

Mineral Industry Surveys

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MOLYBDENUM IN FEBRUARY 2004

Domestic production of molybdenum in concentrate in February 2004 was about 26% less than that of the previous month and was about 6% less than that of February 2003, according to the U.S. Geological Survey. Producer stocks of molybdenum in concentrate, oxide, and other product forms were about 4,730 metric tons (t) at the beginning of 2004, and 5,100 t at the end of February.

According to Ryan's Notes (2004c), the February monthly averages for U.S. ferromolybdenum prices ranged from \$8.675 to \$8.875 per pound of molybdenum content, compared with \$8.825 to \$9.050 in January. European ferromolybdenum monthly averages ranged from \$18.763 to \$19.056 per kilogram of molybdenum content in February as compared to \$19.563 to \$20.075 in January. In February, worldwide molybdenum oxide prices ranged from \$7.463 to \$7.650 per pound versus \$7.894 to \$8.175 in January.

Phelps Dodge Corp. (PD) announced that it expects to achieve full capacity production at its Bagdad concentrator by the end of the second quarter and at its Sierrita concentrator by the fourth quarter of 2004. PD expects to produce about 15,000 t (33 million pounds) of molybdenum concentrate in 2004 from the two operations, up from 13,600 t (30 million pounds) in 2003. While achieving full capacity production at the two mines depends on the ore grades being mined, the output

numbers show PD operated at about 80% of their historical high in 2003 and would achieve about 90% of their historical high in 2004 (Ryan's Notes, 2004a).

PD's Stowmarket, UK, ferromolybdenum converter, which primarily serves European customers, was back in full production as of February 18, 2004. Equipment problems at the plant led to a declaration of *force majeure* on January 30, 2004. Market sources indicated that PD was able to cover its customer commitments as production problems and labor difficulties at two European customers eased delivery pressure in the first half of February (Ryan's Notes, 2004b).

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 January 2003 and February 2004; also included are trade data for December 2003 and January 2004.

References Cited

- Ryan's Notes, 2004a, PD moly output up in 2003 and 2004: Ryan's Notes, v. 10, no. 5, February 2, p. 2.
Ryan's Notes, 2004b, Phelps Dodge's Stowmarket, UK, ferromoly converter back: Ryan's Notes, v. 10, no. 8, February 23, p. 4.
Ryan's Notes, 2004c, [untitled]: Ryan's Notes, v. 10, no. 9, March 1, p. 4.

TABLE 1
U.S. SALIENT MOLYBDENUM CONCENTRATE STATISTICS¹

(Metric tons, contained molybdenum)

	2003	2004		
	January- December ^p	January ^f	February	Year to date
Production	34,100 ^r	3,370	2,500	5,870
Shipments: ²				
Domestic	20,300 ^r	2,190	1,990	4,180
Export	13,700	1,260	427	1,680

^pPreliminary. ^rRevised.

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

²As reported by producers.

TABLE 2
U.S. REPORTED PRODUCTION AND SHIPMENTS OF MOLYBDENUM
PRODUCTS¹

(Metric tons, contained molybdenum)

	2003	2004		
	January- December ^p	January	February	Year to date
Gross production	41,400	5,950	4,940	10,900
Internal consumption ²	29,600	3,790	2,930	6,710
Gross shipments	31,100	2,510	2,830	5,340

^pPreliminary.

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

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

TABLE 3
U.S. REPORTED CONSUMPTION, BY END USES, AND CONSUMER STOCKS OF MOLYBDENUM MATERIALS¹

(Kilograms, contained molybdenum)

