

Mineral Industry Surveys

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MOLYBDENUM IN FEBRUARY 2009

Domestic production of molybdenum (Mo) in concentrate in February 2009 was slightly less than the output of the previous month and about 31% less than that of February 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 6,980 t at the end of February.

According to Ryan's Notes (2009), the February 2009 monthly average price range for U.S. ferromolybdenum (FeMo) was \$10.100 to \$10.550 per pound (lb) of molybdenum content, compared with \$10.425 to \$10.813 per lb in January 2009. European FeMo monthly averages ranged from \$21.094 to \$21.669 per kilogram (kg) of molybdenum content in February compared with \$23.300 to \$23.913 per kg in January. In February, worldwide molybdenum oxide (MoO₃) prices ranged from \$8.925 to \$9.188 per lb compared with \$9.213 to \$9.600 per lb in January.

Antofagasta plc (Chile) announced that its 2008 molybdenum production at Los Pelambres Mine decreased by 23.5% to 7,800

metric tons (t) from 10,200 t in 2007. The company attributed the decrease to lower molybdenum ore grades. However, molybdenum production in the fourth quarter of 2008 was 2,100 t, 10.5% higher than that of the previous quarter. The company expected molybdenum production in 2009 to be approximately 8,100 t (Antofagasta plc, 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 January and February 2009. Export data for December 2008 and January 2009 and import data for January 2009 are also included.

References Cited

- Antofagasta plc, 2009, Quarterly production report: Santiago, Chile, Antofagasta plc, February 3, 6 p. (Accessed August 20, 2009, at http://www.antofagasta.co.uk/pdf/press_releases/2009/Aplc08Q4prodreport20090203.pdf.)
- Ryan's Notes, 2009, [untitled]: Ryan's Notes, v. 15, no. 9, March 2, p. 13.

TABLE 1
U.S. SALIENT MOLYBDENUM CONCENTRATE STATISTICS¹

(Metric tons, contained molybdenum)

	2008		2009		
	January- December	January- February	January	February	January- February
Production	55,800	9,650	3,550	3,450	6,990
Shipments: ²					
Domestic	41,100	7,060	2,140	1,670	3,800
Export	12,900	2,790	600	996	1,600

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- February	January	February	January- February
Gross production	72,800	12,400	4,970	4,690	9,660
Internal consumption ²	39,400	6,820	2,160	2,070	4,220
Gross shipments	51,200	9,000	3,270	3,410	6,670

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

²Includes molybdc 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	Molybdic oxides	Ferro molybdenum ²	Ammonium and sodium molybdate	Molybdenum scrap	Other	Total
2009, January:						
Steel:						
Carbon	30,200	W	--	--	W	30,200
High-strength low-alloy	39,100	7,840	--	--	11,300	58,300
Stainless and heat-resisting	184,000	65,400	--	W	6,510	256,000
Full alloy	241,000	288,000	--	--	1,510	531,000
Tool	W	W	--	--	--	W
Total	495,000	361,000	--	W	19,400	875,000
Cast irons (gray, malleable, and ductile iron)	W	20,700	--	--	763	21,500
Superalloys	47,900	W	--	W	72,900	121,000
Alloys: (other than steels, cast irons, and superalloys)						
Welding materials (structural and hard-facing)	--	W	--	--	6	6
Other alloys	W	4,320	--	--	--	4,320
Mill products made from metal powder ³	13,300	--	--	--	172,000	186,000
Cemented carbides and related products ⁴	--	--	--	--	W	W
Chemical and ceramic uses:						
Pigments	--	--	W	--	--	W
Catalysts	77,300	--	W	--	W	77,300
Other chemicals	--	--	--	--	239	239
Miscellaneous and unspecified uses:						
Lubricants	--	--	--	--	10,800	10,800
Other	66,800	28,200	72,600	87,000	16,800	271,000
Grand total	700,000	414,000	72,600	87,000	293,000	1,570,000
Stocks, January 31, 2009	306,000	319,000	2,150	10,500	857,000	1,490,000
2009, February:						
Steel:						
Carbon	30,900	W	--	--	W	30,900
High-strength low-alloy	39,100	7,930	--	--	11,300	58,400
Stainless and heat-resisting	152,000	62,400	--	W	6,510	221,000
Full alloy	237,000	251,000	--	--	1,510	490,000
Tool	W	W	--	--	--	W
Total	459,000	321,000	--	W	19,400	799,000
Cast irons (gray, malleable, and ductile iron)	W	20,700	--	--	763	21,500
Superalloys	47,900	W	--	W	72,900	121,000
Alloys: (other than steels, cast irons, and superalloys)						
Welding materials (structural and hard-facing)	--	W	--	--	6	6
Other alloys	W	5,570	--	--	--	5,570
Mill products made from metal powder ³	13,300	--	--	--	172,000	186,000
Cemented carbides and related products ⁴	--	--	--	--	W	W
Chemical and ceramic uses:						
Pigments	--	--	W	--	--	W
Catalysts	77,300	--	W	--	W	77,300
Other chemicals	--	--	--	--	417	417
Miscellaneous and unspecified uses:						
Lubricants	--	--	--	--	10,800	10,800
Other	66,800	28,400	72,600	87,200	16,800	272,000
Grand total	664,000	376,000	72,600	87,200	293,000	1,490,000
Stocks, February 28, 2009	307,000	312,000	2,150	10,700	857,000	1,490,000

