

Mineral Industry Surveys

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MOLYBDENUM IN OCTOBER 2020

Domestic production of molybdenum in concentrate in October 2020 was essentially unchanged compared with the previous month and was slightly more than that of October 2019. Total production during the first 10 months of 2020 was 28% more than total production during the same period in 2019 (fig. 1, table 1). Rio Tinto plc (United Kingdom) reported a 141% increase of molybdenum concentrate production at its Bingham Canyon Mine in the third quarter of 2020 [5,100 metric tons (t)] compared with that in the third quarter of 2019 (2,100 t) (Rio Tinto plc, 2020, p. 14).

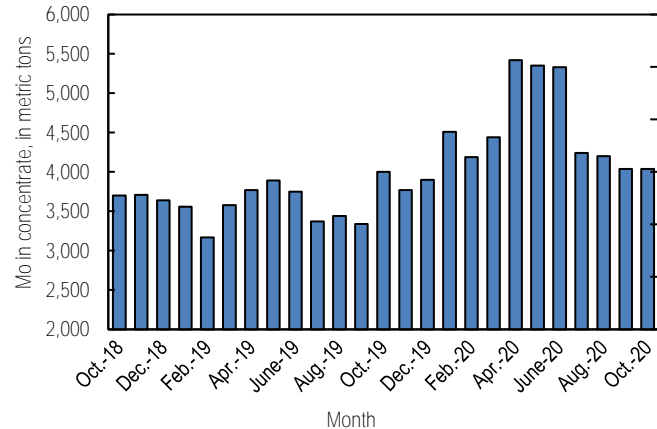


Figure 1. Monthly domestic production of molybdenum (Mo) in concentrate from October 2018 through October 2020 (may include revisions to previously published data).

According to CRU Group (2020), the October 2020 monthly average price range for U.S. ferromolybdenum (FeMo) was \$9.656 to \$10.000 per pound of molybdenum content, compared with \$9.167 to \$9.700 per pound in September 2020. FeMo monthly averages in Europe ranged from \$21.289 to \$21.867 per kilogram (\$9.657 to \$9.919 per pound) of molybdenum content in October 2020 compared with \$19.817 to \$20.311 per kilogram (\$8.989 to \$9.213 per pound) in September 2020. U.S.

molybdenum oxide (MoO₃) prices ranged from \$8.433 to \$8.650 per pound of molybdenum content in October 2020 compared with \$8.250 to \$8.533 per pound in September 2020 (fig. 2).

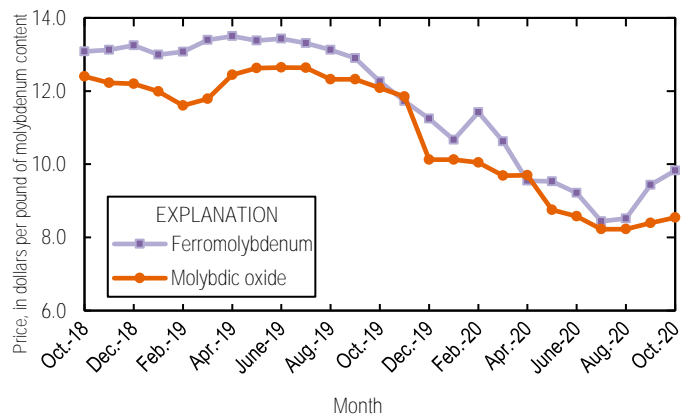


Figure 2. Average monthly prices for U.S. ferromolybdenum and molybdenic oxide from October 2018 through October 2020. Source: CRU Group.

Reference Cited

CRU Group, 2020, Molybdenum prices: London, United Kingdom, CRU Group, November 2. (Accessed January 7, 2021, via <http://www.crugroup.com/>)
 Rio Tinto plc, 2020, Rio Tinto releases third quarter production results: London, United Kingdom, Rio Tinto plc, October 16. (Accessed January 11, 2021, at <https://www.riotinto.com/-/media/Content/Documents/Invest/Financial-news-and-performance/Production/RT-Third-Quarter-Operations-Review-2020-pdf.pdf>.)

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

(Metric tons, contained molybdenum)

Period	Production	Shipments ^{3,4}
2019:		
January	3,560	3,560
February	3,170	3,140
March	3,580	3,630
April	3,770	3,750
May	3,890	3,890
June	3,750	3,750
July	3,370	3,370
August	3,440	3,440
September	3,340	3,330
October	4,000	4,010
November	3,770	3,780
December	3,900	3,920
January–December	43,600	43,600
2020:		
January	4,510	4,480
February	4,190	4,200
March	4,440	4,440
April	5,420	5,450
May	5,350	5,370
June	5,330	5,330
July	4,240	4,240
August	4,200	4,180
September	4,040	4,070
October	4,040	3,710
January–October	45,800	45,500

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

²Includes data from Freeport-McMoRan Inc., 2019–2020. 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 MATERIALS^{6,1}

(Kilograms, contained molybdenum)

