

Mineral Industry Surveys

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MOLYBDENUM IN MAY 2021

Domestic production of molybdenum in concentrate in May 2021 was slightly less compared with the output of the previous month and 22% less compared with that of May 2020 (fig. 1, table 1).

Domestic production of molybdenum in concentrate in the first quarter of 2021 was 9% less than the fourth quarter of 2020 and 7% less than the first quarter of 2020. One of the main reasons for the decrease in molybdenum in concentrate production was owing to the 22% decrease in production at Rio Tinto Kennecott's Bingham Canyon Mine in the first quarter of 2021 compared with production in the fourth quarter of 2020. The company attributed the decrease to lower ore grades (Rio Tinto plc, 2021, p. 24).

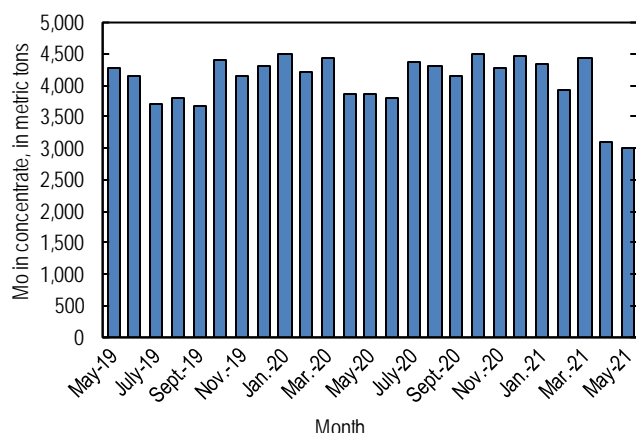


Figure 1. Monthly domestic production of molybdenum (Mo) in concentrate from May 2019 through May 2021 (may include revisions to previously published data).

According to CRU Group (2021), the May 2021 monthly average price range for U.S. ferromolybdenum (FeMo) was \$13.563 to \$14.563 per pound of molybdenum content compared with \$13.000 to \$14.000 per pound of molybdenum content in April 2021. FeMo monthly average prices in Europe ranged from \$31.194 to \$31.838 per kilogram (\$14.149 to

\$14.441 per pound) of molybdenum content in May 2021 compared with \$26.717 to \$27.567 per kilogram (\$12.119 to \$12.504 per pound) in April 2021. U.S. molybdic oxide (MoO_3) prices ranged from \$12.281 to \$12.988 per pound of molybdenum content in May 2021 compared with \$12.000 to \$12.700 per pound of molybdenum content in April 2021 (fig. 2).

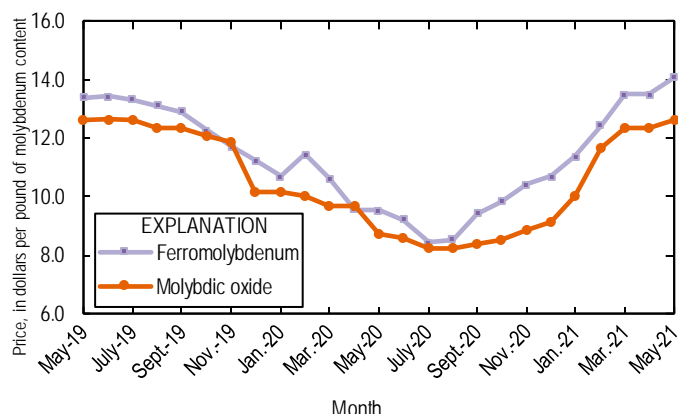


Figure 2. Average monthly prices for U.S. ferromolybdenum and molybdic oxide from May 2019 through May 2021. Source: CRU Group.

