

# Mineral Industry Surveys

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## MOLYBDENUM IN MARCH 2008

Domestic production of molybdenum (Mo) in concentrate in March 2008 was slightly more than the output of the previous month and 4% less than that of March 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 5,540 t at the end of March.

According to Ryan's Notes (2008), the March 2008 monthly average price range for U.S. ferromolybdenum (FeMo) was \$36.500 to \$36.844 per pound (lb) of molybdenum content, compared with \$36.250 to \$36.667 per lb in February 2008. European FeMo monthly averages ranged from \$79.000 to \$80.000 per kilogram (kg) of molybdenum content in March compared with \$78.389 to \$79.361 per kg in February. In March, worldwide molybdenum oxide (MoO<sub>3</sub>) prices ranged from \$33.488 to \$34.063 per lb compared with \$33.239 to \$33.694 per lb in February.

Thompson Creek Metals Co. planned to increase Endako Mine (British Columbia, Canada) production capacity to 50,000

metric tons per day (t/d) from 28,000 t/d beginning in 2010 at a capital cost of approximately \$280 million. The company planned to build a more cost efficient mill with fewer mechanical items and with the ability to handle different ores more easily. The final approval of the expansion was subject to approval by Sojitz Corp., owner of 25% interest in the mine (Metals Place, 2008).

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

### References Cited

- Metals Place, 2008, Molybdenum development—Approval for Endako expansion: Metals Place, March 24. (Accessed May 20, 2009, via <http://metalsplace.com/news/articles>.)  
Ryan's Notes, 2008, [untitled]: Ryan's Notes, v. 14, no. 14, April 7, p. 12.

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

(Metric tons, contained molybdenum)

	2007		2008		
	January- December	January- March	February	March	January- March
Production	57,000	15,400 <sup>r</sup>	4,990	5,050	14,700
Shipments: <sup>2</sup>					
Domestic	40,600	10,500	3,650	3,840	10,900
Export	16,400	4,720	1,490	1,170	3,960

<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- March	February	March	January- March
Gross production	72,800	19,300	6,030	6,100	18,500
Internal consumption <sup>2</sup>	41,700	11,700 <sup>r</sup>	3,670	3,450	10,300
Gross shipments	48,700	12,500 <sup>r</sup>	4,300	4,320	13,300

<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	Molybdic oxides	Ferro molyb- denum <sup>2</sup>	Ammonium and sodium molybdate	Molyb- denum scrap	Other	Total
2008, February:						
Steel:						
Carbon	30,600	W	--	--	W	30,600
High-strength low-alloy	53,600	10,700	--	--	11,300	75,600
Stainless and heat-resisting	170,000	64,200	--	W	6,510	241,000
Full alloy	247,000	277,000	--	--	1,510	526,000
Tool	W	W	--	--	--	W
Total	501,000	352,000	--	W	19,400	873,000
Cast irons (gray, malleable, and ductile iron)	W	20,700	--	--	763	21,500
Superalloys	60,400	W	--	W	78,800	139,000
Alloys: (other than steels, cast irons, and superalloys)						
Welding materials (structural and hard-facing)	--	W	--	--	6	6
Other alloys	W	7,390	--	--	--	7,390
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	--	--	--	--	1,040	1,040
Miscellaneous and unspecified uses:						
Lubricants	--	--	--	--	11,100	11,100
Other	16,600	35,700	72,800	72,500	16,800	214,000
Grand total	656,000	416,000	72,800	72,500	308,000	1,530,000
Stocks, February 29, 2008	362,000	302,000	4,110	20,400	851,000	1,540,000
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

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	February	January- February	January	February	January- February
Belgium	6,730,000	351,000	732,000	911,000	779,000	1,690,000
Brazil	119,000	36,300	36,900	--	--	--
Canada	2,580,000	177,000	455,000	384,000	116,000	500,000
Chile	1,270,000	--	--	--	--	--
China	71,500	--	36,000	--	--	--
Finland	38,000	--	--	--	--	--
India	119,000	11,800	11,800	--	--	--
Italy	19,000	--	--	12,000	--	12,000
Japan	2,230,000	188,000	274,000	273,000	116,000	389,000
Korea, Republic of	232,000	23,600	24,700	21,600	86,100	108,000
Mexico	4,760,000	192,000	834,000	424,000	423,000	847,000
Netherlands	9,660,000	1,240,000	3,130,000	860,000	573,000	1,430,000
Pakistan	75,600	38,800	38,800	--	--	--
Switzerland	1,630	--	--	--	--	--
Taiwan	17,900	413	413	--	--	--
Thailand	9,620	--	9,620	--	--	--
United Kingdom	5,800,000	513,000	953,000	283,000	495,000	778,000
Vietnam	4,990	--	2,140	--	2,540	2,540
Other	80,800	--	1,450	28,500	10,500	39,100
Total	33,800,000	2,780,000	6,540,000	3,200,000	2,600,000	5,800,000

-- 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	February	January- February	January	February	January- February
Australia	25,000	--	--	--	--	--
Canada	838,000	73,900	124,000	87,900	110,000	198,000
Denmark	394	--	--	--	--	--
India	1,090	--	--	140	--	140
Mexico	23,700	--	762	12,600	420	13,000
Netherlands	145,000	--	--	--	98,200	98,200
Philippines	735	--	--	--	--	--
Saudi Arabia	149,000	--	--	--	--	--
South Africa	13,500	--	--	--	--	--
United Kingdom	24,900	--	--	--	--	--
Total	1,220,000	73,900	125,000	101,000	209,000	310,000

-- 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			February 2008			January-February 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	792,000	497,000	\$17,300	1,680,000	1,050,000	\$36,500
Ore and concentrates other	15,000,000	6,960,000	372,000	1,080,000	505,000	31,500	2,650,000	1,180,000	72,900
Molybdenum chemicals:									
Oxides and hydroxides	211,000	NA	8,020	20,100	NA	763	41,400	NA	1,520
Molybdates of ammonium	915,000	515,000	30,400	85,500	48,200	3,590	145,000	81,500	5,230
Molybdates (all others)	179,000	51,400	2,190	17,000	6,000	184	18,000	6,460	206
Molybdenum orange	600,000	NA	4,040	42,200	NA	344	91,900	NA	725
Ferromolybdenum	6,360,000	4,100,000	270,000	308,000	208,000	14,900	947,000	630,000	44,500
Molybdenum powders	72,900	60,800	4,990	150	135	10	18,500	16,100	1,320
Molybdenum unwrought	117,000	117,000	7,460	5,180	5,120	309	15,400	15,300	1,010
Molybdenum waste and scrap	574,000	554,000	34,800	98,300	90,900	6,210	150,000	139,000	8,720
Molybdenum wire	17,900	NA	2,740	1,990	NA	305	3,070	NA	536
Molybdenum other	164,000	NA	20,900	19,800	NA	2,800	37,000	NA	4,940
Total	32,900,000	XX	938,000	2,470,000	XX	78,200	5,790,000	XX	178,000

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.