

# Mineral Industry Surveys

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## MOLYBDENUM IN OCTOBER 2012

Domestic production of molybdenum (Mo) in concentrate in October 2012 was 3% more than the output of the previous month and about 10% more than that of October 2011. Producer stocks of molybdenum in concentrate, oxide, and other product forms were about 8,900 metric tons (t) at the beginning of 2012 and about 10,400 t at the end of October.

According to Ryan's Notes, the October monthly average price range for U.S. ferromolybdenum (FeMo) was \$12.956 to \$13.228 per pound of molybdenum content, compared with \$13.725 to \$13.963 per pound in September. European FeMo monthly averages ranged from \$26.944 to \$27.561 per kilogram (kg) of molybdenum content in October compared with \$29.900 to \$30.450 per kg in September. In October, worldwide molybdenum oxide (MoO<sub>3</sub>) prices ranged from \$10.867 to \$11.067 per pound compared with \$11.650 to \$11.950 per pound in September.

Molybdenum production at Kennecott Utah Copper's Bingham Canyon Mine decreased by 26% in the third quarter of 2012 to 2,500 t molybdenum in concentrate compared with

3,400 t in the third quarter of 2011. The company attributed the lower production rates to lower ore grades (Rio Tinto plc., 2012, p. 23).

Included in this Mineral Industry Surveys are U.S. production and shipments of molybdenum concentrates and materials, U.S. consumption by end use, and consumer stocks of molybdenum material in September and October 2012. Export data for September and October 2012 and import data for October 2012 are also included.

### Reference Cited

Rio Tinto plc., 2012, Third quarter 2012 operations review: London, United Kingdom, October 16, 27 p. (Accessed January 23, 2013, at [http://www.riotinto.com/documents/PR797g\\_Q3\\_2012\\_operations\\_review.pdf](http://www.riotinto.com/documents/PR797g_Q3_2012_operations_review.pdf).)

TABLE 1  
U.S. SALIENT MOLYBDENUM CONCENTRATE STATISTICS<sup>1</sup>

(Metric tons, contained molybdenum)

	2011		2012		
	January– December	January– October	September	October	January– October
Production	63,700	54,000	4,460 <sup>r</sup>	4,620	47,000
Shipments: <sup>2</sup>					
Domestic	W	15,600	1,400 <sup>r</sup>	1,520	14,900
Export	W	W	W	W	W

<sup>r</sup>Revised. W Withheld to avoid disclosing company proprietary data.

<sup>1</sup>Data are rounded to no more than three significant digits.

<sup>2</sup>As reported by producers.

TABLE 2  
U.S. REPORTED PRODUCTION AND SHIPMENTS OF MOLYBDENUM  
PRODUCTS<sup>1</sup>

(Metric tons, contained molybdenum)

	2011		2012		
	January– December	January– October	September	October	January– October
Gross production	W	W	W	W	58,100
Internal consumption <sup>2</sup>	W	W	W	W	W
Gross shipments	W	W	W	W	41,800

W Withheld to avoid disclosing company proprietary data.

<sup>1</sup>Data are rounded to no more than three significant digits.

<sup>2</sup>Includes molybdic oxides, metal powder, ammonium molybdate, sodium molybdate, and other.

