

# Mineral Industry Surveys

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## MOLYBDENUM IN JULY 2021

Domestic production of molybdenum in concentrate in July 2021 was essentially unchanged compared with the output of the previous month and 31% less compared with that of July 2020. Domestic production of molybdenum in concentrate in January through July 2021 was 15% less than production during the same period in 2020 (fig. 1, table 1). One of the main reasons for the decrease in molybdenum in concentrate production continued to be the decrease in production at Rio Tinto Kennecott's Bingham Canyon Mine that began in April 2021. The company attributed the decrease to lower ore grades (Rio Tinto plc, 2021, p. 25).

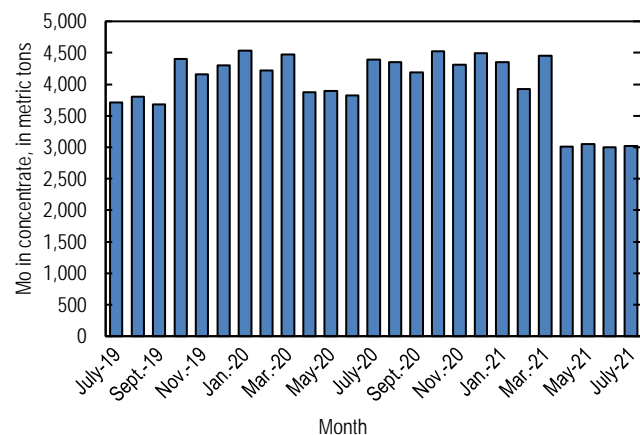


Figure 1. Monthly domestic production of molybdenum (Mo) in concentrate from July 2019 through July 2021 (may include revisions to previously published data).

According to CRU Group (2021), the July 2021 monthly average price range for U.S. ferromolybdenum (FeMo) was \$20.000 to \$20.900 per pound of molybdenum content compared with \$17.556 to \$18.500 per pound of molybdenum content in June 2021. U.S. monthly FeMo prices have not been this high since May 2010, when prices were \$20.550 per pound of molybdenum content.

FeMo monthly average prices in Europe ranged from \$43.361 to \$44.678 per kilogram (\$19.668 to \$20.266 per pound) of molybdenum content in July 2021 compared with \$43.556 to \$44.228 per kilogram (\$19.757 to \$20.062 per pound) in June 2021. U.S. molybdic oxide (MoO<sub>3</sub>) prices ranged from \$18.500 to \$20.000 per pound of molybdenum content in July 2021 compared with \$16.611 to \$17.778 per pound of molybdenum content in June 2021 (fig. 2).

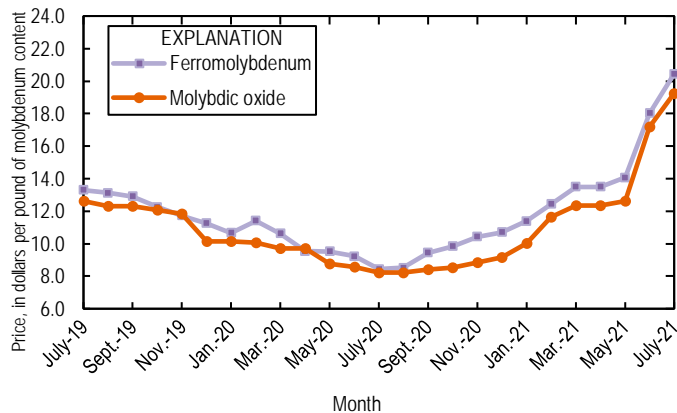


Figure 2. Average monthly prices for U.S. ferromolybdenum and molybdic oxide from July 2019 through July 2021. Source: CRU Group.

