

Mineral Industry Surveys

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MOLYBDENUM IN JULY 2016

Domestic production of molybdenum in concentrate in July 2016 was 8% more than the output of the previous month and 28% less than that of July 2015 (fig. 1). The decrease in year-on-year production is attributed to the idling of byproduct molybdenum circuits at copper mines. Producer stocks of molybdenum in concentrate, oxide, and other product forms were about 5,940 metric tons (t) at the end of July, a decrease from about 6,730 t at yearend 2015.

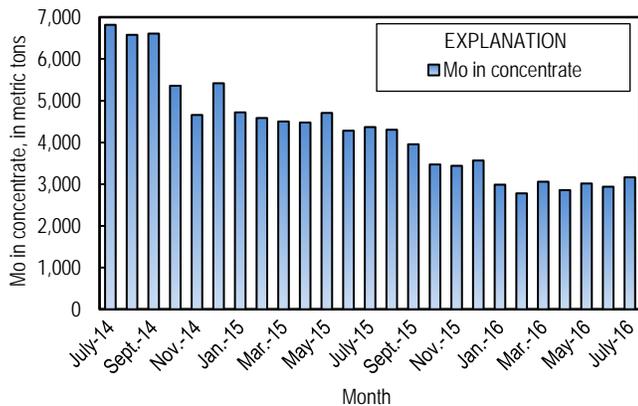


Figure 1. Monthly domestic production of molybdenum (Mo) in concentrate from July 2014 through July 2016 (may include revisions to previously published data). Source: U.S. Geological Survey.

According to CRU Group, the July 2016 monthly average price range for U.S. ferromolybdenum (FeMo) was \$7.981 to \$8.481 per pound of molybdenum content, compared with \$8.739 to \$9.200 per pound in June 2016. European FeMo monthly averages ranged from \$16.981 to \$17.331 per kilogram of molybdenum content in July compared with \$18.444 to

\$18.783 per kilogram in June. In July, U.S molybdenum oxide (MoO₃) prices ranged from \$6.844 to \$7.100 per pound compared with \$7.889 to \$8.044 per pound in June (fig. 2).

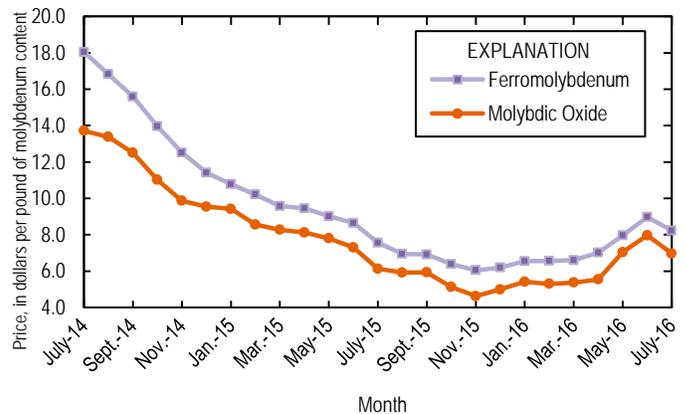


Figure 2. Average monthly prices for U.S. ferromolybdenum and molybdenic oxide from July 2014 through July 2016. Source: CRU Group.

Reference Cited

CRU Group, 2016, Molybdenum prices: CRU Group, September 1. (Accessed October 7, 2016, via <http://www.crugroup.com/>.)

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TABLE 1
U.S. SALIENT MOLYBDENUM CONCENTRATE
STATISTICS^{1,2}

(Metric tons, contained molybdenum)

Period	Production	Shipments ^{3,4}
2015:		
January–July ^f	31,700	31,700
July	4,370	4,370
August	4,310	4,270
September	3,960	4,000
October	3,470	3,450
November	3,440	3,400
December	3,570	3,640
January–December	50,400	50,400
2016:		
January	2,990	2,960
February	2,780	2,790
March	3,060	3,050
April	2,860	2,890
May	3,020	2,970
June	2,940	2,950
July	3,170	3,190
January–July	20,800	20,800

^fRevised.

¹Data are rounded to no more than three significant digits.

