

# Mineral Industry Surveys

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## MOLYBDENUM IN MARCH 2004

Domestic production of molybdenum in concentrate in March 2004 was about 26% more than that of the previous month and was about 6% more than that of March 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 4,430 t at the end of March.

According to Ryan's Notes (2004c), the March monthly average prices for U.S. ferromolybdenum ranged from \$9.889 to \$10.444 per pound of molybdenum content, compared with \$8.675 to \$8.875 in February. European ferromolybdenum monthly averages ranged from \$23.861 to \$24.794 per kilogram of molybdenum content in March as compared to \$19.563 to \$20.075 in February. In March, worldwide molybdenum oxide prices ranged from \$9.761 to \$10.194 per pound versus \$7.463 to \$7.650 in February.

Molybdenum prices took a quantum leap upward in Europe the last week in March, as an oxide sale was reported at \$13 per pound. Output by producers appeared to be lagging the market. Phelps Dodge Corporation said its Henderson Mine (CO) continued to produce according to the plan set for the year. Molybdenum shipments from Corporación Nacional del Cobre de Chile (Codelco) in Chile reportedly were delayed because copper shipments received priority. In the month of March, oxide prices jumped over 50% (Ryan's Notes, 2004a).

The bull market was driven by buyers looking for prompt material, which limited the number of suppliers and carried premium prices. This also meant the buyers had to come back

on a regular basis, which kept the market buoyant (Platts Metals Week, 2004).

January 2004 exports from China were low for both ferromolybdenum and molybdenum oxide, but this was not surprising as Chinese exports in December 2003 were the second highest monthly total on record at 5,260 t (11.6 million pounds) compared with 5,800 t (12.8 million pounds) in June 2000. The big jump in exports in December was attributed to Chinese suppliers trying to take advantage of the value-added tax rebates before they were reduced on January 1, 2004. The official list published by the Chinese government in January showed that the rebate for molybdenum oxide was cut to 8% from 13%, but the rebates for ferromolybdenum remained unchanged at 13% (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 February and March 2004; also included are trade data for January and February 2004.

## References Cited

- Platts Metals Week, 2004, No respite for molybdenum consumers: Platts Metals Week, v. 75, no. 13, March 29, p. 6.  
Ryan's Notes, 2004a, Moly oxide heading toward \$13: Ryan's Notes, v. 10, no. 13, March 29, p. 1.  
Ryan's Notes, 2004b, Moly oxide jumps above \$8: Ryan's Notes, v. 10, no. 10, March 8, p. 2.  
Ryan's Notes, 2004c, [untitled]: Ryan's Notes, v. 10, no. 14, April 5, p. 4.

TABLE 1  
U.S. SALIENT MOLYBDENUM CONCENTRATE STATISTICS<sup>1</sup>

(Metric tons, contained molybdenum)

	2003	2004		Year to date
	January-December <sup>r, p</sup>	February	March	
Production	34,400	2,500	3,160	9,030
Shipments: <sup>2</sup>				
Domestic	26,800	1,990	2,640	6,820
Export	7,750	427	492	2,180

<sup>p</sup>Preliminary. <sup>r</sup>Revised.

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

<sup>2</sup>As reported by producers.

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

(Metric tons, contained molybdenum)

	2003	2004		Year to date
	January-December <sup>p</sup>	February	March	
Gross production	41,400	4,940	4,970	15,900
Internal consumption <sup>2</sup>	29,600	2,930	3,190	9,910
Gross shipments	30,100 <sup>r</sup>	2,830	3,560	8,910

<sup>p</sup>Preliminary. <sup>r</sup>Revised.

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

<sup>2</sup>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<sup>1</sup>

(Kilograms, contained molybdenum)

