

# Mineral Industry Surveys

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## MOLYBDENUM IN JANUARY 2011

Domestic production of molybdenum (Mo) in concentrate in January 2011 was slightly less than the output of the previous month and was 20% more than that of January 2010, according to the U.S. Geological Survey. Producer stocks of molybdenum in concentrate, oxide, and other product forms were about 8,150 metric tons (t) at the beginning of 2011 and about 8,270 t at the end of January.

According to Ryan's Notes, the January 2011 monthly average price range for U.S. ferromolybdenum (FeMo) was \$19.250 to \$19.538 per pound (lb) of molybdenum content, compared with \$18.193 to \$18.529 per lb in December 2010. European FeMo monthly averages ranged from \$43.175 to \$43.675 per kilogram (kg) of molybdenum content in January compared with \$40.757 to \$41.221 per kg in December 2010. In January, worldwide molybdenum oxide (MoO<sub>3</sub>) prices ranged from \$17.100 to \$17.363 per lb compared with \$16.071 to \$16.271 per lb in December 2010.

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 December 2010 and January 2011. Export data for November and December 2010 and import data for December

2010 are also included.

China's imports of molybdenum concentrates decreased by 58% in the first 11 months of 2010 compared with imports during the same time period of 2009, according to official customs data. China imported 5,464 t of Mo concentrate in the January to November 2010 period, with an average price of \$10,909 per metric ton, 15% higher than the average price during the same time period in 2009 (Metal-Pages, 2011a). China's exports of MoO<sub>3</sub> (roasted molybdenum concentrate) increased 157% in the first 11 months of 2010, compared with exports during the same time period of 2009. China exported 20,413 t of MoO<sub>3</sub>, with an average price of \$20,202 per metric ton, 37% higher than the average price during the same time period in 2009 (Metal Pages, 2011b).

### References Cited

- Metal-Pages, 2011a, Chinese molybdenum concentrates imports decrease in Jan-Nov: Metal-Pages, January 4. (Accessed May 2, 2011, via <http://www.metal-pages.com/>)
- Metal-Pages, 2011b, Chinese molybdenum oxide exports increased in Jan-Nov 2010: Metal-Pages, January 24. (Accessed May 2, 2011, via <http://www.metal-pages.com/>)

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

(Metric tons, contained molybdenum)

	2010			2011 January
	January- December <sup>p</sup>	January	December	
Production	59,600	4,810 <sup>r</sup>	5,850	5,780
Shipments: <sup>2</sup>				
Domestic	14,000	1,080 <sup>r</sup>	1,350	1,000
Export	W	W	W	W

<sup>p</sup>Preliminary. <sup>r</sup>Revised. W Withheld to avoid disclosing company proprietary data.

<sup>1</sup>Data are rounded to no more than three significant digits.

<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)

	2010			2011 January
	January- December <sup>p</sup>	January	December	
Gross production	72,600	5,880 <sup>r</sup>	7,050	7,190
Internal consumption <sup>2</sup>	W	W	W	W
Gross shipments	51,600	4,230 <sup>r</sup>	4,870	4,960

<sup>p</sup>Preliminary. <sup>r</sup>Revised. W Withheld to avoid disclosing company proprietary data.

<sup>1</sup>Data are rounded to no more than three significant digits.

