

Mineral Industry Surveys

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MOLYBDENUM IN NOVEMBER 2002

Domestic production of molybdenum in concentrate in November 2002 was about 19% less than that of the previous month and was about 14% less than that of November 2001, according to the U.S. Geological Survey. Producer stocks of molybdenum in concentrate, oxide, and other product forms were 9,810 metric tons at the beginning of 2002, and 6,940 metric tons at the end of November.

According to Ryan's Notes (2002), the November monthly averages for U.S. ferromolybdenum prices ranged from \$4.481 to \$4.775 per pound of molybdenum content, compared with \$5.422 to \$5.844 in October. European ferromolybdenum monthly averages ranged from \$7.794 to \$8.300 per kilogram of molybdenum content in November as compared to \$9.944 to \$10.422 in October. In November, worldwide molybdenum oxide prices ranged from \$2.888 to \$3.363 per pound versus \$3.844 to \$4.261 in October.

Included in this Mineral Industry Surveys are U.S. production and shipments of molybdenum concentrates and materials, plus U.S. consumption, by end use, and stocks of molybdenum material in October and November 2002; also included are trade data for September and October 2002.

Update

Phelps Dodge Corp. reported that in calendar year 2002 (January through December 2002), it produced 44.9 million pounds of molybdenum concentrate, as compared with 55.5 million pounds during the same period in 2001. For the fourth quarter of 2002, Phelps Dodge produced 11.8 million pounds of molybdenum concentrate as compared with 14.4 million pounds in the fourth quarter of 2001. The quantity of molybdenum produced and sold by Phelps Dodge in 2002 was 46.7 million pounds as compared with 55.1 million pounds in 2001. The considerable decline in molybdenum production in 2002 stems from the cutback in copper production at the Bagdad and Sierrita Mines in Arizona during the first quarter of 2002 (Phelps Dodge Corp., 2003).

Reference Cited

Ryan's Notes, 2002, [Untitled]: Ryan's Notes, v. 8, no. 48, December 2, p. 4.

Internet Reference Cited

Phelps Dodge Corp., 2003 (January 29), Phelps Dodge reports lower fourth quarter results due to asset impairments, news release accessed February 10, 2003, via URL <http://www.phelpsdodge.com/index-news.html>.

TABLE 1
U.S. SALIENT MOLYBDENUM CONCENTRATE STATISTICS 1/

(Metric tons, contained molybdenum)

	2001	2002		Year to date
	January-December	October	November	
Production	37,600	3,180 r/	2,570	29,300
Shipments:				
Domestic	20,700	1,650 r/	1,610	19,000
Export	16,300	999	877	10,100

r/ Revised.

1/ Data are rounded to no more than three significant digits.

TABLE 2
U.S. REPORTED PRODUCTION AND SHIPMENTS OF MOLYBDENUM PRODUCTS 1/

(Metric tons, contained molybdenum)

	2001	2002		Year to date
	January-December	October	November	
Gross production	40,300	2,530	3,050	27,400
Internal consumption 2/	24,600	1,750	2,190	18,200
Gross shipments	32,600	2,350	1,840	25,400

1/ Data are rounded to no more than three significant digits.

2/ Includes molybdic oxides, metal powder, ammonium molybdate, sodium molybdate, and other.

TABLE 3
U.S. REPORTED CONSUMPTION, BY END USES, AND CONSUMER STOCKS OF MOLYBDENUM MATERIALS 1/

(Kilograms, contained molybdenum)

End use	Molybdic oxides	Ferro molybdenum 2/	Ammonium and sodium molybdate	Molybdenum scrap	Other	Total
2002, October:						
Steel:						
Carbon	11,400	W	--	--	W	11,400
High-strength low-alloy	27,900	8,220	--	--	--	36,100
Stainless and heat-resisting	234,000	40,700	--	--	8,520	283,000
Full alloy	118,000	183,000	--	--	2,430	303,000
Tool	52,900	W	--	--	W	52,900
Total	443,000	232,000	--	--	10,900	686,000
Cast irons (gray, malleable, and ductile iron)	W	17,000	--	--	W	17,000
Superalloys	64,400	W	--	(3/)	100,000	164,000
Alloys: (other than steels, cast irons, and superalloys)						
Welding materials (structural and hard-facing)	--	W	--	--	6	6
Other alloys	260	52	--	--	6,350	6,660
Mill products made from metal powder 4/	--	--	--	--	88,600	88,600
Cemented carbides and related products 5/	--	--	--	--	20	20
Chemical and ceramic uses:						
Pigments	--	--	W	--	W	W
Catalysts	77,300	--	W	--	W	77,300
Other	--	--	--	--	--	--
Miscellaneous and unspecified uses:						
Lubricants	--	--	--	--	13,100	13,100
Other	1,090	46,100	77,700	--	19,500	144,000
Grand total	586,000	295,000	77,700	--	239,000	1,200,000
Stocks, October 31, 2002	453,000	297,000	16,700	13,000	890,000	1,670,000

See footnotes at end of table.