TABLE 3  
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
2012:						
September:						
Steel:						
Carbon	33,500	W	--	--	W	33,500
High-strength low-alloy	W	7,320	--	--	--	7,320
Stainless and heat-resisting	169,000	57,900	--	(3)	6,510	234,000
Full alloy	244,000	249,000	--	--	W	492,000
Tool	W	W	--	--	--	W
Total	446,000	314,000	--	--	6,510	767,000
Cast irons (gray, malleable, and ductile iron)	W	W	--	--	W	W
Superalloys	(4)	(4)	--	(4)	103,000	103,000
Alloys: (other than steels, cast irons, and superalloys)						
Welding materials (structural and hard-facing)	--	W	--	--	W	W
Other alloys	151 <sup>†</sup>	W	--	--	--	151 <sup>†</sup>
Mill products made from metal powder <sup>5</sup>	W	--	--	--	W	W
Cemented carbides and related products <sup>6</sup>	--	--	--	--	W	W
Chemical and ceramic uses:						
Pigments	--	--	(3)	--	--	--
Catalysts	77,300	--	(3)	--	W	77,300
Other chemicals	--	--	--	--	--	--
Miscellaneous and unspecified uses:						
Lubricants	--	--	--	--	10,800	10,800
Other	94,000	53,100 <sup>†</sup>	(3)	--	290,000	437,000
Grand total	618,000 <sup>†</sup>	367,000	--	--	409,000	1,390,000 <sup>†</sup>
Stocks, September 30, 2012	398,000	306,000	2,020	(7)	(7)	1,600,000
October:						
Steel:						
Carbon	W	W	--	--	W	0
High-strength low-alloy	W	7,320	--	--	--	7,320
Stainless and heat-resisting	160,000	57,400	--	(3)	6,510	224,000
Full alloy	244,000	257,000	--	--	W	501,000
Tool	W	W	--	--	--	W
Total	404,000	321,000	--	--	6,510	732,000
Cast irons (gray, malleable, and ductile iron)	W	W	--	--	W	W
Superalloys	(4)	(4)	--	(4)	120,000	120,000
Alloys: (other than steels, cast irons, and superalloys)						
Welding materials (structural and hard-facing)	--	W	--	--	W	W
Other alloys	131	2,290	--	--	--	2,420
Mill products made from metal powder <sup>5</sup>	--	--	--	--	W	W
Cemented carbides and related products <sup>6</sup>	--	--	--	--	W	W
Chemical and ceramic uses:						
Pigments	--	--	(3)	--	--	--
Catalysts	77,300	--	(3)	--	W	77,300
Other chemicals	--	--	--	--	--	--
Miscellaneous and unspecified uses:						
Lubricants	--	--	--	--	10,800	10,800
Other	130,000	50,700	(3)	--	290,000	470,000
Grand total	611,000	375,000	--	--	426,000	1,410,000
Stocks, October 31, 2012	394,000	309,000	2,020	(7)	(7)	1,590,000

See footnote at end of table.

TABLE 3—Continued  
U.S. REPORTED CONSUMPTION, BY END USES, AND CONSUMER STOCKS OF MOLYBDENUM MATERIALS<sup>1</sup>

<sup>1</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.

<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>Withheld to avoid disclosing company proprietary data.

<sup>5</sup>Includes ingot, wire, rod, and sheet.

<sup>6</sup>Includes construction, mining, oil and gas, metalworking machinery.

<sup>7</sup>Withheld to avoid disclosing company proprietary data; included in "Total."

TABLE 4  
U.S. EXPORTS OF MOLYBDENUM ORES AND CONCENTRATES  
(including roasted concentrate), BY COUNTRY<sup>1</sup>

(Kilograms, contained molybdenum)

Country	2011			2012		
	January– December	October	January– October	September	October	January– October
Australia	800	--	800	--	--	--
Austria	278,000	--	267,000	11,200	11,200	132,000
Azerbaijan	9,370	9,370	9,370	--	--	--
Belgium	6,620,000	719,000	5,550,000	658,000	311,000	5,810,000
Brazil	374,000	7,640	342,000	93,000	18,900	378,000
Canada	1,400,000	37,500	1,190,000	125,000	90,500	1,960,000
Chile	3,220,000	--	3,220,000	--	--	--
China	2,570,000	112,000	2,230,000	144,000	92,300	1,820,000
Colombia	--	--	--	--	--	7,190
Czech Republic	31	31	31	--	--	--
El Salvador	881	--	881	--	--	--
Finland	283,000	11,400	248,000	--	--	--
France	121,000	--	121,000	--	--	--
Germany	133,000	--	120,000	11,300	54	47,900
Hungary	--	--	--	--	--	997
India	901,000	34,300	791,000	36,000	103,000	439,000
Italy	37,300	--	37,300	--	--	--
Japan	4,150,000	387,000	3,560,000	235,000	383,000	2,910,000
Korea, Republic of	1,460,000	70,900	1,340,000	30,300	47,100	371,000
Luxembourg	24,800	--	24,800	--	--	--
Mexico	7,270,000	473,000	6,030,000	638,000	737,000	6,690,000
Netherlands	11,500,000	1,330,000	9,540,000	1,150,000	1,220,000	10,700,000
Peru	--	--	--	--	181	905
Philippines	--	--	--	--	--	8,170
South Africa	--	--	--	--	190,000	382,000
Spain	330	--	330	--	--	--
Sweden	145,000	11,600	145,000	--	--	--
Taiwan	40,500	--	40,500	--	--	6,040
Thailand	7,260	--	7,260	--	--	29,900
United Arab Emirates	12,600	--	12,600	--	--	--
United Kingdom	6,210,000	491,000	5,280,000	678,000	415,000	4,640,000
Venezuela	838	--	838	--	--	--
Vietnam	301,000	1,200	279,000	2,290	4,730	17,900
Total	47,100,000	3,700,000	40,400,000	3,810,000	3,620,000	36,300,000

