

# Mineral Industry Surveys

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## MOLYBDENUM IN DECEMBER 2019

Domestic production of molybdenum in concentrate in December 2019 was 3% more than the output of the previous month and 10% more than that of December 2018 (fig. 1, table 1).

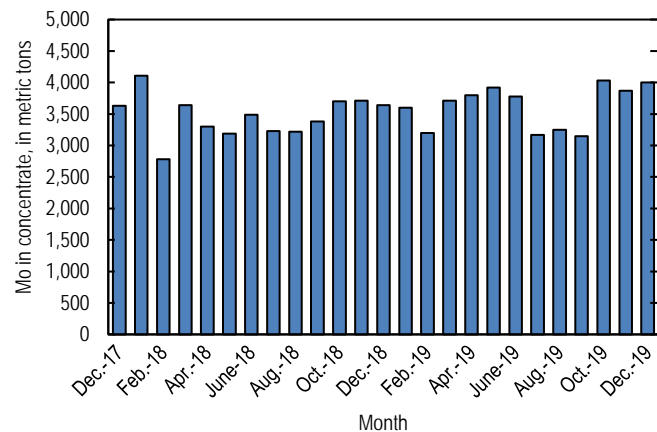


Figure 1. Monthly domestic production of molybdenum (Mo) in concentrate from December 2017 through December 2019 (may include revisions to previously published data).

According to CRU Group (2020), the December 2019 monthly average price range for U.S. ferromolybdenum (FeMo) was \$10.939 to \$11.556 per pound of molybdenum content, compared with \$11.450 to \$12.000 per pound in November 2019. FeMo monthly averages in Europe ranged from \$22.100 to \$22.900 per kilogram (\$10.024 to \$10.387 per pound) of molybdenum content in December 2019 compared with \$21.013 to \$22.000 per kilogram (\$9.531 to \$9.979 per pound) in November 2019. U.S. molybdenum oxide (MoO<sub>3</sub>) prices ranged

from \$9.750 to \$10.500 per pound of molybdenum content in December 2019 compared with \$11.550 to \$12.150 per pound in November 2019 (fig. 2).

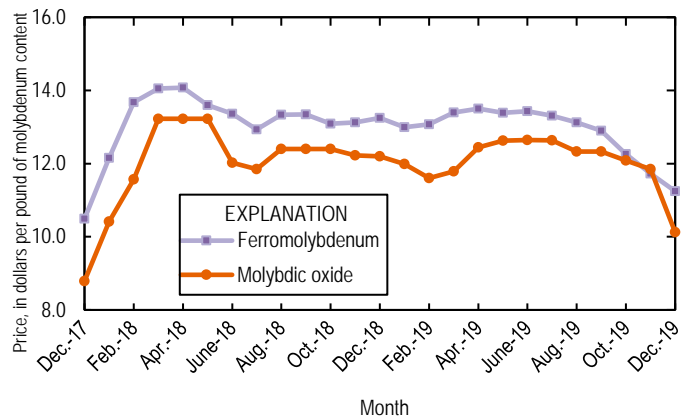


Figure 2. Average monthly prices for U.S. ferromolybdenum and molybdenic oxide from December 2017 through December 2019. Source: CRU Group.

**Reference Cited**

CRU Group, 2020, Molybdenum prices: CRU Group, February 28. (Accessed March 27, 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	4,250
February	2,780	2,870
March	3,640	3,760
April	3,300	3,380
May	3,190	3,300
June	3,490	3,700
July	3,230	3,350
August	3,220	3,280
September	3,380	3,380
October	3,700	3,790
November	3,710	3,790
December	3,640	3,790
January–December	41,400	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	4,030 <sup>r</sup>	4,050
November	3,870 <sup>r</sup>	3,870
December	4,000	4,010
January–December	43,500	43,500

