

Mineral Industry Surveys

For information, contact:

Désirée E. Polyak, Molybdenum Commodity Specialist
 National Minerals Information Center
 U.S. Geological Survey
 989 National Center
 Reston, VA 20192
 Telephone: (703) 648-4909, Fax: (703) 648-7757
 Email: dpolyak@usgs.gov

Raymond I. Eldridge III (Data)
 Telephone: (703) 648-7982
 Fax: (703) 648-7975
 Email: reldridge@usgs.gov

Internet: <https://www.usgs.gov/centers/nmic>

MOLYBDENUM IN SEPTEMBER 2020

Domestic production of molybdenum in concentrate in September 2020 was 4% less than that of the previous month but was 21% more than that of September 2019. Total production during the first 9 months of 2020 was 31% more than total production during the same period in 2019. This increase in production in 2020 was mainly the result of one byproduct mine in Utah increasing its production by more than 60% (fig. 1, table 1).

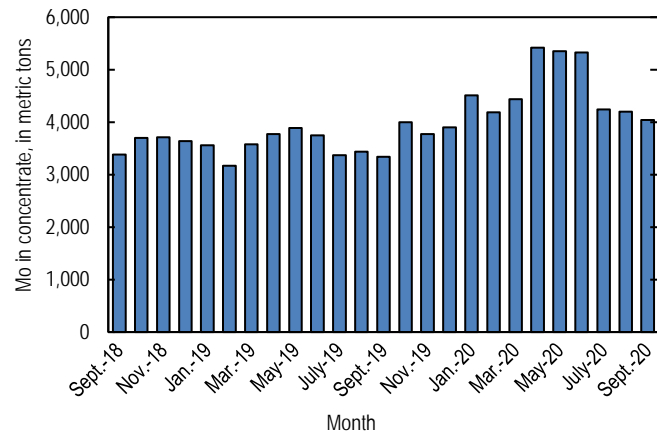


Figure 1. Monthly domestic production of molybdenum (Mo) in concentrate from September 2018 through September 2020 (may include revisions to previously published data).

According to CRU Group (2020), the September 2020 monthly average price range for U.S. ferromolybdenum (FeMo) was \$9.167 to \$9.700 per pound of molybdenum content, compared with \$8.275 to \$8.756 per pound in August 2020. FeMo monthly averages in Europe ranged from \$19.817 to \$20.311 per kilogram (\$8.989 to \$9.213 per pound) of molybdenum content in September 2020 compared with

\$17.950 to \$18.400 per kilogram (\$8.142 to \$8.346 per pound) in August 2020. U.S. molybdenum oxide (MoO₃) prices ranged from \$8.250 to \$8.533 per pound of molybdenum content in September 2020 compared with \$7.950 to \$8.500 per pound in August 2020 (fig. 2).

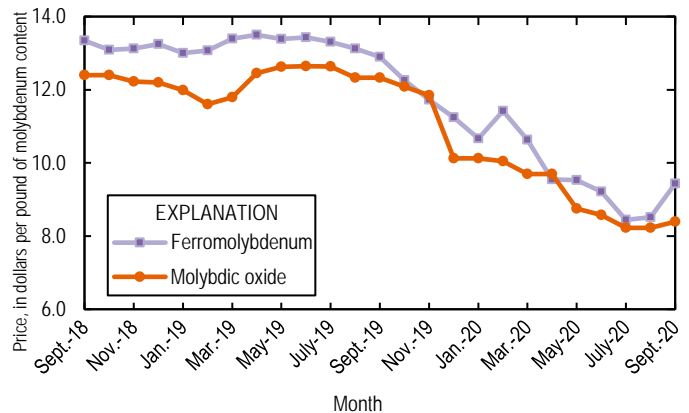


Figure 2. Average monthly prices for U.S. ferromolybdenum and molybdenic oxide from September 2018 through September 2020. Source: CRU Group.