## References Cited

- CRU Group, 2021, Molybdenum prices: London, United Kingdom, CRU Group, August 2. (Accessed September 16, 2021, via <http://www.crugroup.com/>.)  
 Rio Tinto plc, Rio Tinto releases second quarter production results: London, United Kingdom, Rio Tinto plc, July 16, 28 p. (Accessed August 27, 2021, at <https://www.riotinto.com/news/releases/2021/Rio-Tinto-releases-second-quarter-production-results.>)

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TABLE 1  
U.S. SALIENT MOLYBDENUM CONCENTRATE  
STATISTICS<sup>1,2</sup>

(Metric tons, contained molybdenum)

Period	Production	Shipments <sup>3,4</sup>
2020:		
January	4,530	4,500
February	4,220	4,240
March	4,470	4,470
April	3,870	3,870
May	3,890	3,900
June	3,820	3,820
July	4,390	4,390
August	4,350	4,330
September	4,190	4,210
October	4,520	4,500
November	4,310	4,330
December	4,490	4,500
January–December	51,100	51,100
2021:		
January	4,350	4,320
February	3,920	3,910
March	4,450	4,470
April	3,010	3,020
May	3,050	2,970
June	3,000	3,030
July	3,020	2,960
January–July	24,800	24,700

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

<sup>2</sup>Includes data from Freeport-McMoRan Inc., 2020–2021. Adjusted by USGS to reflect estimated monthly data.

<sup>3</sup>As reported by producers.

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

TABLE 2  
U.S. 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
2021:						
June:						
Steel:						
Carbon	W	W	--	--	--	--
High-strength low-alloy	W	9,540	--	--	--	9,540
Stainless and heat-resisting	154,000	47,700	--	(3)	W	201,000
Full alloy	246,000	76,600	--	--	W	322,000
Tool	W	W	--	--	--	W
Total	399,000	134,000	--	(3)	W	533,000
Cast irons (gray, malleable, and ductile iron)	--	W	--	--	--	W
Superalloys	--	--	--	(3)	63,300	63,300
Alloys: (other than steels, cast irons, and superalloys)						
Other alloys	W	W	--	--	--	W
Mill products made from metal powder <sup>4</sup>	--	--	--	--	W	W
Cemented carbides and related products <sup>5</sup>	--	--	--	--	W	W
Chemical and ceramic uses:						
Pigments	--	--	(3)	--	--	(3)
Catalysts	W	--	(3)	--	W	W
Miscellaneous and unspecified uses:						
Lubricants	--	--	--	--	9,440	9,440
Other	163,000	94,700	W	(3)	325,000	583,000
Grand total	562,000	229,000	W	(3)	398,000	1,190,000
Stocks, June 30, 2021	494,000	364,000	2,780	(6)	(6)	1,740,000
July:						
Steel:						
Carbon	W	W	--	--	--	--
High-strength low-alloy	W	9,540	--	--	--	9,540
Stainless and heat-resisting	154,000	47,700	--	(3)	W	201,000
Full alloy	246,000	76,600	--	--	W	322,000
Tool	W	W	--	--	--	W
Total	399,000	134,000	--	(3)	W	533,000
Cast irons (gray, malleable, and ductile iron)	--	W	--	--	--	W
Superalloys	--	--	--	(3)	63,300	63,300
Alloys: (other than steels, cast irons, and superalloys)						
Other alloys	W	W	--	--	--	W
Mill products made from metal powder <sup>4</sup>	--	--	--	--	W	W
Cemented carbides and related products <sup>5</sup>	--	--	--	--	W	W
Chemical and ceramic uses:						
Pigments	--	--	(3)	--	--	(3)
Catalysts	W	--	(3)	--	W	W
Miscellaneous and unspecified uses:						
Lubricants	--	--	--	--	9,440	9,440
Other	157,000	86,600	W	(3)	325,000	569,000
Grand total	556,000	220,000	W	(3)	398,000	1,170,000
Stocks, July 31, 2021	489,000	378,000	2,780	(6)	(6)	1,750,000

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

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown. Includes U.S. Geological Survey estimates.

<sup>2</sup>Includes calcium molybdate.

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

<sup>4</sup>Includes ingot, wire, rod, and sheet.

<sup>5</sup>Includes construction, mining, oil and gas, and metalworking machinery.

<sup>6</sup>Withheld to avoid disclosing company proprietary data; included in "Total."