End use	Molybdic oxides	Ferro molyb- denum ²	Ammonium and sodium molybdate	Molyb- denum scrap	Other	Total
2020:						
September:						
Steel:						
Carbon	W	W	--	--	--	W
High-strength low-alloy	W	9,550	--	--	--	9,550
Stainless and heat-resisting	152,000	48,500	--	(3)	W	201,000
Full alloy	246,000	76,600	--	--	W	322,000
Tool	W	W	--	--	--	W
Total	398,000	135,000	--	(3)	--	532,000
Cast irons (gray, malleable, and ductile iron)	--	W	--	--	--	W
Superalloys	--	--	--	(3)	62,700	62,700
Alloys: (other than steels, cast irons, and superalloys)						
Other alloys	180	W	--	--	--	180
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	--	--	--	--	9,500	9,500
Other	189,000	52,000	420	(3)	328,000	570,000
Grand total	587,000	187,000	420	(3)	400,000	1,170,000
Stocks, September 30, 2020	495,000	762,000	3,000	(6)	(6)	2,100,000
October:						
Steel:						
Carbon	W	W	--	--	--	W
High-strength low-alloy	W	9,620	--	--	--	9,620
Stainless and heat-resisting	152,000	47,400	--	(3)	W	199,000
Full alloy	244,000	77,900	--	--	W	322,000
Tool	W	W	--	--	--	W
Total	396,000	135,000	--	(3)	--	531,000
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	175	W	--	--	--	175
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	--	--	--	--	9,670	9,670
Other	190,000	50,600	415	(3)	327,000	568,000
Grand total	586,000	186,000	415	(3)	400,000	1,170,000
Stocks, October 31, 2020	493,000	762,000	2,980	(6)	(6)	2,100,000

⁶Estimated. 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	2019			2020		
	January– December	October	January– October	September	October	January– October
Belgium	6,630,000	840,000 ^r	5,390,000 ^r	990,000	989,000	8,340,000
Brazil	15,900	--	15,900	2,230	8,130	22,500
Cambodia	--	--	--	--	--	1,440
Canada	1,110,000	86,000	889,000 ^r	108,000	78,700	957,000
Chile	218,000	--	218,000	61,800	88,200	844,000
China	529,000	1,210	441,000 ^r	383,000	289,000	2,340,000
Colombia	339	--	339	--	--	--
Estonia	--	--	--	--	--	305,000
Germany	1,090	--	1,090	--	--	285
India	205,000	22,200	161,000	194,000	132,000	653,000
Japan	3,970,000	347,000	3,390,000 ^r	241,000	232,000	2,730,000
Korea, Republic of	3,030,000	207,000	2,260,000 ^r	448,000	167,000	3,910,000
Mexico	3,050,000	208,000 ^r	2,320,000	484,000	383,000	3,490,000
Netherlands	35,900,000	2,960,000	29,200,000	1,930,000	1,740,000	20,600,000
Sri Lanka	1,630	--	1,630	--	--	--
Taiwan	23,300	--	23,300	--	--	--
Thailand	1,380,000	104,000	797,000	--	--	714,000
Turkey	--	--	--	--	--	986
United Kingdom	7,550,000	757,000	6,790,000	469,000	997,000	4,660,000
Vietnam	434,000	41,300	324,000	34,900	31,200	304,000
Total	64,100,000	5,570,000 ^r	52,300,000 ^r	5,350,000	5,130,000	49,800,000

^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	2019			2020		
	January– December	October	January– October	September	October	January– October
Australia	1,610	--	1,610	--	376	1,070
Canada	243,000	22,800	195,000 ^r	41,200	41,000	321,000
China	1,210	--	1,210	--	--	--
Denmark	903	--	903	--	--	948
Mexico	306,000	21,100	304,000	19,300	--	150,000
United Kingdom	420	--	420	--	--	--
Total	552,000	43,900	502,000 ^r	60,500	41,300	474,000

^rRevised. -- Zero.

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

Source: U.S. Census Bureau.

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

(Kilograms, unless otherwise specified)

Material	January–December 2019			2020					
	Gross weight	Contained molybdenum	Value ² (thousands)	October			January–October		
				Gross weight	Contained molybdenum	Value ² (thousands)	Gross weight	Contained molybdenum	Value ² (thousands)
Ore and concentrates, roasted	6,490,000	4,050,000	\$89,800	580,000	357,000	\$6,210	6,130,000	3,750,000	\$68,400
Ore and concentrates, other	34,400,000	16,500,000	440,000	1,620,000	781,000	12,300	19,200,000	9,080,000	184,000
Molybdenum chemicals:									
Oxides and hydroxides	4,290,000	NA	89,300	41,000	NA	510	2,860,000	NA	44,800
Molybdates of ammonium	1,400,000	789,000	24,200	44,900	25,300	613	763,000	430,000	10,500
Molybdates (all others)	216,000	85,600	2,880	1,100	436	13	94,200	38,500	944
Molybdenum orange	234,000	NA	1,350	17,500	NA	185	115,000	NA	1,010
Ferromolybdenum	10,400,000	6,990,000	196,000	579,000	398,000	7,930	5,820,000	3,950,000	85,100
Molybdenum powders	238,000	221,000	8,520	850	550	51	199,000	181,000	6,640
Molybdenum unwrought	595,000	593,000	19,300	NA	NA	NA	382,000	380,000	11,100
Molybdenum waste and scrap	1,900,000	1,750,000	59,700	102,000	101,000	2,250	1,010,000	985,000	28,400
Molybdenum wire	18,400	NA	2,150	1,290	NA	83	14,300	NA	1,460
Molybdenum other	193,000	NA	18,300	11,800	NA	961	149,000	NA	12,900
Total	60,300,000	XX	951,000	3,000,000	XX	31,100	36,800,000	XX	455,000

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.