

# 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 NOVEMBER 2019

Domestic production of molybdenum in concentrate in November 2019 was slightly less than the output of the previous month and 17% less than that of November 2018 (fig. 1, table 1).

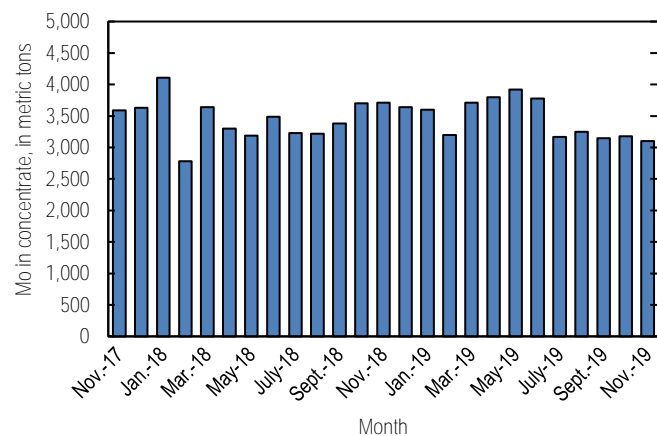


Figure 1. Monthly domestic production of molybdenum (Mo) in concentrate from November 2017 through November 2019 (may include revisions to previously published data).

According to CRU Group (2019), the November 2019 monthly average price range for U.S. ferromolybdenum (FeMo) was \$11.450 to \$12.000 per pound of molybdenum content, compared with \$11.965 to \$12.555 per pound in October 2019. FeMo monthly averages in Europe ranged from \$21.013 to \$22.000 per kilogram (\$9.531 to \$9.979 per pound) of molybdenum content in November 2019 compared with \$24.100 to \$25.125 per kilogram (\$10.932 to \$11.397 per pound) in October 2019. U.S. molybdenum oxide (MoO<sub>3</sub>) prices

ranged from \$11.550 to \$12.150 per pound of molybdenum content in November 2019 compared with \$11.850 to \$12.325 per pound in October 2019 (fig. 2).

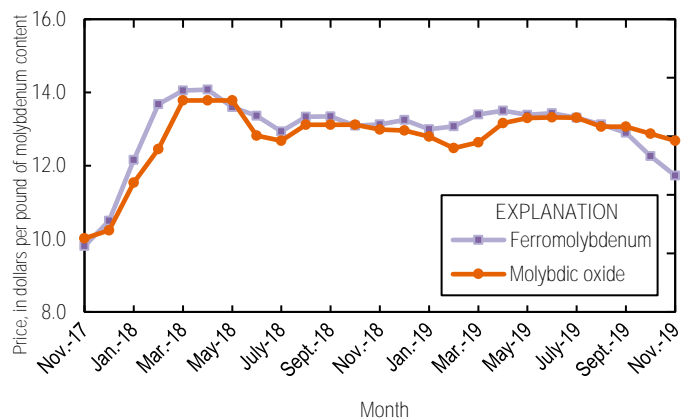


Figure 2. Average monthly prices for U.S. ferromolybdenum and molybdenic oxide from November 2017 through November 2019. Source: CRU Group.

**Reference Cited**

CRU Group, 2019, Molybdenum prices: CRU Group, December 2. (Accessed February 6, 2020, via <http://www.crugroup.com/>.)

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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>
2018:		
January	4,110 <sup>r</sup>	4,250
February	2,780 <sup>r</sup>	2,870
March	3,640 <sup>r</sup>	3,760
April	3,300 <sup>r</sup>	3,380
May	3,190 <sup>r</sup>	3,300
June	3,490 <sup>r</sup>	3,700
July	3,230 <sup>r</sup>	3,350
August	3,220 <sup>r</sup>	3,280
September	3,380 <sup>r</sup>	3,380
October	3,700 <sup>r</sup>	3,790
November	3,710 <sup>r</sup>	3,790
December	3,640 <sup>r</sup>	3,790
January–December	41,400 <sup>r</sup>	42,600
2019:		
January	3,600	3,590
February	3,200	3,170
March	3,710	3,750
April	3,800	3,800
May	3,920	3,930
June	3,780	3,790
July	3,170	3,170
August	3,250	3,240
September	3,150	3,140
October	3,180	3,190
November	3,100	3,100
January–November	37,900	37,900

<sup>r</sup>Revised.

<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 Copper & Gold Inc., 2018–2019. 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. REPORTED 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
2019:						
October:						
Steel:						
Carbon	W	W	--	--	--	W
High-strength low-alloy	W	14,400	--	--	--	14,400
Stainless and heat-resisting	160,000	49,400	--	(3)	W	210,000
Full alloy	246,000	76,600	--	--	W	322,000
Tool	W	W	--	--	--	W
Total	406,000	140,000	--	(3)	W	546,000
Cast irons (gray, malleable, and ductile iron)	--	W	--	--	--	W
Superalloys	--	W	--	(3)	65,700	65,700
Alloys: (other than steels, cast irons, and superalloys)						
Other alloys	275	W	--	--	--	275
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	197,000	61,600	425	(3)	334,000	592,000
Grand total	603,000	202,000	425	(3)	409,000	1,210,000
Stocks, October 31, 2019	511,000	276,000	2,760	(6)	(6)	1,680,000
November:						
Steel:						
Carbon	W	W	--	--	--	W
High-strength low-alloy	W	14,400	--	--	--	14,400
Stainless and heat-resisting	189,000	50,600	--	(3)	W	239,000
Full alloy	246,000	76,600	--	--	W	322,000
Tool	W	W	--	--	--	W
Total	435,000	142,000	--	(3)	W	576,000
Cast irons (gray, malleable, and ductile iron)	--	W	--	--	--	W
Superalloys	--	W	--	(3)	62,000	62,000
Alloys: (other than steels, cast irons, and superalloys)						
Other alloys	61	W	--	--	--	61
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	178,000	61,400	425	(3)	334,000	573,000
Grand total	612,000	203,000	425	(3)	405,000	1,220,000
Stocks, November 30, 2019	544,000	247,000	2,760	(6)	(6)	1,680,000

