

# Mineral Industry Surveys

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## MOLYBDENUM IN OCTOBER 2006

Domestic production of molybdenum in concentrate in October 2006 was about 3% more than that of the previous month and about 1% greater than that of October 2005, according to the U.S. Geological Survey. Producer stocks of molybdenum in concentrate, oxide, and other product forms were about 7,390 metric tons (t) at the beginning of 2006, and about 6,880 t at the end of October.

According to Ryan's Notes (2006), the October monthly average price range for U.S. ferromolybdenum (FeMo) was from \$27.561 to \$28.056 per pound of molybdenum content, compared with \$28.111 to \$28.611 in September. European FeMo monthly averages ranged from \$59.250 to \$60.333 per kilogram (kg) of molybdenum content in October compared with \$62.500 to \$63.444 per kg in September. In October, worldwide molybdenum oxide (MoO<sub>3</sub>) prices ranged from \$25.522 to \$25.989 per pound versus \$27.011 to \$27.500 per pound in September.

Molibdenos y Metales SA (Molymet) announced plans to build a new molybdenum roasting plant in Chile's Region 2 near Mejillones. The project would provide an additional

13,600 t (30 million pounds) of molybdenum concentrate roasting capacity starting in 2010. This facility would be in addition to Molymet's previously announced expansions of 18,150 t (40 million pounds) to the existing plant at Nos, Chile, in 2007 and 4,500 t (10 million pounds) to the existing plant at Sadaci, Belgium, in 2009. The decision to build the new plant was based on forecasts that additional roasting capacity would be needed around 2010 (Metal Bulletin, 2006).

Included in this Mineral Industry Surveys are U.S. production and shipments of molybdenum concentrates and materials, U.S. consumption by end use, and stocks of molybdenum material in September and October 2006. Export data for August and September 2006 and import data for September 2006 are also included.

### References Cited

Metal Bulletin, 2006, Molymet to build new molybdenum plant in Chile: Metal Bulletin, no. 8965, October 9, p. 16.  
Ryan's Notes, 2006, [untitled]: Ryan's Notes, v. 12, no. 44, November 6, p. 10.

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

(Metric tons, contained molybdenum)

	2005		2006		
	January- December <sup>p</sup>	January- October	September	October	January- October
Production	57,900	48,300	4,920	5,070	51,000
Shipments: <sup>2</sup>					
Domestic	38,200	32,300	2,970	3,220	33,400
Export	19,400	15,500	1,870	1,850	17,800

<sup>p</sup>Preliminary.

<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)

	2005		2006		
	January- December <sup>p</sup>	January- October	September	October	January- October
Gross production	78,500	65,300	6,420	5,750	65,600
Internal consumption <sup>2</sup>	48,700	41,700	3,260	3,990	40,600
Gross shipments	46,700	39,300	3,730	4,260	41,700

<sup>p</sup>Preliminary.

<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 molybdenum <sup>2</sup>	Ammonium and sodium molybdate	Molybdenum scrap	Other	Total
<b>2006, September:</b>						
Steel:						
Carbon	12,400	W	--	--	W	12,400
High-strength low-alloy	40,100 <sup>r</sup>	9,120	--	--	11,300	60,600 <sup>r</sup>
Stainless and heat-resisting	173,000	66,200	--	W	6,510	245,000
Full alloy	169,000 <sup>r</sup>	212,000 <sup>r</sup>	--	--	1,510	383,000 <sup>r</sup>
Tool	41,100	W	--	--	--	41,100
Total	435,000 <sup>r</sup>	288,000 <sup>r</sup>	--	W	19,400	742,000 <sup>r</sup>
Cast irons (gray, malleable, and ductile iron)	W	6,840	--	--	763	7,600
Superalloys	79,200	W	--	(3)	141,000	221,000
Alloys: (other than steels, cast irons, and superalloys)						
Welding materials (structural and hard-facing)	--	W	--	--	6	6
Other alloys	66	4,470	--	--	--	4,530
Mill products made from metal powder <sup>4</sup>	--	--	--	--	185,000	185,000
Cemented carbides and related products <sup>5</sup>	--	--	--	--	W	W
Chemical and ceramic uses:						
Pigments	--	--	W	--	--	W
Catalysts	77,300	--	W	--	W	77,300
Other chemicals	--	--	--	--	828 <sup>r</sup>	828 <sup>r</sup>
Miscellaneous and unspecified uses:						
Lubricants	--	--	--	--	11,100	11,100
Other	1,090	30,300	73,000	1,840	16,800	123,000
Grand total	593,000 <sup>r</sup>	329,000 <sup>r</sup>	73,000	1,840	376,000	1,370,000 <sup>r</sup>
Stocks, September 30, 2006	434,000 <sup>r</sup>	175,000 <sup>r</sup>	3,070	9,220	852,000 <sup>r</sup>	1,470,000
<b>2006, October:</b>						
Steel:						
Carbon	11,600	W	--	--	W	11,600
High-strength low-alloy	46,400	7,930	--	--	11,300	65,700
Stainless and heat-resisting	164,000	64,900	--	W	6,510	236,000
Full alloy	150,000	244,000	--	--	1,510	395,000
Tool	52,500	W	--	--	--	52,500
Total	425,000	316,000	--	W	19,400	761,000
Cast irons (gray, malleable, and ductile iron)	W	7,960	--	--	763	8,720
Superalloys	84,400	W	--	(3)	156,000	240,000
Alloys: (other than steels, cast irons, and superalloys)						
Welding materials (structural and hard-facing)	--	W	--	--	6	6
Other alloys	73	3,930	--	--	--	4,010
Mill products made from metal powder <sup>4</sup>	--	--	--	--	194,000	194,000
Cemented carbides and related products <sup>5</sup>	--	--	--	--	W	W
Chemical and ceramic uses:						
Pigments	--	--	W	--	--	W
Catalysts	77,300	--	W	--	W	77,300
Other chemicals	--	--	--	--	809	809
Miscellaneous and unspecified uses:						
Lubricants	--	--	--	--	11,100	11,100
Other	1,090	30,900	73,000	1,840	16,800	124,000
Grand total	588,000	359,000	73,000	1,840	398,000	1,420,000
Stocks, October 31, 2006	480,000	174,000	3,070	15,500	855,000	1,530,000