TABLE 3--Continued
U.S. REPORTED CONSUMPTION, BY END USES, AND CONSUMER STOCKS OF MOLYBDENUM MATERIALS 1/

(Kilograms, contained molybdenum)

End use	Molybdic oxides	Ferro molybdenum 2/	Ammonium and sodium molybdate	Molybdenum scrap	Other	Total
2002, November:						
Steel:						
Carbon	10,900	W	--	--	W	10,900
High-strength low-alloy	33,800	8,420	--	--	--	42,200
Stainless and heat-resisting	268,000	40,100	--	--	8,520	316,000
Full alloy	109,000	167,000	--	--	2,430	279,000
Tool	60,200	W	--	--	W	60,200
Total	481,000	216,000	--	--	10,900	708,000
Cast irons (gray, malleable, and ductile iron)	W	15,400	--	--	W	15,400
Superalloys	49,000	W	--	(3/)	81,000	130,000
Alloys: (other than steels, cast irons, and superalloys)						
Welding materials (structural and hard-facing)	--	W	--	--	6	6
Other alloys	260	140	--	--	6,350	6,750
Mill products made from metal powder 4/	--	--	--	--	77,000	77,000
Cemented carbides and related products 5/	--	--	--	--	10	10
Chemical and ceramic uses:						
Pigments	--	--	W	--	W	W
Catalysts	77,300	--	W	--	W	77,300
Other	--	--	--	--	--	--
Miscellaneous and unspecified uses:						
Lubricants	--	--	--	--	12,800	12,800
Other	1,090	38,000	77,000	--	16,400	132,000
Grand total	609,000	269,000	77,000	--	205,000	1,160,000
Stocks, November 30, 2002	340,000	291,000	5,170	16,600	891,000	1,540,000

W Withheld to avoid disclosing company proprietary data; included in "Other" of the "Miscellaneous and unspecified uses" category. -- Zero.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ Includes calcium molybdate.

3/ Included in "Other" of the "Superalloys" category.

4/ Includes ingot, wire, rod, and sheet.

5/ Includes construction, mining, oil and gas, metal working machinery.

TABLE 4
U.S. EXPORTS OF MOLYBDENUM ORES AND CONCENTRATES
(including roasted concentrate), BY COUNTRY 1/

(Kilograms, contained molybdenum)

Country	2001	2002		
	January-December	September	October	Year to date
Australia	147,000	11,200	--	46,900
Belgium	3,380,000	163,000	536,000	3,810,000
Brazil	30,100	2,900	3,560	29,800
Canada	650,000	46,100	110,000	918,000
Chile	11,800	4,310	--	16,200
China	201,000	--	--	46,900
Germany	512,000	--	--	61,800
India	294,000	54	--	141,000
Italy	95,000	--	--	47,900
Japan	1,700,000	67,300	52,200	1,030,000
Korea, Republic of	29,200	3,150	2,280	65,900
Mexico	764,000	3,000	--	185,000
Netherlands	13,500,000	724,000	675,000	6,240,000
Spain	63,400	--	--	41,200
Sweden	48,200	10,700	--	35,000
Taiwan	6,320	5,100	--	112,600
United Kingdom	6,210,000	336,000	--	3,610,000
Other	181,000	--	495	147,000
Total	27,800,000	1,380,000	1,380,000	16,500,000

-- Zero.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

Source: U.S. Census Bureau.

TABLE 5
U.S. EXPORTS OF FERROMOLYBDENUM, BY COUNTRY 1/

(Kilograms, contained molybdenum)

Country	2001		2002	
	January-December	September	October	Year to date
Australia	599	--	--	--
Canada	442,000	24,800	85,900	523,000
Chile	--	--	--	240
China	11,500	--	--	--
Germany	111,000	--	--	--
Korea, Republic of	876	--	--	--
Mexico	50,300	1,670	743	51,000
Netherlands	12,600	--	--	--
Switzerland	--	--	--	21,800
Taiwan	--	5,110	--	5,390
Total	629,000	31,600	86,600	602,000

-- Zero.

1/ Data are rounded to no more than three significant digits, may not add to totals shown.

Source: U.S. Census Bureau.

TABLE 6
U.S. IMPORTS FOR CONSUMPTION OF MOLYBDENUM PRODUCTS 1/

(Kilograms, unless otherwise specified)

Material	January-December 2001			October 2002		
	Gross weight	Contained molybdenum	Value (c.i.f.) (thousands)	Gross weight	Contained molybdenum	Value (c.i.f.) (thousands)
Ore and concentrates roasted	9,470,000	6,000,000	\$32,900	594,000	369,000	\$3,650
Ore and concentrates other	10,000	11,600	73	353,000	182,000	1,850
Molybdenum chemicals:						
Oxides and hydroxides	1,010,000	NA	5,530	22,300	NA	221
Molybdates of ammonium	2,740,000	1,610,000	15,100	115,000	66,700	917
Molybdates (all others)	318,000	113,000	1,050	61,700	11,900	294
Molybdenum orange	1,120,000	NA	5,180	153,000	NA	586
Ferromolybdenum	5,570,000	3,580,000	21,400	442,000	283,000	2,990
Molybdenum powders	172,000	163,000	3,390	500	450	12
Molybdenum unwrought	24,700	24,400	267	--	--	--
Molybdenum waste and scrap	775,000	714,000	7,140	--	--	--
Molybdenum wire	16,900	NA	1,080	--	--	--
Molybdenum other	14,400	NA	1,940	154	NA	62
Total	21,200,000	12,200,000	95,100	1,740,000	914,000	10,600

NA Not available.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

Source: U.S. Census Bureau.