

Mineral Industry Surveys

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MOLYBDENUM IN APRIL 2004

Domestic production of molybdenum in concentrate in April 2004 was about 3% less than that of the previous month and was about 18% more than that of April 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 4,240 t at the end of April.

According to Ryan's Notes (2004b), the April monthly average prices for U.S. ferromolybdenum ranged from \$15.222 to \$15.889 per pound of molybdenum content, compared with \$9.889 to \$10.444 in March. European ferromolybdenum monthly averages ranged from \$37.444 to \$39.000 per kilogram of molybdenum content in April as compared to \$23.861 to \$24.794 in March. In April, worldwide molybdenum oxide prices ranged from \$15.122 to \$15.750 per pound versus \$9.761 to \$10.194 in March.

Molybdenum prices in early April, for both roasted and converted material, soared to levels not seen for the past 25 years. In Europe, drummed molybdenum oxide quotes began April in the range of \$12.50-\$16.00 per pound in Rotterdam warehouse before leaping ahead to \$15.00-\$16.00 per pound by April 12. Similarly, 65% ferromolybdenum peaked at \$38.00-\$41.00 per kilogram in mid-April after beginning the month at \$32.00-\$34.00 per kilogram. Although supply-side issues spurred the initial upturn, strengthening demand from the steel industry created upward price momentum (Metal Bulletin Research, 2004).

Corporación Nacional del Cobre de Chile (Codelco) in Chile announced it planned to produce 30,000 to 33,000 t (65 to 72 million pounds) of molybdenum in 2004 as compared with 23,000 t (51 million pounds) in 2003. Codelco confirmed that it experienced some shipping delays in January and February related to overbooked vessels, but stated those glitches had been worked out and Codelco was meeting its commitments. Codelco conceded there was some supply tightness but said it was only a matter of time before extra output from Chile, and from Phelps Dodge Corp. and the reopening of Montana Resources' Continental Mine in the United States, made its way through the pipeline and calmed the market. Codelco estimated that worldwide production in 2004 would increase 12%-15% over 2003 levels (Ryan's Notes, 2004a).

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 March and April 2004; also included are trade data for February and March 2004.

References Cited

- Metal Bulletin Research, 2004, Molybdenum highlights, wild ride in molybdenum markets: Metal Bulletin Research, Ferro-alloys Monthly, no. 140, May 10, p. 14.
Ryan's Notes, 2004a, Moly squeeze could be temporary: Ryan's Notes, v. 10, no. 16, April 19, p. 3.
Ryan's Notes, 2004b, [untitled]: Ryan's Notes, v. 10, no. 18, May 3, p. 4.

TABLE 1
U.S. SALIENT MOLYBDENUM CONCENTRATE STATISTICS¹

(Metric tons, contained molybdenum)

	2003	2004		Year to date
	January-December ^p	March	April	
Production	34,400	3,160	3,070	12,100
Shipments: ²				
Domestic	26,800	2,660 ^r	2,300	9,250
Export	7,750	559 ^r	619	3,170

^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		Year to date
	January-December ^p	March	April	
Gross production	41,400	4,970	4,630	20,500
Internal consumption ²	29,600	3,190	2,980	12,900
Gross shipments	30,100	3,560	3,280	12,200

