

# Mineral Industry Surveys

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## MOLYBDENUM IN SEPTEMBER 2007

Domestic production of molybdenum (Mo) in concentrate in September 2007 was about 11% less than the output of the previous month and about 15% less than that of September 2006, according to the U.S. Geological Survey. Producer stocks of molybdenum in concentrate, oxide, and other product forms were about 5,330 metric tons (t) at the beginning of 2007 and about 6,310 t at the end of September.

According to Ryan's Notes (2007b), the September monthly average price range for U.S. ferromolybdenum (FeMo) was \$34.588 to \$35.313 per pound of molybdenum content, compared with \$34.567 to \$35.500 in August. European FeMo monthly averages ranged from \$73.013 to \$73.838 per kilogram (kg) of molybdenum content in September compared with \$72.967 to \$74.244 per kg in August. In September, worldwide molybdenum oxide (MoO<sub>3</sub>) prices ranged from \$31.494 to \$32.044 per pound versus \$31.422 to \$32.178 per pound in August.

Mercator Minerals Ltd. entered into a 10-year sales agreement under which Derek Raphael & Co. Ltd. would purchase all molybdenum concentrates produced at the Mineral Park Mine (Arizona). The mine was expected to produce about 4,700 t

(10.3 million pounds) of molybdenum in concentrate per year for the first 10 years of its 25-year mine life (Ryan's Notes, 2007a).

Adanac Molybdenum Corp. received the Environmental Assessment Certificate from the government of British Columbia on September 10 and has completed procurement of long lead-time equipment. Construction on its Ruby Creek molybdenum project was expected to begin the fall of 2007 after receipt of the pre-construction permit (Ryan's Notes, 2007a).

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 August and September 2007. Export data for July and August 2007 and import data for August 2007 are also included.

### References Cited

- Ryan's Notes, 2007a, Ferroalloy notes: Ryan's Notes, v. 13, no. 37, September 17, p. 5.  
Ryan's Notes, 2007b, [untitled]: Ryan's Notes, v. 13, no. 39, October 1, p. 10.

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

(Metric tons, contained molybdenum)

	2006 <sup>p</sup>		2007		
	January- December	January- September	August	September	January- September
Production	59,800	45,900	4,690	4,180	43,800
Shipments: <sup>2</sup>					
Domestic	38,600	30,200	3,200	3,320	30,400
Export	21,300	15,900	1,760	1,010	13,000

<sup>p</sup>Pre liminary.

<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)

	2006 <sup>p</sup>		2007		
	January- December	January- September	August <sup>r</sup>	September	January- September
Gross production	78,000	59,900	3,090	3,420	44,000
Internal consumption <sup>2</sup>	47,400	36,600	528	1,180	21,300
Gross shipments	51,000	37,400	4,170	3,870	36,300

<sup>p</sup>Pre liminary. <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
2007, August:						
Steel:						
Carbon	23,900	W	--	--	W	23,900
High-strength low-alloy	37,900	10,200	--	--	11,300	59,400
Stainless and heat-resisting	176,000	64,800	--	W	6,510	248,000
Full alloy	156,000	311,000	--	--	1,510	468,000
Tool	59,700	W	--	--	--	59,700
Total	453,000	386,000	--	W	19,400	859,000
Cast irons (gray, malleable, and ductile iron)	W	6,860	--	--	763	7,620
Superalloys	55,000	W	--	W	76,000	131,000
Alloys: (other than steels, cast irons, and superalloys)						
Welding materials (structural and hard-facing)	--	W	--	--	6	6
Other alloys	119	4,670	--	--	--	4,790
Mill products made from metal powder <sup>3</sup>	--	--	--	--	188,000 <sup>r</sup>	188,000 <sup>r</sup>
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	--	--	--	--	472	472
Miscellaneous and unspecified uses:						
Lubricants	--	--	--	--	10,600	10,600
Other	1,090	38,600	72,900	109,000	34,700	257,000
Grand total	587,000	436,000	72,900	109,000	330,000 <sup>r</sup>	1,530,000
Stocks, August 31, 2007	555,000	311,000	3,910	19,100	859,000	1,750,000
2007, September:						
Steel:						
Carbon	32,900	W	--	--	W	32,900
High-strength low-alloy	37,900	10,200	--	--	11,300	59,400
Stainless and heat-resisting	171,000	64,500	--	W	6,510	242,000
Full alloy	150,000	230,000	--	--	1,510	381,000
Tool	61,700	W	--	--	--	61,700
Total	453,000	305,000	--	W	19,400	777,000
Cast irons (gray, malleable, and ductile iron)	W	6,860	--	--	763	7,620
Superalloys	45,400	W	--	W	76,000	121,000
Alloys: (other than steels, cast irons, and superalloys)						
Welding materials (structural and hard-facing)	--	W	--	--	6	6
Other alloys	203	2,560	--	--	--	2,760
Mill products made from metal powder <sup>3</sup>	--	--	--	--	190,000	190,000
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	--	--	--	--	472	472
Miscellaneous and unspecified uses:						
Lubricants	--	--	--	--	10,600	10,600
Other	2,000	38,100	72,900	48,800	34,100	196,000
Grand total	578,000	352,000	72,900	48,800	331,000	1,380,000
Stocks, September 30, 2007	534,000	307,000	3,910	16,000	859,000	1,720,000