<sup>1</sup>Revised. W Withheld to avoid disclosing company proprietary data; included in "Other" of the "Miscellaneous and unspecified uses" category. -- Zero.

<sup>2</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>3</sup>Includes calcium molybdate.

<sup>4</sup>Included in "Other" of the "Superalloys" category.

<sup>5</sup>Includes ingot, wire, rod, and sheet.

<sup>6</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	2005		2006		
	January- December	January- September	August	September	January- September
Australia	110,000	110,000	--	--	7,350
Austria	3,230	3,230	--	--	--
Belgium	9,430,000	6,850,000	884,000	651,000	6,020,000
Brazil	66,700	66,700	--	300	56,300
Canada	3,840,000	2,980,000	180,000	203,000	2,090,000
Chile	177,000	111,000	--	--	140,000
China	4,390,000	4,020,000	--	--	398,000
Costa Rica	3,810	3,810	--	--	--
India	41,100	38,900	11,700	33,200	47,100
Italy	35,100	35,100	--	--	--
Japan	2,050,000	1,590,000	190,000	162,000	1,740,000
Korea, Republic of	11,700	11,400	--	34,000	45,000
Mexico	3,130,000	2,030,000	762,000	615,000	4,620,000
Netherlands	15,000,000	13,400,000	837,000	694,000	7,460,000
Taiwan	3,600	3,600	--	--	608
United Kingdom	7,310,000	5,430,000	196,000	629,000	5,430,000
Other	767,000	753,000	2,360	3,270	56,000
Total	46,400,000	37,500,000	3,060,000	3,030,000	28,100,000

-- 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	2005		2006		
	January- December	January- September	August	September	January- September
Argentina	--	--	--	--	14,500
Australia	--	--	--	--	24,100
Austria	11,400	--	--	--	--
Brazil	17,200	16,800	--	--	37,700
Canada	1,930,000	1,410,000	78,600	27,800	1,610,000
Denmark	--	--	--	--	57
India	--	--	--	--	367
Indonesia	5,930	5,930	--	--	--
Japan	--	--	--	--	60
Mexico	88,700	34,600	2,010	2,010	140,000
Netherlands	33,300	33,300	--	--	--
Singapore	--	--	--	--	1,630
Switzerland	--	--	--	--	12,000
Total	2,090,000	1,500,000	80,600	29,900	1,840,000

-- 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 2005			September 2006			January-September 2006		
	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	8,570,000	5,380,000	\$306,000	644,000	401,000	\$14,600	8,070,000	4,960,000	\$133,000
Ore and concentrates other	13,800,000	6,480,000	440,000	737,000	315,000	14,200	7,620,000	3,520,000	160,000
Molybdenum chemicals:									
Oxides and hydroxides	1,240,000	NA	42,500	77,000	NA	3,420	503,000	NA	19,500
Molybdates of ammonium	4,220,000	2,730,000	53,600	20,000	11,200	397	1,230,000	729,000	28,700
Molybdates (all others)	101,000	24,800	1,250	14,000	5,540	204	157,000	40,300	1,740
Molybdenum orange	983,000	NA	4,780	85,100	NA	579	646,000	NA	4,120
Ferromolybdenum	6,340,000	4,040,000	278,000	436,000	283,000	16,400	3,900,000	2,480,000	132,000
Molybdenum powders	92,900	78,500	7,740	80,100	51,700	3,010	307,000	211,000	13,300
Molybdenum unwrought	99,000	98,800	5,750	10,500	10,500	672	153,000	152,000	8,530
Molybdenum waste and scrap	503,000	480,000	35,600	42,300	42,000	2,600	371,000	365,000	23,200
Molybdenum wire	21,300	NA	3,160	1,550	NA	177	13,700	NA	1,840
Molybdenum other	163,000	NA	20,700	7,440	NA	1,270	107,000	NA	13,100
Total	36,200,000	19,300,000	1,200,000	2,160,000	1,120,000	57,500	23,100,000	12,500,000	539,000

NA Not available.

<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.