-- 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. EXPORTS OF FERROMOLYBDENUM, BY COUNTRY<sup>1</sup>

(Kilograms, contained molybdenum)

Country	2011			2012		
	January– December	October	January– October	September	October	January– October
Argentina	--	--	--	26,200	--	26,200
Australia	497	--	241	--	--	223
Brazil	--	--	--	--	528	528
Canada	871,000	76,300	766,000	38,900	14,400	567,000
Colombia	119	--	--	--	119	119
Denmark	501	171	501	--	--	323
Mexico	47,800	15,200	44,800	81,200	1,590	108,000
Netherlands	293,000	26,300	255,000	--	--	76,600
Saudi Arabia	--	--	--	--	26,400	26,400
Turkey	116,000	--	116,000	--	--	--
Total	1,330,000	118,000	1,180,000	146,000	43,100	805,000

-- 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 6  
U.S. IMPORTS FOR CONSUMPTION OF MOLYBDENUM PRODUCTS<sup>1</sup>

(Kilograms, unless otherwise specified)

Material	January–December 2011			2012					
	Gross weight	Contained molybdenum	Value <sup>2</sup> (thousands)	October			January–October		
				Gross weight	Contained molybdenum	Value <sup>2</sup> (thousands)	Gross weight	Contained molybdenum	Value <sup>2</sup> (thousands)
Ore and concentrates roasted	11,700,000	7,080,000	\$136,000	679,000	416,000	\$5,560	8,980,000	5,470,000	\$90,600
Ore and concentrates other	18,700,000	7,570,000	323,000	680,000	349,000	10,600	10,100,000	4,990,000	175,000
Molybdenum chemicals:									
Oxides and hydroxides	146,000	NA	3,820	50,100	NA	964	421,000	NA	8,430
Molybdates of ammonium	982,000	578,000	21,400	121,000	70,400	2,080	645,000	366,000	12,100
Molybdates (all others)	22,300	9,840	1,120	2,770	1,130	170	41,800	16,300	748
Molybdenum orange	328,000	NA	2,790	24,400	NA	238	326,000	NA	2,650
Ferromolybdenum	4,800,000	3,210,000	119,000	571,000	379,000	11,300	5,530,000	3,690,000	121,000
Molybdenum powders	281,000	264,000	13,600	28,400	26,000	1,220	344,000	301,000	14,200
Molybdenum unwrought	566,000	545,000	20,800	29,900	29,300	933	724,000	706,000	21,200
Molybdenum waste and scrap	748,000	700,000	27,400	101,000	99,900	3,070	832,000	791,000	27,000
Molybdenum wire	21,300	NA	3,230	1,390	NA	258	15,700	NA	2,340
Molybdenum other	903,000	NA	63,200	49,900	NA	2,920	444,000	NA	27,200
Total	39,200,000	XX	736,000	2,340,000	XX	39,200	28,400,000	XX	503,000

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.

Source: U.S. Census Bureau.