End use	Molybdc oxides	Ferro molyb- denum ²	Ammonium and sodium molybdate	Molyb- denum scrap	Other	Total
2004, January:						
Steel:						
Carbon	12,300	W	--	--	W	12,300
High-strength low-alloy	31,000	9,620	--	--	--	40,600
Stainless and heat-resisting	210,000	36,800	--	--	7,180	254,000
Full alloy	104,000 ^r	169,000 ^r	--	--	1,860	275,000 ^r
Tool	61,000	W	--	--	W	61,000
Total	418,000 ^r	215,000 ^r	--	--	9,040	643,000 ^r
Cast irons (gray, malleable, and ductile iron)	W	9,560	--	--	763	10,300
Superalloys	58,300 ^r	W	--	(3)	90,700 ^r	149,000 ^r
Alloys: (other than steels, cast irons, and superalloys)						
Welding materials (structural and hard-facing)	--	W	--	--	6	6
Other alloys	84	1,490	--	--	2,610	4,190
Mill products made from metal powder ⁴	--	--	--	--	62,000	62,000
Cemented carbides and related products ⁵	--	--	--	--	W	W
Chemical and ceramic uses:						
Pigments	--	--	W	--	--	W
Catalysts	77,300	--	W	--	W	77,300
Other chemicals	--	--	--	--	1,340	1,340
Miscellaneous and unspecified uses:						
Lubricants	--	--	--	--	17,000	17,000
Other	1,090	45,600	75,000	--	17,400	139,000
Grand total	555,000 ^r	272,000 ^r	75,000	--	201,000 ^r	1,100,000 ^r
Stocks, January 31, 2004	391,000 ^r	187,000 ^r	5,720 ^r	28,200 ^r	852,000	1,460,000 ^r
2004, February:						
Steel:						
Carbon	11,100	W	--	--	W	11,100
High-strength low-alloy	34,500	12,300	--	--	--	46,800
Stainless and heat-resisting	193,000	30,000	--	--	7,180	230,000
Full alloy	102,000	190,000	--	--	1,860	294,000
Tool	60,600	W	--	--	W	60,600
Total	401,000	232,000	--	--	9,040	642,000
Cast irons (gray, malleable, and ductile iron)	W	9,140	--	--	763	9,910
Superalloys	73,900	W	--	(3)	81,800	156,000
Alloys: (other than steels, cast irons, and superalloys)						
Welding materials (structural and hard-facing)	--	W	--	--	6	6
Other alloys	315	2,370	--	--	2,610	5,290
Mill products made from metal powder ⁴	--	--	--	--	64,400	64,400
Cemented carbides and related products ⁵	--	--	--	--	W	W
Chemical and ceramic uses:						
Pigments	--	--	W	--	--	W
Catalysts	77,300	--	W	--	W	77,300
Other chemicals	--	--	--	--	1,050	1,050
Miscellaneous and unspecified uses:						
Lubricants	--	--	--	--	16,400	16,400
Other	1,090	34,500	76,900	--	17,400	130,000
Grand total	554,000	278,000	76,900	--	193,000	1,100,000
Stocks, February 29, 2004	491,000	180,000	3,670	17,700	849,000	1,540,000

¹Revised. W Withheld to avoid disclosing company proprietary data; included in "Other" of the "Miscellaneous and unspecified uses" category. -- Zero.

²Data are rounded to no more than three significant digits; may not add to totals shown.

³Includes calcium molybdate.

⁴Included in "Other" of the "Superalloys" category.

⁵Includes ingot, wire, rod, and sheet.

⁶Includes construction, mining, oil and gas, metal working machinery.

TABLE 4
U.S. EXPORTS OF MOLYBDENUM ORES AND CONCENTRATES
(including roasted concentrate), BY COUNTRY¹

(Kilograms, contained molybdenum)

Country	2003		2004	
	January- December	December	January	Year to date
Australia	102,000	2,360	--	--
Austria	--	--	23,100	23,100
Belgium	3,190,000	238,000	344,000	344,000
Brazil	42,600	280	1,700	1,700
Canada	910,000	29,900	14,900	14,900
Chile	368,000	352,000	318,000	318,000
China	82,600	19,500	--	--
Costa Rica	22,500	--	3,280	3,280
India	44,300	32,400	--	--
Italy	20,300	5,070	--	--
Japan	2,000,000	136,000	51,000	51,000
Korea, Republic of	61,400	1,880	5,960	5,960
Mexico	3,730,000	41,100	21,700	21,700
Netherlands	10,900,000	366,000	373,000	373,000
Sweden	25,700	--	--	--
Taiwan	9,590	--	590	590
United Kingdom	7,880,000	558,000	584,000	584,000
Other	137,000	14,400	885	885
Total	29,500,000	1,800,000	1,740,000	1,740,000

-- Zero.

¹Data 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 COUNTRY¹

(Kilograms, contained molybdenum)

Country	2003		2004	
	January- December	December	January	Year to date
Australia	873	--	545	545
Canada	547,000	63,800	70,000	70,000
Denmark	241	--	--	--
Japan	61	--	--	--
Mexico	43,100	--	10,300	10,300
Netherlands	25,500	--	--	--
Total	617,000	63,800	80,800	80,800

-- Zero.

¹Data 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 PRODUCTS¹

(Kilograms, unless otherwise specified)

Material	January-December 2003			January 2004		
	Gross weight	Contained molybdenum	Value (c.i.f.) (thousands)	Gross weight	Contained molybdenum	Value (c.i.f.) (thousands)
Ore and concentrates roasted	6,310,000	3,960,000	\$41,900	420,000	264,000	\$3,800
Ore and concentrates other	2,870,000	1,230,000	9,580	5,000	4,860	39
Molybdenum chemicals:						
Oxides and hydroxides	1,300,000	NA	9,780	536	NA	18
Molydates of ammonium	1,620,000	937,000	11,600	140,000	65,800	1,180
Molydates (all others)	324,000	145,000	1,200	82,800	36,900	218
Molybdenum orange	987,000	NA	4,440	49,500	NA	262
Ferromolybdenum	5,740,000	3,690,000	38,200	572,000	370,000	5,680
Molybdenum powders	57,000	43,100	2,000	1,110	1,100	41
Molybdenum unwrought	139,000	136,000	1,700	35,300	35,200	573
Molybdenum waste and scrap	461,000	388,000	5,000	36,300	35,100	548
Molybdenum wire	10,600	NA	776	947	NA	74
Molybdenum other	79,900	NA	6,420	5,440	NA	483
Total	19,900,000	10,500,000	133,000	1,350,000	813,000	12,900

NA Not available.

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

Source: U.S. Census Bureau.