

Mineral Industry Surveys

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MOLYBDENUM IN AUGUST 2004

Domestic production of molybdenum in concentrate in August 2004 was about 33% more than that of the previous month and was about 33% more than that of August 2003, according to the U.S. Geological Survey. Year-to-date production of molybdenum in concentrate from January through August was 25% more than during the same period in 2003. Producer stocks of molybdenum in concentrate, oxide, and other product forms were about 4,730 metric tons (t) at the beginning of 2004, and 5,353 t at the end of August.

According to Ryan's Notes (2004b), the August monthly average prices for U.S. ferromolybdenum (FeMo) ranged from \$19.389 to \$21.333 per pound of molybdenum content, compared with \$16.289 to \$17.556 in July. European FeMo monthly averages ranged from \$45.444 to \$47.333 per kilogram of molybdenum content in August as compared with \$37.111 to \$38.667 in July. In August, worldwide molybdenum oxide prices ranged from \$17.244 to \$17.933 per pound versus \$14.567 to \$15.411 in July.

Relying on years of experience, molybdenum sellers have consistently underestimated the strength of the market in 2004 (Ryan's Notes, 2004a). At the beginning of August, traders reported molybdenum oxide at \$15.50 per pound, but by the last week of August, sales were reported at \$17.50-\$18.20 per pound. Similarly, reported ferromolybdenum sales rose from \$38-\$39 per kilogram in the first week of August to close to \$50 per kilogram by the last week in August. Buyers and sellers assumed that prices could not be sustained, but the market failed to soften significantly.

Golden Phoenix Minerals, Inc. announced it could begin producing molybdenum by December 2004 at its Ashdown project in Nevada. A drill program was scheduled to begin in mid-August to confirm past evaluations by other operators that identified a 132,000-t resource averaging 2.9% molybdenum,

and a separate 1.1-million-metric-ton gold resource averaging about 0.125 troy ounce per metric ton. Permit applications for a 90-metric-ton-per-day (t/d) pilot test mill and a larger 680-t/d production mill would be submitted by the end of August. Golden Phoenix acquired a pilot test mill and was to deliver and commission the mill within 45 days upon receiving permits to operate. Ultimately, the company planned to expand toward an open pit and full underground mining operation (Platts Metals Week, 2004b).

Compania Minera Dona Ines de Collahuasi, one of Chile's largest copper producers, announced plans to start byproduct molybdenum production at its Collahuasi Mine. The company was to invest \$40 million in the project with an expected output of 7,300 metric tons per year of molybdenum in concentrate. Construction was planned to begin by the end of 2004, with production start-up following in late 2005 or early 2006. The company expected a significant increase in molybdenum content at its Collahuasi Mine, which would be reflected in higher molybdenum content in the copper concentrate (Platts Metals Week, 2004a).

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 July and August 2004, and trade data for June and July 2004.

References Cited

- Platts Metals Week, 2004a, Collahuasi plans 7,300 mt/yr moly output: Platts Metals Week, v. 75, no. 35, August 30, p. 10.
Platts Metals Week, 2004b, Golden Phoenix eyes end-2004 startup of moly production: Platts Metals Week, v. 75, no. 34, August 23, p. 5.
Ryan's Notes, 2004a, Moly market revives again: Ryan's Notes, v. 10, no. 31, August 2, p. 3.
Ryan's Notes, 2004b, [untitled]: Ryan's Notes, v. 10, no. 36, September 6, p. 4.

TABLE 1
U.S. SALIENT MOLYBDENUM CONCENTRATE STATISTICS¹

(Metric tons, contained molybdenum)

	2003	2004		Year to date
	January-December ^p	July	August	
Production	34,400	3,270	4,350	26,800
Shipments: ²				
Domestic	26,800	2,540	2,600	19,800
Export	7,750	747	1,080	6,710

^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)

	2003	2004		Year to date
	January-December ^p	July	August	
Gross production	41,400	3,960	5,790	40,500
Internal consumption ²	29,600	2,460 ^r	3,540	25,500
Gross shipments	30,100	2,980	3,680	25,100