End use	Molybdic oxides	Ferro molybdenum <sup>2</sup>	Ammonium and sodium molybdate	Molybdenum scrap	Other	Total
2004, February:						
Steel:						
Carbon	11,100	W	--	--	W	11,100
High-strength low-alloy	34,500	12,300	--	--	W	46,800
Stainless and heat-resisting	214,000 <sup>r</sup>	39,900 <sup>r</sup>	--	W	6,780 <sup>r</sup>	261,000 <sup>r</sup>
Full alloy	98,700 <sup>r</sup>	181,000 <sup>r</sup>	--	--	1,510 <sup>r</sup>	281,000 <sup>r</sup>
Tool	42,100 <sup>r</sup>	W	--	--	-- <sup>r</sup>	42,100 <sup>r</sup>
Total	400,000 <sup>r</sup>	233,000 <sup>r</sup>	--	W	8,290 <sup>r</sup>	642,000
Cast irons (gray, malleable, and ductile iron)	W	9,020 <sup>r</sup>	--	--	763	9,780 <sup>r</sup>
Superalloys	73,700 <sup>r</sup>	W	--	(3)	83,400 <sup>r</sup>	157,000 <sup>r</sup>
Alloys: (other than steels, cast irons, and superalloys)						
Welding materials (structural and hard-facing)	--	W	--	--	6	6
Other alloys	315	2,370	--	--	20 <sup>r</sup>	2,700 <sup>r</sup>
Mill products made from metal powder <sup>4</sup>	--	--	--	--	99,200 <sup>r</sup>	99,200 <sup>r</sup>
Cemented carbides and related products <sup>5</sup>	--	--	--	--	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	--	--	--	--	16,100 <sup>r</sup>	16,100 <sup>r</sup>
Other	1,090	31,300 <sup>r</sup>	76,900	16 <sup>r</sup>	28,100 <sup>r</sup>	137,000 <sup>r</sup>
Grand total	553,000 <sup>r</sup>	276,000 <sup>r</sup>	76,900	16 <sup>r</sup>	237,000 <sup>r</sup>	1,140,000 <sup>r</sup>
Stocks, February 29, 2004	483,000 <sup>r</sup>	169,000 <sup>r</sup>	3,670	17,700	852,000 <sup>r</sup>	1,530,000 <sup>r</sup>
2004, March:						
Steel:						
Carbon	11,800	W	--	--	W	11,800
High-strength low-alloy	33,600	8,630	--	--	11,300	53,600
Stainless and heat-resisting	213,000	41,100	--	W	6,780	261,000
Full alloy	107,000	181,000	--	--	1,510	290,000
Tool	56,800	W	--	--	--	56,800
Total	423,000	231,000	--	W	19,600	673,000
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 <sup>4</sup>	--	--	--	--	104,000	104,000
Cemented carbides and related products <sup>5</sup>	--	--	--	--	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	--	--	--	--	15,200	15,200
Other	1,090	34,300	77,000	16	16,800	129,000
Grand total	559,000	279,000	77,000	16	278,000	1,190,000
Stocks, March 31, 2004	363,000	183,000	2,810	11,200	858,000	1,420,000

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

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

<sup>2</sup>Includes calcium molybdate.

<sup>3</sup>Included in "Other" of the "Superalloys" category.

<sup>4</sup>Includes ingot, wire, rod, and sheet.

<sup>5</sup>Includes construction, mining, oil and gas, metalworking machinery.

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

(Kilograms, contained molybdenum)

Country	2003	2004		Year to date
	January-December	January	February	
Australia	102,000	--	3,540	3,540
Austria	--	23,100	33,600	56,700
Belgium	3,190,000	344,000	331,000	675,000
Brazil	42,600	1,700	236	1,930
Canada	910,000	14,900	35,300	50,200
Chile	368,000	318,000	417,000	734,000
China	82,600	--	--	--
Costa Rica	22,500	3,280	8,710	12,000
India	44,300	--	--	--
Italy	20,300	--	--	--
Japan	2,000,000	51,000	73,100	124,000
Korea, Republic of	61,400	5,960	5,970	11,900
Mexico	3,730,000	21,700	157,000	179,000
Netherlands	10,900,000	373,000	185,000	558,000
Sweden	25,700	--	--	--
Taiwan	9,590	590	7,780	8,370
United Kingdom	7,880,000	584,000	710,000	1,290,000
Other	137,000	885	36,600	37,500
Total	29,500,000	1,740,000	2,000,000	3,750,000

-- Zero.

<sup>1</sup>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<sup>1</sup>

(Kilograms, contained molybdenum)

Country	2003	2004		Year to date
	January-December	January	February	
Australia	873	545	--	545
Canada	547,000	70,000	43,800	114,000
Denmark	241	--	--	--
Japan	61	--	--	--
Mexico	43,100	10,300	--	10,300
Netherlands	25,500	--	--	--
Total	617,000	80,800	43,800	125,000

-- Zero.

<sup>1</sup>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<sup>1</sup>

(Kilograms, unless otherwise specified)

Material	January-December 2003			February 2004		
	Gross weight	Contained molybdenum	Value (c.i.f.) <sup>2</sup> (thousands)	Gross weight	Contained molybdenum	Value (c.i.f.) <sup>2</sup> (thousands)
Ore and concentrates roasted	6,310,000	3,960,000	\$41,900	476,000	295,000	\$4,800
Ore and concentrates other	2,870,000	1,230,000	9,580	8,140	820	12
Molybdenum chemicals:						
Oxides and hydroxides	1,300,000	NA	9,780	35,300	NA	347
Molydates of ammonium	1,620,000	937,000	11,600	23,000	12,900	257
Molydates (all others)	324,000	145,000	1,200	NA	NA	NA
Molybdenum orange	987,000	NA	4,440	119,000	NA	540
Ferromolybdenum	5,740,000	3,690,000	38,200	729,000	451,000	7,430
Molybdenum powders	57,000	43,100	2,000	3,500	3,310	191
Molybdenum unwrought	139,000	136,000	1,700	32,000	32,200	590
Molybdenum waste and scrap	461,000	388,000	5,000	35,900	35,700	603
Molybdenum wrought	7,580	NA	1,350	1,290	NA	215
Molybdenum wire	10,600	NA	776	1,320	NA	141
Molybdenum other	72,400	NA	5,070	6,750	NA	451
Total	19,900,000	10,500,000	133,000	1,470,000	831,000	15,600

NA Not available.

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

<sup>2</sup>Cost, insurance, and freight at U.S. ports.

Source: U.S. Census Bureau.