<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
2010, December:						
Steel:						
Carbon	33,200	W	--	--	W	33,200
High-strength low-alloy	54,800 <sup>r</sup>	7,320 <sup>r</sup>	--	--	--	62,100
Stainless and heat-resisting	158,000	62,100 <sup>r</sup>	--	W	6,510	227,000 <sup>r</sup>
Full alloy	248,000 <sup>r</sup>	298,000 <sup>r</sup>	--	--	W	546,000 <sup>r</sup>
Tool	W	W	--	--	--	W
Total	494,000 <sup>r</sup>	367,000 <sup>r</sup>	--	W	6,510	868,000
Cast irons (gray, malleable, and ductile iron)	W	W	--	--	W	W
Superalloys	29,200 <sup>r</sup>	W	--	W	86,700 <sup>r</sup>	116,000 <sup>r</sup>
Alloys: (other than steels, cast irons, and superalloys)						
Welding materials (structural and hard-facing)	--	W	--	--	W	W
Other alloys	115	W	--	--	--	115
Mill products made from metal powder <sup>3</sup>	--	--	--	--	W	W
Cemented carbides and related products <sup>4</sup>	--	--	--	--	6	6
Chemical and ceramic uses:						
Pigments	--	--	W	--	--	W
Catalysts	77,300	--	W	--	W	77,300
Other chemicals	--	--	--	--	W	W
Miscellaneous and unspecified uses:						
Lubricants	--	--	--	--	10,800	10,800
Other	66,600	53,300 <sup>r</sup>	72,600	25,000	209,000	427,000 <sup>r</sup>
Grand total	667,000 <sup>r</sup>	421,000 <sup>r</sup>	72,600	25,000	313,000 <sup>r</sup>	1,500,000 <sup>r</sup>
Stocks, December 31, 2010	331,000	290,000	2,080	(5)	(5)	1,530,000 <sup>r</sup>
2011, January:						
Steel:						
Carbon	33,000	W	--	--	W	33,000
High-strength low-alloy	55,700	8,230	--	--	--	63,900
Stainless and heat-resisting	178,000	65,700	--	W	6,510	250,000
Full alloy	251,000	316,000	--	--	W	567,000
Tool	W	W	--	--	--	W
Total	518,000	390,000	--	W	6,510	914,000
Cast irons (gray, malleable, and ductile iron)	W	W	--	--	W	W
Superalloys	27,600	W	--	W	89,000	117,000
Alloys: (other than steels, cast irons, and superalloys)						
Welding materials (structural and hard-facing)	--	W	--	--	W	W
Other alloys	100	W	--	--	--	100
Mill products made from metal powder <sup>3</sup>	--	--	--	--	W	W
Cemented carbides and related products <sup>4</sup>	--	--	--	--	6	6
Chemical and ceramic uses:						
Pigments	--	--	W	--	--	W
Catalysts	77,300	--	W	--	W	77,300
Other chemicals	--	--	--	--	W	W

See footnotes at end of table.

TABLE 3—Continued  
U.S. REPORTED CONSUMPTION, BY END USES, AND CONSUMER STOCKS OF MOLYBDENUM MATERIALS<sup>4</sup>

(Kilograms, contained molybdenum)

End use	Molybdic oxides	Ferro molyb- denum <sup>2</sup>	Ammonium and sodium molybdate	Molyb- denum scrap	Other	Total
2011, January—Continued:						
Miscellaneous and unspecified uses:						
Lubricants	--	--	--	--	10,800	10,800
Other	66,700	51,800	72,600	54,800	212,000	458,000
Grand total	689,000	442,000	72,600	54,800	318,000	1,580,000
Stocks, January 31, 2011	322,000	354,000	2,080	(5)	(5)	1,570,000

<sup>5</sup>Revised. 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.

<sup>5</sup>Withheld to avoid disclosing company proprietary data; included in "Total."

TABLE 4  
U.S. EXPORTS OF MOLYBDENUM ORES AND CONCENTRATES  
(including roasted concentrate), BY COUNTRY<sup>1</sup>

(Kilograms, contained molybdenum)

