

Mineral Industry Surveys

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MOLYBDENUM IN AUGUST 2021

Domestic production of molybdenum in concentrate in August 2021 was slightly less compared with the output of the previous month and 29% less compared with that of August 2020. Domestic production of molybdenum in concentrate in January through August 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 and mill throughput (Rio Tinto plc, 2021, p. 25).

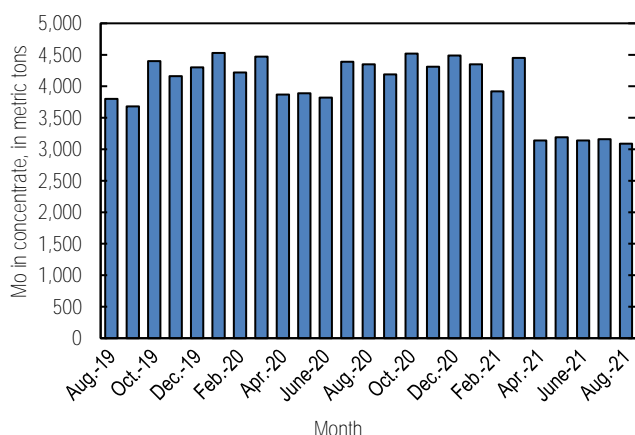


Figure 1. Monthly domestic production of molybdenum (Mo) in concentrate from August 2019 through August 2021 (may include revisions to previously published data).

According to CRU Group (2021), the July and August 2021 monthly average price range for U.S. ferromolybdenum (FeMo) was \$20.000 to \$20.900 per pound of molybdenum content. 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 \$45.489 to \$46.167 per kilogram (\$20.633 to \$20.941 per pound) of

molybdenum content in August 2021 compared with \$43.361 to \$44.678 per kilogram (\$19.668 to \$20.266 per pound) in July 2021. U.S. molybdic oxide (MoO_3) prices ranged from \$18.833 to \$20.167 per pound of molybdenum content in August 2021 compared with \$18.500 to \$20.000 per pound of molybdenum content in July 2021 (fig. 2).

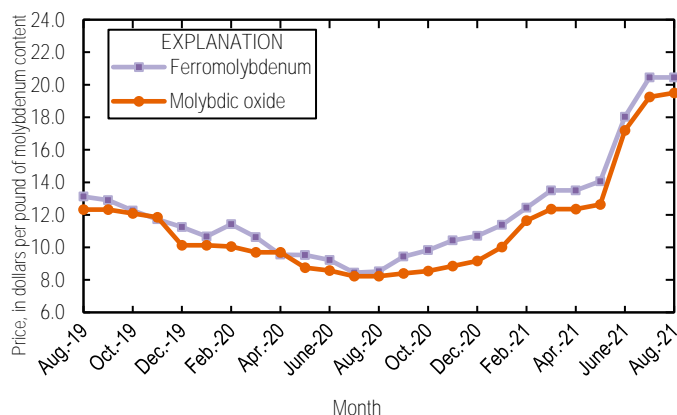


Figure 2. Average monthly prices for U.S. ferromolybdenum and molybdic oxide from August 2019 through August 2021. Source: CRU Group.

References Cited

- CRU Group, 2021, Molybdenum prices: London, United Kingdom, CRU Group, August 2. (Accessed October 22, 2021, via <http://www.crugroup.com/>.)
- Rio Tinto plc, 2021, Rio Tinto releases second quarter production results: London, United Kingdom, Rio Tinto plc, July 16, 28 p. (Accessed October 22, 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^{1,2}

(Metric tons, contained molybdenum)

Period	Production	Shipments ^{3,4}
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	3,140 ^r	3,150 ^r
May	3,190 ^r	3,110 ^r
June	3,140 ^r	3,170 ^r
July	3,160 ^r	3,090 ^r
August	3,090	3,180
January–August	28,400	28,400

^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:						
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 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	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
August:						
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 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	167,000	89,300	W	(3)	325,000	582,000
Grand total	566,000	223,000	W	(3)	398,000	1,190,000
Stocks, August 31, 2021	484,000	388,000	2,780	(6)	(6)	1,760,000

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. 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	August	January– August	July	August	January– August
Belgium	8,880,000	956,000	6,150,000 ^r	170,000	174,000	4,900,000
Brazil	19,400	4,550	5,970 ^r	3,800	10,800	114,000
Cambodia	1,440	--	1,440	--	--	21,000
Canada	1,130,000	66,200	766,000 ^r	36,700	55,600	608,000
Chile	1,810,000	89,000 ^r	573,000 ^r	187,000	87,200	1,010,000
China	3,680,000	781,000 ^r	1,770,000 ^r	--	57,600	1,510,000
Estonia	305,000	--	305,000	--	--	--
Germany	285	--	285	--	--	--
India	900,000	53,200	312,000 ^r	72,000	40,600	705,000
Japan	2,980,000	210,000	2,210,000 ^r	548,000	274,000	2,770,000
Korea, Republic of	4,600,000	230,000 ^r	3,090,000 ^r	85,800	84,100	1,140,000
Lithuania	--	--	--	--	--	1,900
Mexico	4,220,000	324,000	2,610,000 ^r	108,000	108,000	2,880,000
Netherlands	24,500,000	2,240,000 ^r	16,800,000 ^r	1,360,000	2,390,000	19,400,000
South Africa	300	--	--	--	450	3,810
Thailand	722,000	--	722,000 ^r	--	--	--
Turkey	1,400	--	986	--	--	--
United Kingdom	5,100,000	544,000	3,200,000	1,020,000	762,000	5,910,000
Vietnam	381,000	42,800	238,000	46,400	4,830	160,000
Total	59,300,000	5,540,000 ^r	38,800,000 ^r	3,640,000	4,050,000	41,200,000

^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	August	January– August	July	August	January– August
Australia	1,070	--	697	--	697	2,010
Canada	381,000	12,200	239,000	16,500	7,550	139,000
Denmark	948	--	948	440	--	914
Mexico	170,000	--	131,000	269	44,100	242,000
Total	554,000	12,200	372,000	17,200	52,300	384,000

-- 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)	August			January–August		
				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	319,000	198,000	\$6,810	3,880,000	2,420,000	\$60,900
Ore and concentrates, other	22,300,000	10,600,000	210,000	1,750,000	828,000	28,600	15,400,000	7,600,000	180,000
Molybdenum chemicals:									
Oxides and hydroxides	3,450,000	NA	54,100	228,000	NA	6,790	2,540,000	NA	51,300
Molybdates of ammonium	947,000	533,000	12,900	145,000	81,700	3,510	1,080,000	609,000	18,800
Molybdates (all others)	109,000	44,500	1,120	18,400	7,310	246	64,100	25,400	792
Molybdenum orange	138,000	NA	1,270	15,000	NA	133	75,400	NA	609
Ferromolybdenum	6,820,000	4,630,000	99,400	780,000	521,000	20,900	7,720,000	5,280,000	147,000
Molybdenum powders	211,000	191,000	7,160	26,800	22,100	1,430	140,000	127,000	5,630
Molybdenum unwrought	415,000	413,000	11,900	17,100	17,000	602	328,000	327,000	10,100
Molybdenum waste and scrap	1,130,000	1,100,000	31,000	190,000	189,000	6,430	1,190,000	1,140,000	34,100
Molybdenum wire	16,400	NA	1,610	1,180	NA	149	11,000	NA	1,290
Molybdenum other	174,000	NA	14,800	12,700	NA	1,560	123,000	NA	11,700
Total	43,100,000	XX	527,000	3,500,000	XX	77,100	32,600,000	XX	522,000

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.