

Mineral Industry Surveys

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MOLYBDENUM IN APRIL 2005

Domestic production of molybdenum in concentrate in April 2005 was about 4% more than that of the previous month and was about 60% more than that of April 2004, according to the U.S. Geological Survey. Producer stocks of molybdenum in concentrate, oxide, and other product forms were about 5,930 metric tons (t) at the beginning of 2005 and 6,180 t at the end of April.

According to Ryan's Notes (2005b), the April monthly average prices for U.S. ferromolybdenum (FeMo) ranged from \$37.333 to \$38.167 per pound of molybdenum content, compared with \$36.000 to \$37.222 in March. European FeMo monthly averages ranged from \$78.111 to \$80.111 per kilogram (kg) of molybdenum content in April as compared with \$78.222 to \$80.889 in March. In April, worldwide molybdenum oxide prices ranged from \$32.278 to \$33.167 per pound versus \$33.444 to \$34.278 in March.

The molybdenum market showed remarkable strength as producers sold most of their production, and prompt sales continued to command a premium. Consumer demand continued strong despite reports about rising stainless steel inventories and softening stainless steel prices. Inadequate roasting and converting capacity continued to limit the amount of material on the ground for nearby consumer business. Molibdenos y Metales S.A. (Molymet) announced that a 5,400-metric-ton-per-year (t/yr) expansion at its FeMo converter in Chile would be completed by mid-year 2005, boosting FeMo capacity there to 13,600 t/yr. An additional 3,400 t/yr of FeMo capacity expansion planned for Molymet's FeMo plant in Belgium was unlikely to take place in 2005. Molymet previously announced expansion of its molybdenum concentrate roasting capacity in Chile by about 18,000 t/yr (40 million pounds) in 2007, with an additional 4,500 t/yr (10 million pounds) expansion in Belgium to follow in 2009 (Ryan's Notes, 2005a).

About half of China's domestic supply of ferromolybdenum was lost to the market in April after authorities stopped production at about 30 companies suspected of tax fraud. The companies in northeastern Liaoning Province produced a combined 1,200 to 1,500 t of FeMo per month, which amounts to about half of the total supply to the domestic market. Export prices had not reacted yet to the news, as the lost production served only the domestic market, but traders expected prices to rise soon (Metal Bulletin, 2005).

Molybdenum production at the restarted Gibraltar Mine in British Columbia was at 80% of plan in February and March of 2005 as commissioning of the molybdenum circuit was underway. The mine produced about 64 t (141,000 pounds) of molybdenum in concentrate in the first quarter of 2005 with sales of about 35 t (78,000 pounds). After 4 months of preproduction mining and mill/plant refurbishment, Gibraltar restarted copper milling operations in October 2004. A \$1.5 million upgrade of the molybdenum circuit began in October, and the circuit was operational at the end of January 2005 (Platts Metals Week, 2005).

Included in this Mineral Industry Surveys are U.S. production and shipments of molybdenum concentrates and materials, U.S. consumption by end use, stocks of molybdenum material in March and April 2005, and trade data for February and March 2005.

References Cited

- Metal Bulletin, 2005, China's domestic FeMo supply halved: Metal Bulletin, no. 8888, April 11, p. 10.
- Platts Metals Week, 2005, Gibraltar moly output at 80%: Platts Metals Week, v. 76, no. 17, April 25, p. 15.
- Ryan's Notes, 2005a, Moly market holds steady: Ryan's Notes, v. 11, no. 16, April 18, p. 3.
- Ryan's Notes, 2005b, [untitled]: Ryan's Notes, v. 11, no. 18, May 2, p. 10.

TABLE 1
U.S. SALIENT MOLYBDENUM CONCENTRATE STATISTICS¹

(Metric tons, contained molybdenum)

	2004		2005		
	January- December ^p	January- April	March	April	January- April
Production	42,100	12,100	4,720	4,900	16,200
Shipments: ²					
Domestic	31,100	9,250	3,060	2,910	10,900
Export	11,100	3,170	1,790	1,320	4,490

^pPreliminary.

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)

	2004		2005		
	January- December ^p	January- April	March ^r	April	January- April
Gross production	66,300	20,500	6,490	6,490	26,200
Internal consumption ²	42,000	12,900	4,170	4,050	16,500
Gross shipments	39,300	12,200	4,260	3,830	16,200

^pPreliminary. ^rRevised.