Country	2009		2010		
	January- December	December	November	December	January- December
Argentina	--	--	3,950	--	17,200
Australia	159	--	--	--	--
Austria	--	--	124,000	168,000	440,000
Belgium	7,060,000	747,000	732,000	920,000	9,610,000
Brazil	49,100	--	21,000	78,100	310,000
Canada	1,070,000	38,700	165,000	94,300	1,150,000
Chile	212,000	--	--	--	--
China	6,680,000	553,000	384,000	402,000	5,280,000
France	--	--	--	12,100	16,600
Germany	--	--	--	--	143,000
Hong Kong	38,900	38,900	--	1,140	1,140
India	144,000	5,570	138,000	140,000	924,000
Italy	--	--	--	--	13,200
Japan	912,000	110,000	308,000	261,000	2,630,000
Kenya	23,200	--	--	--	--
Korea, Republic of	884,000	45,400	44,100	54,900	805,000
Luxembourg	--	--	11,500	--	11,500
Mexico	2,870,000	355,000	513,000	510,000	5,040,000
Netherlands	6,510,000	587,000	675,000	453,000	8,210,000
New Caledonia	--	--	--	--	1,050
Panama	--	--	2,360	--	2,360
Poland	--	--	--	--	194
Slovenia	--	--	--	--	24,600
South Africa	431,000	--	--	--	520,000
Spain	--	--	--	--	24,600
Sweden	1,140	--	--	11,900	12,100
Taiwan	20,000	--	7,590	33,800	67,900
Thailand	9,620	--	--	--	19,200
United Arab Emirates	5,910	--	12,000	24,800	154,000
United Kingdom	2,440,000	224,000	553,000	668,000	5,000,000
Venezuela	1,580	--	--	--	940
Vietnam	229,000	23,500	2,390	80,500	149,000
Total	29,600,000	2,730,000	3,700,000	3,910,000	40,600,000

-- 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	2009		2010		
	January- December	December	November	December	January- December
Argentina	13,200	--	--	--	13,300
Australia	--	--	--	--	628
Belgium	13,500	--	--	--	--
Canada	581,000	41,100	37,400	50,400	677,000
China	25,300	--	--	--	--
Colombia	1,280	--	--	--	1,170
Denmark	200	--	--	--	372
India	65,300	--	6,640	--	36,600
Israel	95	--	--	--	--
Japan	--	--	--	12,700	12,700
Korea, Republic of	26,800	--	--	--	11,200
Mexico	55,200	2,320	3,260	--	12,900
Netherlands	24,000	--	26,000	40,200	196,000
Peru	3,180	--	--	--	--
Philippines	1,210	--	--	--	939
Singapore	--	--	6,890	--	14,300
Taiwan	12,500	--	--	--	--
Turkey	--	--	--	--	103
United Arab Emirates	3,260	--	--	--	--
Total	827,000	43,500	80,100	103,000	978,000

-- 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 2009			December 2010			January-December 2010		
	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	7,780,000	4,800,000	\$94,800	755,000	461,000	\$7,840	10,300,000	6,340,000	\$112,000
Ore and concentrates other	5,590,000	2,720,000	54,900	864,000	450,000	13,700	13,500,000	6,610,000	202,000
Molybdenum chemicals:									
Oxides and hydroxides	209,000	NA	3,330	32,300	NA	815	508,000	NA	12,200
Molybdates of ammonium	1,140,000	642,000	19,400	21,100	11,900	465	1,590,000	905,000	28,600
Molybdates (all others)	30,300	14,500	1,090	1,540	609	92	62,600	23,300	1,510
Molybdenum orange	269,000	NA	2,170	19,000	NA	181	349,000	NA	2,730
Ferromolybdenum	3,040,000	2,030,000	50,100	425,000	285,000	10,100	5,330,000	3,560,000	130,000
Molybdenum powders	60,000	52,500	2,870	736	631	50	232,000	221,000	10,100
Molybdenum unwrought	107,000	97,800	2,880	60,300	59,900	2,460	307,000	301,000	10,200
Molybdenum waste and scrap	482,000	473,000	15,300	20,000	20,000	783	703,000	682,000	26,900
Molybdenum wire	15,100	NA	2,120	1,740	NA	275	19,300	NA	3,030
Molybdenum other	306,000	NA	19,800	33,500	NA	2,720	582,000	NA	37,500
Total	19,000,000	XX	269,000	2,230,000	XX	39,400	33,500,000	XX	576,000

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.