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

<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	2006		2007		
	January- December	January- August	July	August	January- August
Australia	88,800	7,350	--	--	800
Belgium	7,490,000	5,370,000	654,000	551,000	4,280,000
Brazil	113,000	56,000	9,530	--	100,000
Canada	2,680,000	1,890,000	141,000	134,000	1,850,000
Chile	259,000	140,000	--	--	1,270,000
China	405,000	398,000	--	--	71,400
India	82,800	13,800	11,600	--	106,000
Japan	2,260,000	1,580,000	243,000	323,000	1,350,000
Korea, Republic of	45,000	11,000	--	--	24,700
Mexico	6,070,000	4,000,000	357,000	384,000	3,350,000
Netherlands	10,300,000	6,770,000	548,000	557,000	6,850,000
Pakistan	--	--	--	--	75,600
Sweden	20,000	--	--	--	--
Switzerland	25,200	25,200	--	--	1,630
Taiwan	53,400	608	--	17,500	17,900
Thailand	9,740	9,740	--	--	9,620
United Kingdom	7,280,000	4,800,000	324,000	801,000	3,730,000
Vietnam	14,100	13,800	--	--	4,130
Other	9,420	3,980	2,880	17,300	24,000
Total	37,200,000	25,100,000	2,290,000	2,780,000	23,100,000

<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	2006		2007		
	January- December	January- August	July	August	January- August
Argentina	14,500	14,500	--	--	--
Australia	24,500	24,100	--	13,800	25,000
Brazil	37,700	37,700	--	--	--
Canada	1,760,000	1,580,000	65,700	19,000	514,000
Denmark	57	57	--	--	394
India	667	367	--	536	953
Japan	60	60	--	--	--
Mexico	143,000	138,000	877	490	20,500
Netherlands	14,000	--	--	--	145,000
Saudi Arabia	--	--	--	--	45,500
Singapore	1,630	1,630	--	--	--
South Africa	--	--	--	--	13,500
Switzerland	12,000	12,000	--	--	--
United Kingdom	--	--	--	--	24,900
Total	2,010,000	1,810,000	66,600	33,800	790,000

-- 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 2006			August 2007			January-August 2007		
	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	9,570,000	5,900,000	\$167,000	858,000	529,000	\$22,600	5,820,000	3,650,000	\$111,000
Ore and concentrates other	10,900,000	5,000,000	227,000	661,000	320,000	20,700	11,900,000	5,640,000	297,000
Molybdenum chemicals:									
Oxides and hydroxides	629,000	NA	24,300	39,800	NA	1,380	158,000	NA	5,790
Molybdates of ammonium	1,430,000	844,000	34,100	20,000	11,300	397	634,000	358,000	20,200
Molybdates (all others)	241,000	72,700	2,810	3,280	1,420	62	124,000	44,000	1,580
Molybdenum orange	822,000	NA	5,110	50,800	NA	347	410,000	NA	2,600
Ferromolybdenum	4,810,000	3,060,000	165,000	605,000	397,000	26,500	4,290,000	2,760,000	178,000
Molybdenum powders	367,000	270,000	17,600	4,620	4,620	260	46,100	43,600	3,310
Molybdenum unwrought	191,000	191,000	10,800	13,000	13,000	768	104,000	104,000	6,600
Molybdenum waste and scrap	452,000	445,000	27,800	30,500	27,100	1,540	375,000	358,000	22,200
Molybdenum wire	18,600	NA	2,550	1,480	NA	224	12,600	NA	1,870
Molybdenum other	130,000	NA	17,000	15,100	NA	1,720	98,100	NA	12,000
Total	29,600,000	15,800,000	701,000	2,300,000	1,300,000	76,500	24,000,000	13,000,000	662,000

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.