

# Mineral Industry Surveys

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## MOLYBDENUM IN APRIL 2008

Domestic production of molybdenum (Mo) in concentrate in April 2008 was slightly less than the output of the previous month and about 8% more than that of April 2007, according to the U.S. Geological Survey. Producer stocks of molybdenum in concentrate, oxide, and other product forms were about 5,770 metric tons (t) at the beginning of 2008 and about 8,650 t at the end of April.

According to Ryan's Notes (2008b), the April monthly average price range for U.S. ferromolybdenum (FeMo) was \$36.500 to \$36.750 per pound (lb) of molybdenum content, compared with \$36.500 to \$36.844 per lb in March. European FeMo monthly averages ranged from \$77.344 to \$78.133 per kilogram (kg) of molybdenum content in April compared with \$79.000 to \$80.000 per kg in March. In April, worldwide molybdenum oxide (MoO<sub>3</sub>) prices ranged from \$32.756 to \$33.250 per lb compared with \$33.488 to \$34.063 per lb in March.

Roca Mines Inc. reported that it had begun commercial production of molybdenum in concentrate at its MAX Molybdenum Mine near Revelstoke, British Columbia. Startup operations produced approximately 410,000 lb (185 t) of contained molybdenum in concentrate. A second phase of expansion, anticipated to be completed by the fall of 2008, included acquisition of a third primary ball mill (Ryan's Notes, 2008a).

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 2008. Export data for February and March 2008 and import data for March 2008 are also included.

### References Cited

Ryan's Notes, 2008a, Moly market stability continues, Ryan's Notes, v. 14, no. 16, April 21, p. 5.  
Ryan's Notes, 2008b, [untitled]: Ryan's Notes, v. 14, no. 18, May 5, p. 10.

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

(Metric tons, contained molybdenum)

	2007		2008		
	January- December	January- April	March	April	January- April
Production	57,000	20,000 <sup>r</sup>	5,050	4,970	19,700
Shipments: <sup>2</sup>					
Domestic	40,600	14,200 <sup>r</sup>	3,840	4,230	15,100
Export	16,400	6,010	1,170	732	4,690

<sup>r</sup>Revised.

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

<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)

	2007		2008		
	January- December	January- April <sup>r</sup>	March	April	January- April
Gross production	72,800	25,600	6,100	6,180	24,700
Internal consumption <sup>2</sup>	41,700	15,300	3,450	3,750	14,000
Gross shipments	48,700	17,000	4,320	4,410	17,700

<sup>r</sup>Revised.

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

<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	Molybdc oxides	Ferro molyb- denum <sup>2</sup>	Ammonium and sodium molybdate	Molyb- denum scrap	Other	Total
2008, March:						
Steel:						
Carbon	37,000	W	--	--	W	37,000
High-strength low-alloy	61,800	9,150	--	--	11,300	82,300
Stainless and heat-resisting	178,000	65,300	--	W	6,510	250,000
Full alloy	245,000	311,000	--	--	1,510	557,000
Tool	W	W	--	--	--	W
Total	522,000	385,000	--	W	19,400	926,000
Cast irons (gray, malleable, and ductile iron)	W	20,700	--	--	763	21,500
Superalloys	66,300	W	--	W	75,500	142,000
Alloys: (other than steels, cast irons, and superalloys)						
Welding materials (structural and hard-facing)	--	W	--	--	6	6
Other alloys	W	9,020	--	--	--	9,020
Mill products made from metal powder <sup>3</sup>	--	--	--	--	180,000	180,000
Cemented carbides and related products <sup>4</sup>	--	--	--	--	W	W
Chemical and ceramic uses:						
Pigments	--	--	W	--	--	W
Catalysts	77,300	--	W	--	W	77,300
Other chemicals	--	--	--	--	585	585
Miscellaneous and unspecified uses:						
Lubricants	--	--	--	--	10,800	10,800
Other	16,600	30,700	72,700	41,300	16,800	178,000
Grand total	682,000	446,000	72,700	41,300	303,000	1,540,000
Stocks, March 31, 2008	302,000	297,000	4,140	13,300	849,000	1,470,000
2008, April:						
Steel:						
Carbon	30,100	W	--	--	W	30,100
High-strength low-alloy	69,900	8,220	--	--	11,300	89,500
Stainless and heat-resisting	182,000	66,000	--	W	6,510	254,000
Full alloy	253,000	183,000	--	--	1,510	438,000
Tool	W	W	--	--	--	W
Total	535,000	258,000	--	W	19,400	812,000
Cast irons (gray, malleable, and ductile iron)	W	20,700	--	--	763	21,500
Superalloys	62,100	W	--	W	78,100	140,000
Alloys: (other than steels, cast irons, and superalloys)						
Welding materials (structural and hard-facing)	--	W	--	--	6	6
Other alloys	W	9,100	--	--	--	9,100
Mill products made from metal powder <sup>3</sup>	--	--	--	--	210,000	210,000
Cemented carbides and related products <sup>4</sup>	--	--	--	--	W	W
Chemical and ceramic uses:						
Pigments	--	--	W	--	--	W
Catalysts	77,300	--	W	--	W	77,300
Other chemicals	--	--	--	--	804	804
Miscellaneous and unspecified uses:						
Lubricants	--	--	--	--	10,800	10,800
Other	16,800	27,600	72,800	58,400	16,800	192,000
Grand total	691,000	315,000	72,800	58,400	337,000	1,470,000
Stocks, April 30, 2008	292,000	309,000	4,120	29,000	864,000	1,500,000