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	Molybdic oxides	Ferro molyb- denum ²	Ammonium and sodium molybdate	Molyb- denum scrap	Other	Total
2005, March:						
Steel:						
Carbon	16,500	W	--	--	W	16,500
High-strength low-alloy	28,000	22,300	--	--	11,300	61,700
Stainless and heat-resisting	179,000	69,000	--	W	6,510	254,000
Full alloy	191,000 ^r	219,000 ^r	--	--	1,510	411,000 ^r
Tool	60,400	W	--	--	--	60,400
Total	474,000 ^r	310,000 ^r	--	W	19,400	804,000 ^r
Cast irons (gray, malleable, and ductile iron)	W	9,000	--	--	763	9,760
Superalloys	50,600 ^r	W	--	(3)	117,000 ^r	168,000 ^r
Alloys: (other than steels, cast irons, and superalloys)						
Welding materials (structural and hard-facing)	--	W	--	--	6	6
Other alloys	73	2,190	--	--	11	2,270
Mill products made from metal powder ⁴	--	--	--	--	158,000 ^r	158,000 ^r
Cemented carbides and related products ⁵	--	--	--	--	W	W
Chemical and ceramic uses:						
Pigments	--	--	W	--	--	W
Catalysts	77,300	--	W	--	W	77,300
Other chemicals	--	--	--	--	--	--
Miscellaneous and unspecified uses:						
Lubricants	--	--	--	--	10,600	10,600
Other	1,090	31,200	75,400 ^r	1,840	16,800	126,000 ^r
Grand total	603,000 ^r	353,000 ^r	75,400 ^r	1,840	323,000 ^r	1,360,000 ^r
Stocks, March 31, 2005	401,000 ^r	229,000 ^r	2,400 ^r	37,200 ^r	851,000	1,520,000 ^r
2005, April:						
Steel:						
Carbon	13,900	W	--	--	W	13,900
High-strength low-alloy	24,100	21,600	--	--	11,300	57,000
Stainless and heat-resisting	162,000	67,800	--	W	6,510	236,000
Full alloy	173,000	214,000	--	--	1,510	389,000
Tool	61,100	W	--	--	--	61,100
Total	434,000	304,000	--	W	19,400	757,000
Cast irons (gray, malleable, and ductile iron)	W	7,470	--	--	763	8,230
Superalloys	81,400	W	--	(3)	109,000	191,000
Alloys: (other than steels, cast irons, and superalloys)						
Welding materials (structural and hard-facing)	--	W	--	--	6	6
Other alloys	216	3,100	--	--	11	3,330
Mill products made from metal powder ⁴	--	--	--	--	154,000	154,000
Cemented carbides and related products ⁵	--	--	--	--	W	W
Chemical and ceramic uses:						
Pigments	--	--	W	--	--	W
Catalysts	77,300	--	W	--	W	77,300
Other chemicals	--	--	--	--	2,390	2,390
Miscellaneous and unspecified uses:						
Lubricants	--	--	--	--	11,000	11,000
Other	1,090	32,600	75,400	1,840	16,800	128,000
Grand total	593,000	347,000	75,400	1,840	313,000	1,330,000
Stocks, April 30, 2005	411,000	243,000	2,400	69,200	850,000	1,580,000

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

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

²Includes calcium molybdate.

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

⁴Includes ingot, wire, rod, and sheet.

⁵Includes 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	2004		2005		
	January- December	January- March	February	March	January- March
Australia	30,500	3,540	45,200	--	82,200
Austria	1,310,000	90,300	2,590	--	2,590
Belgium	6,470,000	768,000	63,100	237,000	338,000
Brazil	31,000	4,350	2,670	--	4,070
Canada	1,370,000	70,700	178,000	213,000	623,000
Chile	1,380,000	829,000	109,000	--	110,000
China	36,000	--	--	--	57,100
Costa Rica	26,700	13,800	--	1,400	2,620
India	430	--	1,480	33,000	34,400
Italy	--	--	--	--	35,100
Japan	5,730,000	329,000	185,000	123,000	404,000
Korea, Republic of	95,200	18,200	2,730	388	4,420
Mexico	3,910,000	188,000	126,000	105,000	818,000
Netherlands	14,100,000	1,210,000	991,000	3,170,000	5,240,000
Sweden	38,200	--	--	--	--
Taiwan	19,200	8,370	2,820	785	3,600
United Kingdom	8,910,000	1,850,000	839,000	811,000	2,790,000
Other	2,770,000	87,900	6,310	--	8,020
Total	46,200,000	5,470,000	2,550,000	4,700,000	10,600,000

-- 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	2004		2005		
	January- December	January- March	February	March	January- March
Australia	1,090	818	--	--	--
Canada	870,000	162,000	129,000	68,100	400,000
France	10,100	--	--	--	--
Indonesia	381	--	--	--	163
Mexico	33,700	12,100	4,130	408	4,530
Netherlands	--	--	--	--	33,300
Sweden	9,150	--	--	--	--
United Kingdom	491	--	--	--	--
Total	925,000	175,000	133,000	68,500	438,000

-- 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 2004			March 2005			January-March 2005		
	Gross weight	Contained molybdenum	Value ² (thousands)	Gross weight	Contained molybdenum	Value ² (thousands)	Gross weight	Contained molybdenum	Value ² (thousands)
Ore and concentrates roasted	7,580,000	4,710,000	\$133,000	743,000	451,000	\$29,900	2,400,000	1,490,000	\$100,000
Ore and concentrates other	9,330,000	4,070,000	135,000	886,000	429,000	27,100	4,170,000	1,740,000	126,000
Molybdenum chemicals:									
Oxides and hydroxides	822,000	NA	15,800	111,000	NA	3,770	435,000	NA	9,700
Molydates of ammonium	1,940,000	1,330,000	18,400	608,000	445,000	7,110	1,040,000	709,000	11,200
Molydates (all others)	254,000	116,000	1,430	10,400	4,380	86	58,800	15,800	853
Molybdenum orange	1,030,000	NA	4,760	76,700	NA	427	211,000	NA	1,190
Ferromolybdenum	8,310,000	5,310,000	158,000	318,000	196,000	13,800	2,000,000	1,260,000	82,000
Molybdenum powders	139,000	95,200	4,930	6,120	5,720	529	15,900	13,700	1,310
Molybdenum unwrought	151,000	151,000	3,520	5,100	5,660	420	11,600	12,700	900
Molybdenum waste and scrap	454,000	415,000	10,200	39,000	38,700	2,950	160,000	159,000	11,400
Molybdenum wire	20,500	NA	2,010	971	NA	234	6,190	NA	929
Molybdenum other	132,000	NA	13,700	8,490	NA	1,410	48,200	NA	5,530
Total	30,200,000	16,200,000	501,000	2,810,000	1,580,000	87,800	10,600,000	5,400,000	351,000

NA Not available.

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

²Customs value.

Source: U.S. Census Bureau.