

Mineral Industry Surveys

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MOLYBDENUM IN APRIL 2009

Domestic production of molybdenum (Mo) in concentrate in April 2009 was 24% more than the output of the previous month and about 19% less than that of April 2008, according to the U.S. Geological Survey. Producer stocks of molybdenum in concentrate, oxide, and other product forms were about 5,610 metric tons (t) at the beginning of 2009 and about 7,860 t at the end of April.

According to Ryan's Notes (2009), the April monthly average price range for U.S. ferromolybdenum (FeMo) was \$8.806 to \$8.938 per pound (lb) of molybdenum content, compared with \$9.178 to \$9.556 per lb in March. European FeMo monthly averages ranged from \$19.531 to \$20.113 per kilogram (kg) of molybdenum content in April compared with \$20.650 to \$21.061 per kg in March. In April, worldwide molybdenum oxide (MoO₃) prices ranged from \$7.800 to \$8.106 per lb compared with \$8.372 to \$8.622 per lb in March.

Corporación Nacional del Cobre de Chile (Codelco) announced that revenues from molybdenum sales would be

down as much as 75% in 2009 compared with those of 2008. The company announced that molybdenum production decreased by 30% in 2009 to 5,000 t, from 7,000 t in 2008. Plans for a \$1 billion re-capitalization project as part of the \$4 billion Chilean Government stimulus package as well as major changes to state-controlled Codelco's management structure have been recommended (Metal-Pages Ltd., 2009).

Included in this Mineral Industry Surveys are U.S. production and shipments of molybdenum concentrates and materials, U.S. consumption by end use, and consumer stocks of molybdenum material in March and April 2009. Export data for February and March 2009 and import data for March 2009 are also included.

References Cited

- Metal-Pages Ltd., 2009, Codelco molybdenum revenues to fall 75% in 2009: Metal-Pages Ltd., April 30. (Accessed October 23, 2009 via <http://www.metal-pages.com/>.)
Ryan's Notes, 2009, [untitled]: Ryan's Notes, v. 15, no. 17, April 27, p. 10.

TABLE 1
U.S. SALIENT MOLYBDENUM CONCENTRATE STATISTICS¹

(Metric tons, contained molybdenum)

	2008		2009		
	January- December	January- April	March	April	January- April
Production	55,700 ^r	19,700	3,230 ^r	4,010	14,200
Shipments: ²					
Domestic	41,000 ^r	15,100	1,480 ^r	1,830	7,050
Export	12,900	4,690	828	1,250	3,670

^rRevised.

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

²As reported by producers.

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

(Metric tons, contained molybdenum)

	2008		2009		
	January- December	January- April	March	April	January- April
Gross production	72,800	24,700	4,420	5,020	19,100
Internal consumption ²	39,400	14,000	1,680	2,410	8,320
Gross shipments	51,200	17,700	3,100	3,060	12,800

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

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 ^r	Other	Total
2009, March:						
Steel:						
Carbon	30,800 ^r	W	--	--	W	30,800 ^r
High-strength low-alloy	41,200 ^r	8,000 ^r	--	--	11,300	60,500 ^r
Stainless and heat-resisting	162,000 ^r	63,000	--	W	6,510	232,000 ^r
Full alloy	241,000 ^r	230,000 ^r	--	--	1,510	472,000 ^r
Tool	W	W	--	--	--	W
Total	475,000 ^r	301,000 ^r	--	W	19,400	795,000 ^r
Cast irons (gray, malleable, and ductile iron)	W	22,200 ^r	--	--	763	23,000 ^r
Superalloys	53,100 ^r	W	--	W	70,100 ^r	123,000 ^r
Alloys: (other than steels, cast irons, and superalloys)						
Welding materials (structural and hard-facing)	--	W	--	--	6	6
Other alloys	W	2,650	--	--	--	2,650
Mill products made from metal powder ^{3,r}	6,660	--	--	--	174,000	181,000
Cemented carbides and related products ⁴	--	--	--	--	W	W
Chemical and ceramic uses:						
Pigments	--	--	W	--	--	W
Catalysts	77,300	--	W	--	W	77,300
Other chemicals	--	--	--	--	247	247
Miscellaneous and unspecified uses:						
Lubricants	--	--	--	--	10,800	10,800
Other	66,800 ^r	26,700 ^r	72,600	66,900 ^r	16,800	250,000 ^r
Grand total	678,000 ^r	352,000 ^r	72,600	66,900 ^r	292,000 ^r	1,460,000 ^r
Stocks, March 31, 2009	340,000 ^r	312,000 ^r	2,150	151,000 ^r	850,000 ^r	1,660,000 ^r
2009, April:						
Steel:						
Carbon	30,400	W	--	--	W	30,400
High-strength low-alloy	41,200	8,000	--	--	11,300	60,500
Stainless and heat-resisting	168,000	64,000	--	W	6,510	239,000
Full alloy	242,000	209,000	--	--	1,510	453,000
Tool	W	W	--	--	--	W
Total	482,000	281,000	--	W	19,400	782,000
Cast irons (gray, malleable, and ductile iron)	W	22,200	--	--	763	23,000
Superalloys	31,300	W	--	W	68,600	99,900
Alloys: (other than steels, cast irons, and superalloys)						
Welding materials (structural and hard-facing)	--	W	--	--	6	6
Other alloys	W	2,420	--	--	--	2,420
Mill products made from metal powder ³	6,660	--	--	--	182,000	189,000
Cemented carbides and related products ⁴	--	--	--	--	W	W
Chemical and ceramic uses:						
Pigments	--	--	W	--	--	W
Catalysts	77,300	--	W	--	W	77,300
Other chemicals	--	--	--	--	83	83
Miscellaneous and unspecified uses:						
Lubricants	--	--	--	--	10,800	10,800
Other	66,800	27,500	72,600	47,400	16,800	231,000
Grand total	664,000	333,000	72,600	47,400	299,000	1,420,000
Stocks, April 30, 2009	317,000	311,000	2,150	130,000	850,000	1,610,000