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>Includes ingot, wire, rod, and sheet.

<sup>4</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	2007			2008		
	January- December	March	January- March	February	March	January- March
Argentina	--	--	--	--	38,000	50,700
Belgium	6,730,000	505,000	1,240,000	779,000	699,000	2,390,000
Brazil	119,000	53,900	90,800	--	--	--
Canada	2,580,000	361,000	816,000	116,000	285,000	785,000
Chile	1,270,000	522,000	522,000	--	--	--
China	71,500	11,800	47,800	--	--	--
Finland	38,000	--	--	--	--	--
India	119,000	--	11,800	--	11,400	11,400
Italy	19,000	--	--	--	--	12,000
Japan	2,230,000	131,000	405,000	116,000	119,000	507,000
Korea, Republic of	232,000	--	24,700	86,100	51,600	159,000
Mexico	4,760,000	373,000	1,210,000	423,000	343,000	1,190,000
Netherlands	9,660,000	571,000	3,700,000	573,000	729,000	2,160,000
Pakistan	75,600	--	38,800	--	--	--
Switzerland	1,630	--	--	--	--	--
Taiwan	17,900	--	413	--	--	--
Thailand	9,620	--	9,620	--	--	--
United Kingdom	5,800,000	272,000	1,220,000	495,000	442,000	1,220,000
Vietnam	4,990	1,510	3,650	2,540	754	3,300
Other	80,800	1,090	2,540	10,500	20,000	33,800
Total	33,800,000	2,800,000	9,350,000	2,600,000	2,740,000	8,520,000

-- 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	2007			2008		
	January- December	March	January- March	February	March	January- March
Australia	25,000	--	--	--	--	--
Canada	838,000	67,500	191,000	110,000	80,700	279,000
Denmark	394	--	--	--	--	--
India	1,090	--	--	--	143	283
Mexico	23,700	--	762	420	--	13,000
Netherlands	145,000	97,500	97,500	98,200	--	98,200
Philippines	735	--	--	--	--	--
Saudi Arabia	149,000	30,200	30,200	--	--	--
South Africa	13,500	--	--	--	--	--
United Kingdom	24,900	24,900	24,900	--	--	--
Total	1,220,000	220,000	345,000	209,000	80,800	390,000

-- 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 2007			March 2008			January-March 2008		
	Gross weight	Contained molybdenum	Value <sup>2</sup> (thousands)	Gross weight	Contained molybdenum	Value <sup>2</sup> (thousands)	Gross weight	Contained molybdenum	Value <sup>2</sup> (thousands)
Ore and concentrates roasted	8,680,000	5,430,000	\$181,000	834,000	519,000	\$17,600	2,510,000	1,570,000	\$54,100
Ore and concentrates other	15,000,000	6,960,000	372,000	1,290,000	657,000	44,200	3,940,000	1,830,000	117,000
Molybdenum chemicals:									
Oxides and hydroxides	211,000	NA	8,020	21,100	NA	1,010	62,500	NA	2,530
Molybdates of ammonium	915,000	515,000	30,400	20,000	11,300	786	165,000	92,800	6,020
Molybdates (all others)	179,000	51,400	2,190	15,900	5,890	164	33,900	12,300	370
Molybdenum orange	600,000	NA	4,040	37,400	NA	267	129,000	NA	992
Ferromolybdenum	6,360,000	4,100,000	270,000	245,000	163,000	12,100	1,190,000	792,000	56,700
Molybdenum powders	72,900	60,800	4,990	300	287	28	18,800	16,400	1,350
Molybdenum unwrought	117,000	117,000	7,460	25,000	25,000	1,580	40,400	40,200	2,590
Molybdenum waste and scrap	574,000	554,000	34,800	37,700	37,300	2,160	188,000	176,000	10,900
Molybdenum wire	17,900	NA	2,740	897	NA	95	3,970	NA	630
Molybdenum other	164,000	NA	20,900	43,100	NA	4,350	80,100	NA	9,290
Total	32,900,000	XX	938,000	2,570,000	XX	84,300	8,360,000	XX	262,000

NA Not available. XX Not applicable.

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

<sup>2</sup>Customs value.

Source: U.S. Census Bureau.