References Cited

CRU Group, 2021, Molybdenum prices: London, United Kingdom, CRU Group, August 2. (Accessed August 4, 2021, via <http://www.crugroup.com/>.)
Rio Tinto plc, Rio Tinto releases first quarter production results: London, United Kingdom, Rio Tinto plc, April 20, 27 p. (Accessed August 9, 2021, at <https://www.riotinto.com/-/media/Content/Documents/Invest/Financial-news-and-performance/Production/RT-First-Quarter-Operations-Review-2021-pdf.pdf?rev=462fbad926484549a0e0b7d269e94dad>.)

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

(Metric tons, contained molybdenum)

Period	Production	Shipments ^{3,4}
2020:		
January	4,510	4,480
February	4,200	4,220
March	4,440	4,440
April	3,850	3,840
May	3,870	3,880
June	3,800	3,800
July	4,360	4,360
August	4,320	4,300
September	4,160	4,190
October	4,490	4,480
November	4,290	4,300
December	4,470	4,480
January–December	50,800	50,800
2021:		
January	4,350	4,320
February	3,920	3,910
March	4,450	4,470
April	3,100 ^r	3,100
May	3,010	2,960
January–May	18,800	18,800

^rRevised.

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

²Includes data from Freeport-McMoRan Inc., 2020–2021. 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. CONSUMPTION, BY END USES, AND CONSUMER STOCKS OF MOLYBDENUM MATERIALS¹

(Kilograms, contained molybdenum)

End use	Molybdc oxides	Ferro molyb- denum ²	Ammonium and sodium molybdate	Molyb- denum scrap	Other	Total
2021:						
April:						
Steel:						
Carbon	W	W	--	--	--	W
High-strength low-alloy	W	9,540 ^r	--	--	--	9,540 ^r
Stainless and heat-resisting	154,000 ^r	47,700 ^r	--	(3)	W	201,000 ^r
Full alloy	246,000 ^r	76,600 ^r	--	--	W	322,000 ^r
Tool	W	W	--	--	--	W
Total	399,000 ^r	134,000 ^r	--	(3)	W	533,000 ^r
Cast irons (gray, malleable, and ductile iron)	--	W	--	--	--	W
Superalloys	--	--	--	(3)	63,300 ^r	63,300 ^r
Alloys: (other than steels, cast irons, and superalloys)						
Other alloys	W	W	--	--	--	W
Mill products made from metal powder ⁴	--	--	--	--	W	W
Cemented carbides and related products ⁵	--	--	--	--	W	W
Chemical and ceramic uses:						
Pigments	--	--	(3)	--	--	(3)
Catalysts	W	--	(3)	--	W	W
Miscellaneous and unspecified uses:						
Lubricants	--	--	--	--	9,440 ^r	9,440 ^r
Other	169,000 ^r	97,500 ^r	W	(3)	325,000 ^r	592,000 ^r
Grand total	568,000 ^r	231,000 ^r	W	(3)	398,000 ^r	1,200,000 ^r
Stocks, April 30, 2021	500,000 ^r	369,000 ^r	2,790 ^r	(6)	(6)	1,750,000 ^r
May:						
Steel:						
Carbon	36,000	W	--	--	--	36,000
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	435,000	134,000	--	(3)	W	569,000
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 ⁴	--	--	--	--	W	W
Cemented carbides and related products ⁵	--	--	--	--	W	W
Chemical and ceramic uses:						
Pigments	--	--	(3)	--	--	(3)
Catalysts	W	--	(3)	--	W	W
Miscellaneous and unspecified uses:						
Lubricants	--	--	--	--	9,440	9,440
Other	100,000	86,600	W	(3)	325,000	512,000
Grand total	536,000	220,000	W	(3)	398,000	1,150,000
Stocks, May 31, 2021	504,000	382,000	2,790	(6)	(6)	1,770,000

^rRevised. 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. Includes U.S. Geological Survey estimates.