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	January	December	January
Argentina	210,000	12,700	19,000	--
Belgium	6,910,000	911,000	383,000	160,000
Brazil	9,700	--	--	--
Canada	2,030,000	384,000	55,200	69,900
Chile	316,000	--	--	--
China	365,000	--	123,000	--
India	32,700	--	--	3,150
Italy	12,000	12,000	--	--
Japan	2,220,000	273,000	241,000	49,100
Korea, Republic of	694,000	21,600	51,900	31,800
Mexico	4,470,000	424,000	408,000	249,000
Netherlands	9,960,000	860,000	820,000	665,000
Niger	17,400	--	--	--
South Africa	11,400	--	11,400	--
United Kingdom	5,080,000	283,000	474,000	146,000
Vietnam	341,000	--	9,980	12,300
Other ²	35,000	3,230	567	300
Total	32,700,000	3,180,000	2,600,000	1,390,000

-- Zero.

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

²Includes countries with year-to-date 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	January	December	January
Australia	174	--	--	--
Belgium	--	--	--	13,500
Canada	933,000	87,900	13,900	32,400
Colombia	1,090	--	--	551
Denmark	454	--	--	--
India	1,150	140	--	--
Korea, Republic of	14,000	--	--	--
Mexico	58,600	12,600	10,200	5,160
Netherlands	280,000	--	--	--
Philippines	700	--	--	--
South Africa	68	--	--	--
United Arab Emirates	--	--	--	3,260
Total	1,290,000	101,000	24,100	54,900

-- Zero.

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

TABLE 6
U.S. IMPORTS FOR CONSUMPTION OF MOLYBDENUM PRODUCTS¹

(Kilograms, unless otherwise specified)

Material	January-December 2008			January 2009		
	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	417,000	258,000	\$4,230
Ore and concentrates other	9,140,000	4,170,000	263,000	1,320,000	573,000	12,600
Molybdenum chemicals:						
Oxides and hydroxides	335,000	NA	12,900	104,000	NA	1,670
Molybdates of ammonium	360,000	203,000	14,100	23,600	12,900	450
Molybdates (all others)	91,600	31,500	1,180	2,490	1,140	160
Molybdenum orange	373,000	NA	3,110	17,800	NA	130
Ferromolybdenum	3,460,000	2,320,000	166,000	844,000	559,000	12,400
Molybdenum powders	76,000	64,100	7,070	5,470	2,640	584
Molybdenum unwrought	256,000	255,000	15,800	NA	NA	NA
Molybdenum waste and scrap	588,000	546,000	30,900	29,200	28,900	1,210
Molybdenum wire	19,800	NA	3,060	1,680	NA	245
Molybdenum other	483,000	NA	48,700	10,600	NA	1,480
Total	25,100,000	XX	814,000	XX	XX	XX

NA Not available. XX Not applicable.

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

²Customs value.

Source: U.S. Census Bureau.