Reference Cited

CRU Group, 2020, Molybdenum prices: London, United Kingdom, CRU Group, November 2. (Accessed December 11, 2020, 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}
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
January–September	41,700	41,800

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^{e, 1}

(Kilograms, contained molybdenum)

End use	Molybdc oxides	Ferro molyb- denum ²	Ammonium and sodium molybdate	Molyb- denum scrap	Other	Total
2020:						
August:						
Steel:						
Carbon	W	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)	--	533,000
Cast irons (gray, malleable, and ductile iron)	--	W	--	--	--	W
Superalloys	--	--	--	(3)	62,800	62,800
Alloys: (other than steels, cast irons, and superalloys)						
Other alloys	181	W	--	--	--	181
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	190,000	52,500	425	(3)	329,000	572,000
Grand total	590,000	186,000	425	(3)	401,000	1,180,000
Stocks, August 31, 2020	495,000	763,000	2,830	(6)	(6)	2,120,000
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	425	(3)	400,000	1,170,000
Stocks, September 30, 2020	495,000	762,000	3,000	(6)	(6)	2,100,000

^eEstimated. 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, 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	September	January– September	August	September	January– September
Belgium	6,630,000	480,000	4,550,000 ^r	956,000	990,000	7,350,000
Brazil	15,900	1,480	15,900	4,550	2,230	14,400
Cambodia	--	--	--	--	--	1,440
Canada	1,110,000	118,000 ^r	803,000 ^r	65,500	108,000	878,000
Chile	218,000	--	218,000	210,000	61,800	756,000
China	529,000	78,100	440,000 ^r	800,000	383,000	2,050,000
Colombia	339	--	339	--	--	--
Estonia	--	--	--	--	--	305,000
Germany	1,090	--	1,090	--	--	285
India	205,000	11,000	139,000	53,200	194,000	521,000
Japan	3,970,000	361,000 ^r	3,040,000 ^r	210,000	241,000	2,490,000
Korea, Republic of	3,030,000	206,000 ^r	2,060,000 ^r	207,000	448,000	3,740,000
Mexico	3,050,000	109,000	2,050,000	324,000	484,000	3,110,000
Netherlands	35,900,000	2,000,000	26,300,000	2,300,000	1,930,000	18,800,000
Sri Lanka	1,630	1,630	1,630	--	--	--
Taiwan	23,300	--	23,300	--	--	--
Thailand	1,380,000	528,000	692,000	--	--	714,000
Turkey	--	--	--	--	--	986
United Kingdom	7,550,000	1,040,000	6,030,000	544,000	469,000	3,660,000
Vietnam	434,000	21,700	283,000	42,800	34,900	273,000
Total	64,100,000	4,950,000 ^r	46,600,000 ^r	5,710,000	5,350,000	44,700,000

^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	September	January– September	August	September	January– September
Australia	1,610	--	1,610	--	--	697
Canada	243,000	12,900	172,000 ^r	12,200	41,200	281,000
China	1,210	--	1,210	--	--	--
Denmark	903	--	903	--	--	948
Mexico	306,000	60,000	282,000	--	19,300	150,000
United Kingdom	420	420	420	--	--	--
Total	552,000	73,300	459,000 ^r	12,200	60,500	433,000

^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)	September			January–September		
				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	559,000	342,000	\$5,860	5,550,000	3,390,000	\$62,200
Ore and concentrates, other	34,400,000	16,500,000	440,000	1,410,000	656,000	11,000	17,600,000	8,300,000	172,000
Molybdenum chemicals:									
Oxides and hydroxides	4,290,000	NA	89,300	324,000	NA	4,500	2,820,000	NA	44,200
Molybdates of ammonium	1,400,000	789,000	24,200	94,700	53,200	990	718,000	405,000	9,860
Molybdates (all others)	216,000	85,600	2,880	20,000	9,070	172	93,100	38,100	931
Molybdenum orange	234,000	NA	1,350	9,550	NA	38	97,100	NA	829
Ferromolybdenum	10,400,000	6,990,000	196,000	485,000	336,000	6,350	5,240,000	3,550,000	77,200
Molybdenum powders	238,000	221,000	8,520	10,400	8,120	311	198,000	181,000	6,590
Molybdenum unwrought	595,000	593,000	19,300	20,000	19,800	513	382,000	380,000	11,100
Molybdenum waste and scrap	1,900,000	1,750,000	59,700	34,300	32,800	936	911,000	884,000	26,200
Molybdenum wire	18,400	NA	2,150	896	NA	135	13,000	NA	1,380
Molybdenum other	193,000	NA	18,300	11,300	NA	948	138,000	NA	12,000
Total	60,300,000	XX	951,000	2,980,000	XX	31,800	33,800,000	XX	424,000

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.