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, 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	2018			2019		
	January– December	November	January– November	October	November	January– November
Belgium	5,070,000	305,000	4,630,000 <sup>†</sup>	837,000	685,000	6,130,000
Brazil	27,400	--	27,400	--	--	15,900
Canada	1,390,000	92,400	1,290,000 <sup>†</sup>	86,000	77,200	973,000
Chile	1,410,000	212,000 <sup>†</sup>	1,140,000 <sup>†</sup>	--	--	218,000
China	1,030,000	18,000	1,010,000	1,210	55,800	501,000
Colombia	--	--	--	--	--	339
Germany	--	--	--	--	--	1,090
India	603,000	45,100	510,000	22,200	22,200	184,000
Israel	262	--	262	--	--	--
Japan	3,920,000	312,000	3,580,000 <sup>†</sup>	347,000	293,000	3,630,000
Korea, Republic of	538,000	34,100	466,000 <sup>†</sup>	207,000	328,000	2,680,000
Malaysia	227	--	227	--	--	--
Mexico	1,880,000	339,000	1,800,000	273,000	317,000	2,640,000
Netherlands	21,100,000	2,190,000 <sup>†</sup>	18,400,000	2,960,000	4,110,000	33,300,000
Russia	98,100	--	98,100	--	--	--
Sri Lanka	--	--	--	--	--	1,630
Sweden	123,000	60,000	123,000	--	--	--
Taiwan	--	--	--	--	--	23,300
Thailand	60,000	--	59,700 <sup>†</sup>	104,000	554,000	1,350,000
United Kingdom	6,710,000	414,000	6,260,000	757,000	--	6,790,000
Vietnam	848,000	8,520	779,000	41,300	88,600	413,000
Total	44,800,000	4,030,000 <sup>†</sup>	40,200,000 <sup>†</sup>	5,630,000	6,530,000	58,900,000

<sup>†</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	2018			2019		
	January– December	November	January– November	October	November	January– November
Australia	2,530	--	2,530	--	--	1,610
Canada	426,000	3,480	367,000	22,800	19,500	157,000
China	--	--	--	--	--	1,210
Colombia	225	--	225	--	--	--
Denmark	837	--	837	--	--	903
Israel	249	--	249	--	--	--
Mexico	513,000	2,000	513,000	21,100	--	304,000
United Kingdom	--	--	--	--	--	420
Total	943,000	5,480	884,000	43,900	19,500	465,000

-- 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 2018			2019					
	Gross weight	Contained molybdenum	Value <sup>2</sup> (thousands)	November			January–November		
				Gross weight	Contained molybdenum	Value <sup>2</sup> (thousands)	Gross weight	Contained molybdenum	Value <sup>2,3</sup> (thousands)
Ore and concentrates roasted	7,030,000	4,330,000	\$102,000	341,000	213,000	\$5,770	5,770,000	3,600,000	\$81,600
Ore and concentrates other	38,200,000	18,500,000	481,000	3,110,000	1,460,000	36,400	32,900,000	15,800,000	426,000
Molybdenum chemicals:									
Oxides and hydroxides	3,460,000	NA	69,500	144,000	NA	2,970	4,010,000	NA	84,400
Molybdates of ammonium	1,750,000	985,000	29,800	43,500	24,500	742	1,240,000	698,000	21,800
Molybdates (all others)	384,000	154,000	5,000	15,000	5,940	183	221,000	87,700	3,060
Molybdenum orange	683,000	NA	2,630	28,400	NA	126	229,000	NA	1,330
Ferromolybdenum	11,900,000	8,010,000	223,000	607,000	400,000	10,700	9,760,000	6,540,000	186,000
Molybdenum powders	410,000	386,000	15,000	14,200	13,600	173	223,000	206,000	7,990
Molybdenum unwrought	722,000	721,000	21,000	46,300	46,000	1,540	540,000	538,000	17,600
Molybdenum waste and scrap	1,700,000	1,580,000	48,900	116,000	108,000	3,630	1,740,000	1,600,000	55,100
Molybdenum wire	31,100	NA	3,030	1,150	NA	140	15,400	NA	1,820
Molybdenum other	177,000	NA	17,500	13,100	NA	1,270	177,000	NA	17,000
Total	66,400,000	XX	1,020,000	4,480,000	XX	63,600	56,900,000	XX	904,000

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.

<sup>3</sup>May include revisions to previous published data.

Source: U.S. Census Bureau.