TABLE 3  
U.S. EXPORTS OF MOLYBDENUM ORES AND CONCENTRATES  
(including roasted concentrate), BY COUNTRY OR LOCALITY<sup>1</sup>

(Kilograms, contained molybdenum)

Country or locality	2020			2021		
	January– December	July	January– July	June	July	January– July
Belgium	8,880,000	669,000 <sup>r</sup>	5,200,000 <sup>r</sup>	453,000	170,000	4,730,000
Brazil	19,400	--	1,420 <sup>r</sup>	33,600	3,800	103,000
Cambodia	1,440	--	1,440	--	--	21,000
Canada	1,130,000	78,500	700,000	140,000	36,700	553,000
Chile	1,810,000	252,000	484,000	89,900	187,000	921,000
China	3,680,000	83,300	994,000 <sup>r</sup>	122,000	--	1,460,000
Estonia	305,000	--	305,000	--	--	--
Germany	285	--	285	--	--	--
India	900,000	63,800	259,000 <sup>r</sup>	44,900	72,000	664,000
Japan	2,980,000	244,000 <sup>r</sup>	2,000,000 <sup>r</sup>	402,000	548,000	2,490,000
Korea, Republic of	4,600,000	366,000 <sup>r</sup>	2,860,000 <sup>r</sup>	122,000	85,800	1,060,000
Lithuania	--	--	--	--	--	1,900
Mexico	4,220,000	384,000	2,280,000 <sup>r</sup>	9,130	108,000	2,770,000
Netherlands	24,500,000	2,880,000	14,600,000	3,300,000	1,360,000	17,100,000
South Africa	300	--	--	2,250	--	3,360
Thailand	722,000	2,430	722,000 <sup>r</sup>	--	--	--
Turkey	1,400	--	986	--	--	--
United Kingdom	5,100,000	36,100	2,650,000	742,000	1,020,000	5,150,000
Vietnam	381,000	8,610	195,000	28,400	46,400	156,000
Total	59,300,000	5,070,000 <sup>r</sup>	33,200,000 <sup>r</sup>	5,490,000	3,640,000	37,100,000

<sup>r</sup>Revised. -- 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 4  
U.S. EXPORTS OF FERROMOLYBDENUM, BY COUNTRY OR LOCALITY<sup>1</sup>

(Kilograms, contained molybdenum)

Country or locality	2020			2021		
	January– December	July	January– July	June	July	January– July
Australia	1,070	--	697	--	--	1,320
Canada	381,000	21,100	227,000	11,000	16,500	132,000
Denmark	948	--	948	--	440	914
Mexico	170,000	--	131,000	69,100	269	198,000
Total	554,000	21,100	360,000	80,100	17,200	332,000

-- 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. IMPORTS FOR CONSUMPTION OF MOLYBDENUM PRODUCTS<sup>1</sup>

(Kilograms, unless otherwise specified)

Material	January–December 2020			2021					
	Gross weight	Contained molybdenum	Value <sup>2</sup> (thousands)	July			January–July		
				Gross weight	Contained molybdenum	Value <sup>2</sup> (thousands)	Gross weight	Contained molybdenum	Value <sup>2</sup> (thousands)
Ore and concentrates, roasted	7,310,000	4,490,000	\$81,900	371,000	230,000	\$8,480	3,560,000	2,230,000	\$54,100
Ore and concentrates, other	22,300,000	10,600,000	210,000	2,320,000	1,120,000	31,500	13,700,000	6,770,000	151,000
Molybdenum chemicals:									
Oxides and hydroxides	3,450,000	NA	54,100	260,000	NA	5,870	2,320,000	NA	44,500
Molybdates of ammonium	947,000	533,000	12,900	156,000	88,100	2,840	935,000	527,000	15,300
Molybdates (all others)	109,000	44,500	1,120	250	99	10	45,700	18,100	546
Molybdenum orange	138,000	NA	1,270	14,600	NA	127	60,400	NA	476
Ferromolybdenum	6,820,000	4,630,000	99,400	599,000	403,000	15,100	6,940,000	4,760,000	126,000
Molybdenum powders	211,000	191,000	7,160	16,100	15,900	812	113,000	105,000	4,200
Molybdenum unwrought	415,000	413,000	11,900	33,700	33,700	1,240	311,000	310,000	9,470
Molybdenum waste and scrap	1,130,000	1,100,000	31,000	1,020	167,000	5,580	1,000,000	948,000	27,700
Molybdenum wire	16,400	NA	1,610	21,400	NA	148	9,860	NA	1,140
Molybdenum other	174,000	NA	14,800	173,000	NA	2,230	110,000	NA	10,200
Total	43,100,000	XX	527,000	3,970,000	XX	73,900	29,100,000	XX	445,000

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.