<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:						
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	49,700 <sup>r</sup>	425	(3)	334,000	561,000 <sup>r</sup>
Grand total	612,000	191,000 <sup>r</sup>	425	(3)	405,000	1,210,000 <sup>r</sup>
Stocks, November 30, 2019	544,000	312,000 <sup>r</sup>	2,760	(6)	(6)	1,750,000 <sup>r</sup>
December:						
Steel:						
Carbon	W	W	--	--	--	W
High-strength low-alloy	W	14,400	--	--	--	14,400
Stainless and heat-resisting	196,000	49,300	--	(3)	W	245,000
Full alloy	246,000	76,600	--	--	W	322,000
Tool	W	W	--	--	--	W
Total	442,000	140,000	--	(3)	W	582,000
Cast irons (gray, malleable, and ductile iron)	--	W	--	--	--	W
Superalloys	--	W	--	(3)	62,200	62,200
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	213,000	52,800	425	(3)	334,000	600,000
Grand total	655,000	193,000	425	(3)	405,000	1,250,000
Stocks, December 31, 2019	523,000	317,000	2,750	(6)	(6)	1,680,000

<sup>r</sup>Revised.

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	December	November	December	January– December
Belgium	5,070,000	442,000	685,000	561,000	6,690,000
Brazil	27,400	--	--	--	15,900
Canada	1,390,000	94,400	77,200	144,000	1,120,000
Chile	1,410,000	268,000	--	--	218,000
China	1,030,000	21,700	55,800	31,700	533,000
Colombia	--	--	--	--	339
Germany	--	--	--	--	1,090
India	603,000	93,300	22,200	21,800	205,000
Israel	262	--	--	--	--
Japan	3,920,000	336,000	293,000	288,000	3,920,000
Korea, Republic of	538,000	71,800	328,000	438,000	3,120,000
Malaysia	227	--	--	--	--
Mexico	1,880,000	83,100	317,000	406,000	3,050,000
Netherlands	21,100,000	2,610,000	4,110,000	2,590,000	35,900,000
Russia	98,100	--	--	--	--
Sri Lanka	--	--	--	--	1,630
Sweden	123,000	--	--	--	--
Taiwan	--	--	--	--	23,300
Thailand	60,000	280	554,000	28,900	1,380,000
United Kingdom	6,710,000	452,000	--	757,000	7,550,000
Vietnam	848,000	68,600	88,600	21,000	434,000
Total	44,800,000	4,540,000	6,530,000	5,290,000	64,200,000

-- 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 4  
U.S. EXPORTS OF FERROMOLYBDENUM, BY COUNTRY OR LOCALITY<sup>1</sup>

(Kilograms, contained molybdenum)

Country or locality	2018		2019		
	January– December	December	November	December	January– December
Australia	2,530	--	--	--	1,610
Canada	426,000	59,100	19,500	28,400	185,000
China	--	--	--	--	1,210
Colombia	225	--	--	--	--
Denmark	837	--	--	--	903
Israel	249	--	--	--	--
Mexico	513,000	--	--	2,000	306,000
United Kingdom	--	--	--	--	420
Total	943,000	59,100	19,500	30,400	495,000

-- 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)	December			January–December		
				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	698,000	432,000	\$7,990	6,470,000	4,030,000	\$89,600
Ore and concentrates, other	38,200,000	18,500,000	481,000	1,420,000	642,000	14,400	34,400,000	16,400,000	440,000
Molybdenum chemicals:									
Oxides and hydroxides	3,460,000	NA	69,500	275,000	NA	4,910	4,290,000	NA	89,300
Molybdates of ammonium	1,750,000	985,000	29,800	160,000	90,700	2,310	1,400,000	789,000	24,200
Molybdates (all others)	384,000	154,000	5,000	NA	NA	NA	221,000	87,700	3,060
Molybdenum orange	683,000	NA	2,630	4,500	NA	21	234,000	NA	1,350
Ferromolybdenum	11,900,000	8,010,000	223,000	660,000	448,000	9,670	10,400,000	6,990,000	196,000
Molybdenum powders	410,000	386,000	15,000	15,100	14,900	525	238,000	221,000	8,520
Molybdenum unwrought	722,000	721,000	21,000	55,500	55,200	1,740	595,000	593,000	19,300
Molybdenum waste and scrap	1,700,000	1,580,000	48,900	150,000	141,000	4,440	1,890,000	1,740,000	59,500
Molybdenum wire	31,100	NA	3,030	3,000	NA	886	18,400	NA	2,150
Molybdenum other	177,000	NA	17,500	15,400	NA	1,300	193,000	NA	18,300
Total	66,400,000	XX	1,020,000	3,460,000	XX	48,100	60,300,000	XX	951,000

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.