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, and 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 COUNTRY OR LOCALITY¹

(Kilograms, contained molybdenum)

Country or locality	2020			2021		
	January– December	May	January– May	April	May	January– May
Belgium	8,880,000	609,000	3,790,000	489,000	1,050,000	4,100,000
Brazil	19,400	--	1,420 ^r	15,600	11,400	65,500
Cambodia	1,440	--	1,440	--	--	21,000
Canada	1,130,000	56,400	560,000	79,100	81,900	376,000
Chile	1,810,000	142,000	232,000	119,000	258,000	643,000
China	3,680,000	468,000	894,000 ^r	138,000	326,000	1,330,000
Estonia	305,000	--	305,000	--	--	--
Germany	285	--	285	--	--	--
India	900,000	448	150,000 ^r	187,000	58,600	548,000
Japan	2,980,000	218,000	1,480,000 ^r	102,000	570,000	1,540,000
Korea, Republic of	4,600,000	281,000	2,090,000 ^r	78,500	272,000	851,000
Lithuania	--	--	--	--	1,900	1,900
Mexico	4,220,000	106,000	1,570,000	270,000	68,000	2,650,000
Netherlands	24,500,000	1,600,000 ^r	10,300,000	1,500,000	3,170,000	12,400,000
South Africa	300	--	--	--	--	1,110
Thailand	722,000	38,800 ^r	612,000 ^r	--	--	--
Turkey	1,400	623	986	--	--	--
United Kingdom	5,100,000	72,400	2,600,000	507,000	579,000	3,390,000
Vietnam	381,000	76,600	170,000	11,700	11,800	80,800
Total	59,300,000	3,670,000 ^r	24,700,000 ^r	3,490,000	6,460,000	28,000,000

^rRevised. -- 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 COUNTRY OR LOCALITY¹

(Kilograms, contained molybdenum)

Country or locality	2020			2021		
	January– December	May	January– May	April	May	January– May
Australia	1,070	--	697	--	--	1,320
Canada	381,000	40,400	174,000	27,900	30,900	104,000
Denmark	948	--	474	--	--	474
Mexico	170,000	--	122,000	5,230	87,900	128,000
Total	554,000	40,400	297,000	33,100	119,000	234,000

-- 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	January–December 2020			2021					
	Gross weight	Contained molybdenum	Value ² (thousands)	May			January–May		
				Gross weight	Contained molybdenum	Value ² (thousands)	Gross weight	Contained molybdenum	Value ² (thousands)
Ore and concentrates, roasted	7,310,000	4,490,000	\$81,900	531,000	326,000	\$7,330	2,660,000	1,670,000	\$35,800
Ore and concentrates, other	22,300,000	10,600,000	210,000	1,940,000	965,000	22,300	10,100,000	5,050,000	105,000
Molybdenum chemicals:									
Oxides and hydroxides	3,450,000	NA	54,100	505,000	NA	9,640	1,710,000	NA	31,600
Molybdates of ammonium	947,000	533,000	12,900	100,000	56,600	1,710	665,000	375,000	10,500
Molybdates (all others)	109,000	44,500	1,120	50	20	2	37,300	14,800	389
Molybdenum orange	138,000	NA	1,270	20,600	NA	153	42,800	NA	329
Ferromolybdenum	6,820,000	4,630,000	99,400	890,000	599,000	16,500	5,230,000	3,600,000	90,100
Molybdenum powders	211,000	191,000	7,160	8,290	7,720	322	57,300	53,400	1,920
Molybdenum unwrought	415,000	413,000	11,900	74,500	74,400	1,970	208,000	207,000	6,030
Molybdenum waste and scrap	1,130,000	1,100,000	31,000	155,000	148,000	4,080	639,000	611,000	16,300
Molybdenum wire	16,400	NA	1,610	2,660	NA	202	7,730	NA	883
Molybdenum other	174,000	NA	14,800	14,500	NA	1,390	69,900	NA	6,360
Total	43,100,000	XX	527,000	4,240,000	XX	65,600	21,500,000	XX	305,000

NA Not available. XX Not applicable.

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

²Customs value.

Source: U.S. Census Bureau.