of U.S. copper resources indicated 550 million tons of copper in identified (260 million tons) and undiscovered resources (290 million tons).[8] A preliminary assessment indicates that global land-based resources exceed 3 billion tons. Deep-sea nodules were estimated to contain 700 million tons of copper.

Substitutes: Aluminum substitutes for copper in power cables, electrical equipment, automobile radiators, and cooling and refrigeration tube; titanium and steel are used in heat exchangers; optical fiber substitutes for copper in some telecommunications applications; and plastics substitute for copper in water pipe, drain pipe, and plumbing fixtures.

[e]Estimated.

[1]Some electrical components are included in each end use. Distribution for 2007 by the Copper Development Association, Inc., 2008.

[2]Less than ½ unit.

[3]Defined as primary refined production + copper from old scrap converted to refined metal and alloys + refined imports – refined exports ± changes in refined stocks. General imports were used to calculate apparent consumption.

[4]Defined as imports – exports + adjustments for Government and industry stock changes for refined copper.

[5]No tariff for Canada and Mexico for items shown. Tariffs for other countries for some items may be eliminated under special trade agreements.

[6]International Copper Study Group, 2008, Forecast 2008-2009: Lisbon, Portugal, International Copper Study Group press release, October 8, 1 p.

[7]See Appendix C for definitions.

[8]U.S. Geological Survey National Mineral Resource Assessment Team, 2000, 1998 assessment of undiscovered deposits of gold, silver, copper, lead, and zinc in the United States: U.S. Geological Survey Circular 1178, 21 p.