²Includes data from Freeport-McMoRan Copper & Gold Inc., 2015-2016. Adjusted by USGS to reflect estimated monthly data.

³As reported by producers.

⁴Shipments include sales to domestic customers, sales for export, and transfers to other company plants.

TABLE 2
U.S. REPORTED CONSUMPTION, BY END USES, AND CONSUMER STOCKS OF MOLYBDENUM MATERIALS¹

(Kilograms, contained molybdenum)

End use	Molybdic oxides	Ferro molyb- denum ²	Ammonium and sodium molybdate	Molyb- denum scrap	Other	Total
2016:						
June:						
Steel:						
Carbon	W	W	--	--	--	W
High-strength low-alloy	W	7,120	--	--	--	7,120
Stainless and heat-resisting	180,000	49,500	--	(3)	W	229,000
Full alloy	246,000	148,000	--	--	W	394,000
Tool	W	W	--	--	--	W
Total	426,000	205,000	--	(3)	W	631,000
Cast irons (gray, malleable, and ductile iron)	W	W	--	--	--	W
Superalloys	W	W	--	(3)	66,400	66,400
Alloys: (other than steels, cast irons, and superalloys)						
Welding materials (structural and hard-facing)	--	W	--	--	--	W
Other alloys	205	W	--	--	--	205
Mill products made from metal powder ⁴	--	--	--	--	W	W
Cemented carbides and related products ⁵	--	--	--	--	W	W
Chemical and ceramic uses:						
Pigments	--	--	(3)	--	--	--
Catalysts	W	--	(3)	--	W	W
Other chemicals	--	--	--	--	--	--
Miscellaneous and unspecified uses:						
Lubricants	--	--	--	--	9,440	9,440
Other	200,000	36,300	425	(3)	322,000	559,000
Grand total	626,000	241,000	425	(3)	398,000	1,270,000
Stocks, June 30, 2016	543,000	300,000	3,420	(6)	(6)	1,730,000
July:						
Steel:						
Carbon	W	W	--	--	--	W
High-strength low-alloy	W	7,120	--	--	--	7,120
Stainless and heat-resisting	186,000	50,700	--	(3)	W	236,000
Full alloy	246,000	148,000	--	--	W	394,000
Tool	W	W	--	--	--	W
Total	432,000	206,000	--	(3)	W	638,000
Cast irons (gray, malleable, and ductile iron)	W	W	--	--	--	W
Superalloys	W	W	--	(3)	69,200	69,200
Alloys: (other than steels, cast irons, and superalloys)						
Welding materials (structural and hard-facing)	--	W	--	--	--	W
Other alloys	271	W	--	--	--	271
Mill products made from metal powder ⁴	--	--	--	--	W	W
Cemented carbides and related products ⁵	--	--	--	--	W	W
Chemical and ceramic uses:						
Pigments	--	--	(3)	--	--	--
Catalysts	W	--	(3)	--	W	W
Other chemicals	--	--	--	--	--	--
Miscellaneous and unspecified uses:						
Lubricants	--	--	--	--	9,440	9,440
Other	194,000	37,200	425	(3)	324,000	556,000
Grand total	626,000	243,000	425	(3)	403,000	1,270,000
Stocks, July 31, 2016	542,000	292,000	3,420	(6)	(6)	1,720,000

W Withheld to avoid disclosing company proprietary data; included in "Miscellaneous and unspecified uses: Other" category. -- Zero.

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

²Includes calcium molybdate.

³Withheld to avoid disclosing company proprietary data; included in "Other, Miscellaneous and unspecified uses: Other" category.

⁴Includes ingot, wire, rod, and sheet.

⁵Includes construction, mining, oil and gas, metalworking machinery.

⁶Withheld to avoid disclosing company proprietary data; included in "Total."