^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	Molybdc oxides	Ferro molyb- denum ²	Ammonium and sodium molybdate	Molyb- denum scrap	Other	Total
2004, July:						
Steel:						
Carbon	21,700	W	--	--	W	21,700
High-strength low-alloy	36,400	9,150	--	--	11,300	56,900
Stainless and heat-resisting	221,000	66,300	--	W	6,780	295,000
Full alloy	134,000	203,000 ^r	--	--	1,510	339,000
Tool	51,200	W	--	--	--	51,200
Total	465,000 ^r	279,000	--	W	19,600	763,000
Cast irons (gray, malleable, and ductile iron)	W	10,100	--	--	763	10,800
Superalloys	75,300	W	--	(3)	99,600	175,000
Alloys: (other than steels, cast irons, and superalloys)						
Welding materials (structural and hard-facing)	--	W	--	--	6	6
Other alloys	237	2,150	--	--	20	2,410
Mill products made from metal powder ⁴	--	--	--	--	125,000	125,000
Cemented carbides and related products ⁵	--	--	--	--	W	W
Chemical and ceramic uses:						
Pigments	--	--	W	--	--	W
Catalysts	77,300	--	W	--	W	77,300
Other chemicals	--	--	--	--	2,320	2,320
Miscellaneous and unspecified uses:						
Lubricants	--	--	--	--	13,600 ^r	13,600 ^r
Other	1,090	36,200	75,900	16	16,800	130,000
Grand total	619,000 ^r	327,000	75,900	16	278,000 ^r	1,300,000
Stocks, July 31, 2004	420,000 ^r	222,000 ^r	5,460	24,700	850,000 ^r	1,520,000
2004, August:						
Steel:						
Carbon	18,000	W	--	--	W	18,000
High-strength low-alloy	30,500	13,800	--	--	11,300	55,600
Stainless and heat-resisting	226,000	70,700	--	W	6,780	303,000
Full alloy	132,000	128,000	--	--	1,510	261,000
Tool	57,900	W	--	--	--	57,900
Total	464,000	213,000	--	W	19,600	696,000
Cast irons (gray, malleable, and ductile iron)	W	8,650	--	--	763	9,410
Superalloys	58,000	W	--	(3)	107,000	165,000
Alloys: (other than steels, cast irons, and superalloys)						
Welding materials (structural and hard-facing)	--	W	--	--	6	6
Other alloys	193	3,240	--	--	20	3,460
Mill products made from metal powder ⁴	--	--	--	--	127,000	127,000
Cemented carbides and related products ⁵	--	--	--	--	W	W
Chemical and ceramic uses:						
Pigments	--	--	W	--	--	W
Catalysts	77,300	--	W	--	W	77,300
Other chemicals	--	--	--	--	1,320	1,320
Miscellaneous and unspecified uses:						
Lubricants	--	--	--	--	15,300	15,300
Other	1,090	33,900	74,600	16	16,800	126,000
Grand total	600,000	258,000	74,600	16	288,000	1,220,000
Stocks, August 31, 2004	403,000	242,000	3,060	27,200	847,000	1,520,000

^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	2003	2004		
	January- December	June	July	Year to date
Australia	102,000	7,930	--	19,000
Austria	--	152,000	267,000	688,000
Belgium	3,190,000	358,000	811,000	3,450,000
Brazil	42,600	--	590	11,900
Canada	910,000	147,000	122,000	728,000
Chile	368,000	138,000	312,000	1,380,000
China	82,600	--	36,000	36,000
Costa Rica	22,500	7,480	--	21,300
India	44,300	--	--	--
Italy	20,300	--	--	--
Japan	2,000,000	945,000	1,460,000	3,140,000
Korea, Republic of	61,400	649	25,200	76,400
Mexico	3,730,000	466,000	242,000	1,230,000
Netherlands	10,900,000	2,730,000	2,200,000	7,880,000
Sweden	25,700	--	--	--
Taiwan	9,590	2,270	590	11,700
United Kingdom	7,880,000	1,110,000	495,000	4,690,000
Other	137,000	136,000	449,000	1,390,000
Total	29,500,000	6,190,000	6,430,000	24,800,000

-- 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	June	July	Year to date
Australia	873	273	--	1,090
Canada	547,000	92,100	99,700	619,000
Denmark	241	--	--	--
Japan	61	--	--	--
Mexico	43,100	5,170	13,800	33,100
Netherlands	25,500	--	--	--
United Kingdom	--	--	--	491
Total	617,000	97,500	113,000	654,000

-- 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			July 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	538,000	335,000	\$10,200
Ore and concentrates other	2,870,000	1,230,000	9,580	1,170,000	507,000	12,700
Molybdenum chemicals:						
Oxides and hydroxides	1,300,000	NA	9,780	72,400	NA	1,420
Molydates of ammonium	1,620,000	937,000	11,600	142,000	110,000	1,420
Molydates (all others)	324,000	145,000	1,200	36,100	30,000	264
Molybdenum orange	987,000	NA	4,440	70,900	NA	315
Ferromolybdenum	5,740,000	3,690,000	38,200	866,000	546,000	16,200
Molybdenum powders	57,000	43,100	2,000	14,900	9,840	588
Molybdenum unwrought	139,000	136,000	1,700	11,100	11,000	273
Molybdenum waste and scrap	425,000	388,000	5,000	55,300	51,800	1,110
Molybdenum wire	10,600	NA	776	1,300	NA	151
Molybdenum other	79,900	NA	6,420	7,630	NA	1,090
Total	19,900,000	10,500,000	133,000	2,980,000	1,600,000	45,800

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.