^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, March:						
Steel:						
Carbon	11,800	W	--	--	W	11,800
High-strength low-alloy	33,600	8,250 ^r	--	--	11,300	53,200 ^r
Stainless and heat-resisting	209,000 ^r	67,100 ^r	--	W	6,780	283,000 ^r
Full alloy	107,000	181,000	--	--	1,510	290,000
Tool	56,800	W	--	--	--	56,800
Total	419,000 ^r	257,000 ^r	--	W	19,600	695,000 ^r
Cast irons (gray, malleable, and ductile iron)	W	10,100	--	--	763	10,800
Superalloys	57,600	W	--	(3)	121,000	178,000
Alloys: (other than steels, cast irons, and superalloys)						
Welding materials (structural and hard-facing)	--	W	--	--	6	6
Other alloys	108	3,240	--	--	20	3,370
Mill products made from metal powder ⁴	--	--	--	--	104,000	104,000
Cemented carbides and related products ⁵	--	--	--	--	W	W
Chemical and ceramic uses:						
Pigments	--	--	W	--	--	W
Catalysts	77,300	--	W	--	W	77,300
Other chemicals	--	--	--	--	-- ^r	-- ^r
Miscellaneous and unspecified uses:						
Lubricants	--	--	--	--	15,200	15,200
Other	1,090	34,300	77,000	16	16,800	129,000
Grand total	555,000 ^r	304,000 ^r	77,000	16	277,000 ^r	1,210,000 ^r
Stocks, March 31, 2004	441,000 ^r	195,000 ^r	2,810	11,200	859,000 ^r	1,510,000 ^r
2004, April:						
Steel:						
Carbon	11,700	W	--	--	W	11,700
High-strength low-alloy	33,600	8,490	--	--	11,300	53,500
Stainless and heat-resisting	205,000	69,600	--	W	6,780	281,000
Full alloy	93,600	182,000	--	--	1,510	277,000
Tool	45,400	W	--	--	--	45,400
Total	389,000	260,000	--	W	19,600	669,000
Cast irons (gray, malleable, and ductile iron)	W	8,300	--	--	763	9,060
Superalloys	73,600	W	--	(3)	106,000	180,000
Alloys: (other than steels, cast irons, and superalloys)						
Welding materials (structural and hard-facing)	--	W	--	--	6	6
Other alloys	211	1,420	--	--	20	1,650
Mill products made from metal powder ⁴	--	--	--	--	123,000	123,000
Cemented carbides and related products ⁵	--	--	--	--	W	W
Chemical and ceramic uses:						
Pigments	--	--	W	--	--	W
Catalysts	77,300	--	W	--	W	77,300
Other chemicals	--	--	--	--	1,380	1,380
Miscellaneous and unspecified uses:						
Lubricants	--	--	--	--	16,400	16,400
Other	1,090	35,600	75,500	16	16,800	129,000
Grand total	541,000	305,000	75,500	16	285,000	1,210,000
Stocks, April 30, 2004	489,000	173,000	2,720	26,800	858,000	1,550,000

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, metalworking machinery.

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

(Kilograms, contained molybdenum)

Country	2003	2004		Year to date
	January-December	February	March	
Australia	102,000	3,540	--	3,540
Austria	--	33,600	33,600	90,300
Belgium	3,190,000	331,000	93,400	768,000
Brazil	42,600	236	2,420	4,350
Canada	910,000	35,300	20,500	70,700
Chile	368,000	417,000	94,200	829,000
China	82,600	--	--	--
Costa Rica	22,500	8,710	1,840	13,800
India	44,300	--	--	--
Italy	20,300	--	--	--
Japan	2,000,000	73,100	205,000	329,000
Korea, Republic of	61,400	5,970	6,280	18,200
Mexico	3,730,000	157,000	9,370	188,000
Netherlands	10,900,000	185,000	656,000	1,210,000
Sweden	25,700	--	--	--
Taiwan	9,590	7,780	--	8,370
United Kingdom	7,880,000	710,000	553,000	1,850,000
Other	137,000	36,600	50,400	87,900
Total	29,500,000	2,000,000	1,730,000	5,470,000

-- 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		Year to date
	January-December	February	March	
Australia	873	--	273	818
Canada	547,000	43,800	48,200	162,000
Denmark	241	--	--	--
Japan	61	--	--	--
Mexico	43,100	--	1,850	12,100
Netherlands	25,500	--	--	--
Total	617,000	43,800	50,300	175,000

-- 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			March 2004		
	Gross weight	Contained molybdenum	Value (c.i.f.) ² (thousands)	Gross weight	Contained molybdenum	Value (c.i.f.) ² (thousands)
Ore and concentrates roasted	6,310,000	3,960,000	\$41,900	701,000	441,000	\$7,320
Ore and concentrates other	2,870,000	1,230,000	9,580	631,000	323,000	5,230
Molybdenum chemicals:						
Oxides and hydroxides	1,300,000	NA	9,780	62,900	NA	885
Molydates of ammonium	1,620,000	937,000	11,600	152,000	89,400	1,480
Molydates (all others)	324,000	145,000	1,200	105	50	3
Molybdenum orange	987,000	NA	4,440	110,000	NA	513
Ferromolybdenum	5,740,000	3,690,000	38,200	344,000	216,000	3,470
Molybdenum powders	57,000	43,100	2,000	4,920	4,060	251
Molybdenum unwrought	139,000	136,000	1,700	20,300	20,300	344
Molybdenum waste and scrap	461,000	388,000	5,000	25,400	25,400	346
Molybdenum wire	10,600	NA	776	2,590	NA	170
Molybdenum other	79,900	NA	6,420	9,200	NA	921
Total	19,900,000	10,500,000	133,000	2,060,000	1,120,000	20,900

NA Not available.

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

²Cost, insurance, and freight at U.S. ports.

Source: U.S. Census Bureau.