TABLE 3
U.S. EXPORTS OF MOLYBDENUM ORES AND CONCENTRATES
(including roasted concentrate), BY COUNTRY¹

(Kilograms, contained molybdenum)

Country	2015			2016		
	January– December	July	January– July	June	July	January– July
Belgium	3,900,000	124,000	3,000,000	116,000	233	365,000
Brazil	83,400	23,200	71,100	11,900	11,900	36,000
Canada	1,690,000	155,000	1,060,000 ^f	118,000	101,000	774,000
China	477,000	--	239,000	114,000	--	639,000
Estonia	118,000	--	118,000	--	--	--
Germany	--	--	--	4,510	586	8,330
India	252,000	35,300	50,800	--	--	29,000
Japan	2,900,000	232,000	1,760,000	174,000	149,000	1,060,000
Korea, Republic of	1,350,000	55,000 ^f	759,000 ^f	--	--	108,000
Mexico	2,520,000	178,000	1,520,000	--	--	24,700
Netherlands	18,100,000	2,010,000	11,700,000	936,000	1,470,000	7,690,000
Russia	7,260	--	7,260	--	--	--
Sweden	16,900	--	16,900	--	--	--
Taiwan	21,000	2,040	19,600	--	--	15,000
Thailand	2,110	--	2,110	46,300	--	81,500
United Kingdom	5,110,000	--	3,180,000	44,800	126,000	1,630,000
Vietnam	274,000	7,080	127,000	1,360	7,850	132,000
Total	36,800,000	2,830,000 ^f	23,600,000	1,570,000	1,860,000	12,600,000

^fRevised. -- Zero.

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

Source: U.S. Census Bureau.

TABLE 4
U.S. EXPORTS OF FERROMOLYBDENUM, BY COUNTRY¹

(Kilograms, contained molybdenum)

Country	2015			2016		
	January– December	July ^f	January– July ^f	June	July	January– July
Argentina	--	--	--	227	--	227
Canada	693,000	79,900	545,000	61,700	36,000	269,000
Colombia	1,010	545	1,010	--	--	1,520
Denmark	734	--	489	245	--	489
Mexico	120,000	454	111,000	20,200	454	22,500
Vietnam	235	--	235	--	--	--
Total	815,000	80,900	658,000	82,400	36,400	294,000

^fRevised. -- Zero.

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

Source: U.S. Census Bureau.

TABLE 5
U.S. IMPORTS FOR CONSUMPTION OF MOLYBDENUM PRODUCTS¹

(Kilograms, unless otherwise specified)

Material	2015			2016					
	January–December 2015			July			January–July		
	Gross weight	Contained molybdenum	Value ² (thousands)	Gross weight	Contained molybdenum	Value ² (thousands)	Gross weight	Contained molybdenum	Value ² (thousands)
Ore and concentrates roasted	6,780,000	4,050,000	\$76,400	693,000	409,000	\$7,160	4,080,000	2,430,000	\$35,200
Ore and concentrates other	18,000,000	8,830,000	129,000	1,370,000	690,000	14,800	11,300,000	5,760,000	73,100
Molybdenum chemicals:									
Oxides and hydroxides	756,000	NA	10,100	214,000	NA	3,000	2,010,000	NA	24,300
Molybdates of ammonium	1,000,000	565,000	11,600	169,000	95,200	2,030	1,720,000	967,000	19,500
Molybdates (all others)	32,700	12,900	455	--	--	--	93,900	37,900	724
Molybdenum orange	609,000	NA	2,580	58,200	NA	152	397,000	NA	1,350
Ferromolybdenum	2,380,000	1,610,000	36,300	269,000	187,000	4,820	1,670,000	1,150,000	27,400
Molybdenum powders	232,000	206,000	7,560	9,690	7,670	289	126,000	119,000	3,440
Molybdenum unwrought	682,000	679,000	16,500	70,100	70,100	1,460	570,000	568,000	10,300
Molybdenum waste and scrap	536,000	516,000	11,500	41,900	41,500	874	391,000	375,000	6,860
Molybdenum wire	14,400	NA	1,860	2,310	NA	358	10,300	NA	1,320
Molybdenum other	239,000	NA	18,400	12,000	NA	1,050	125,000	NA	9,250
Total	31,200,000	XX	323,000	2,910,000	XX	36,000	22,500,000	XX	213,000

NA Not available. XX Not applicable. -- Zero.

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

²Customs value.

Source: U.S. Census Bureau.