^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.

³Includes ingot, wire, rod, and sheet.

⁴Includes 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	2008			2009		
	January- December	March	January- March	February	March	January- March
Argentina	210,000	38,000	50,700	--	--	--
Belgium	6,910,000	699,000	2,390,000	538,000	234,000	932,000
Brazil	9,700	--	--	--	--	--
Canada	2,030,000	285,000	785,000	79,300	77,100	226,000
Chile	316,000	--	--	--	59,400	59,400
China	365,000	--	--	363,000	207,000	571,000
India	32,700	11,400	11,400	--	30,000	33,200
Italy	12,000	--	12,000	--	--	--
Japan	2,220,000	119,000	507,000	35,600	64,600	149,000
Korea, Republic of	694,000	51,600	159,000	32,600	32,100	96,500
Mexico	4,470,000	343,000	1,190,000	480,000	273,000	1,000,000
Netherlands	9,960,000	729,000	2,160,000	554,000	546,000	1,770,000
Niger	17,400	--	--	--	--	--
South Africa	11,400	--	--	--	--	--
United Kingdom	5,080,000	442,000	1,220,000	345,000	259,000	750,000
Vietnam	341,000	754	3,300	--	2,010	14,300
Other ²	35,000	20,000	33,800	459	236	995
Total	32,700,000	2,740,000	8,520,000	2,430,000	1,780,000	5,600,000

-- Zero.

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

²Includes countries with year-to-date or full year quantities of less than 1,000 kilograms.

Source: U.S. Census Bureau.

TABLE 5
U.S. EXPORTS OF FERROMOLYBDENUM, BY COUNTRY¹

(Kilograms, contained molybdenum)

Country	2008			2009		
	January- December	March	January- March	February	March	January- March
Argentina	--	--	--	1,400	--	1,400
Australia	174	--	--	--	--	--
Belgium	--	--	--	--	--	13,500
Canada	933,000	80,700	279,000	16,900	29,900	79,300
Colombia	1,090	--	--	--	--	551
Denmark	454	--	--	--	--	--
India	1,150	143	283	--	--	--
Israel	--	--	--	--	95	95
Korea, Republic of	14,000	--	--	--	--	--
Mexico	58,600	--	13,000	713	250	6,120
Netherlands	280,000	--	98,200	--	--	--
Peru	--	--	--	3,180	--	3,180
Philippines	700	--	--	--	--	--
South Africa	68	--	--	--	--	--
United Arab Emirates	--	--	--	--	--	3,260
Total	1,290,000	80,800	390,000	22,200	30,300	107,000

-- 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 2008			March 2009			January-March 2009		
	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	9,950,000	6,060,000	\$249,000	616,000	371,000	\$5,280	1,610,000	1,000,000	\$15,400
Ore and concentrates other	9,140,000	4,170,000	263,000	543,000	254,000	4,490	2,610,000	1,160,000	23,400
Molybdenum chemicals:									
Oxides and hydroxides	335,000	NA	12,900	41,200	NA	522	145,000	NA	2,190
Molybdates of ammonium	360,000	203,000	14,100	67,500	37,800	1,480	131,000	73,100	2,360
Molybdates (all others)	91,600	31,500	1,180	2,200	872	146	5,920	2,870	330
Molybdenum orange	373,000	NA	3,110	7,140	NA	63	41,500	NA	329
Ferromolybdenum	3,460,000	2,320,000	166,000	322,000	213,000	4,340	1,660,000	1,100,000	23,600
Molybdenum powders	76,000	64,100	7,070	893	190	24	6,480	2,950	618
Molybdenum unwrought	256,000	255,000	15,800	--	--	--	3,570	3,540	161
Molybdenum waste and scrap	588,000	546,000	30,900	41,900	41,500	1,210	149,000	147,000	4,870
Molybdenum wire	19,800	NA	3,060	2,030	NA	196	5,160	NA	585
Molybdenum other	483,000	NA	48,700	49,200	NA	2,250	67,500	NA	4,710
Total	25,100,000	XX	814,000	XX	XX	XX	6,440,000	XX	78,500

NA Not available. XX Not applicable. -- Zero.

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

²Customs value.

Source: U.S. Census Bureau.