

# Mineral Industry Surveys

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**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:** <http://minerals.usgs.gov/minerals>

## MOLYBDENUM IN SEPTEMBER 2014

Domestic production of molybdenum (Mo) in concentrate in September 2014 was slightly more than the output of the previous month and about 7% more than that of September 2013. Producer stocks of molybdenum in concentrate, oxide, and other product forms were about 6,600 metric tons (t) at yearend 2013 and about 7,000 t at the end of September.

According to Ryan's Notes, the September monthly average price range for U.S. ferromolybdenum (FeMo) was \$15.333 to \$15.844 per pound of molybdenum content, compared with \$16.433 to \$17.211 in August. European FeMo monthly averages ranged from \$30.272 to \$30.656 per kilogram (kg) of molybdenum content in September compared with \$32.456 to \$32.922 per kg in August. In September, worldwide molybdenum oxide (MoO<sub>3</sub>) prices ranged from \$12.344 to \$12.661 per pound compared with \$13.133 to \$13.633 per pound in August.

In the first 7 months of 2014, China's exports of MoO<sub>3</sub> increased by 65% to 5,880 t compared with the same period of 2013, according to official Chinese customs data (Metal-Pages, 2014a). In the first 7 months of 2014, China's imports of MoO<sub>3</sub> decreased by 30% to 2,932 t compared with the same period of

2013. China's main import origins during the first 7 months of 2014 were Chile and the United States (Metal-Pages, 2014b).

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### References Cited

- Metal-Pages, 2014a, China molybdenum oxide exports up 63.50% in Jan-Jul 2014: Metal-Pages, July 29. (Accessed December 29, 2014, via <http://www.metal-pages.com/>.)
- Metal-Pages, 2014b, China molybdenum oxide imports down 30.30% in Jan-Jul 2014: Metal-Pages, September 4. (Accessed December 29, 2014, via <http://www.metal-pages.com/>.)

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

(Metric tons, contained molybdenum)

Period	Production	Shipments <sup>2, 3</sup>
2013:		
January–September	46,400	46,000
September	5,230	5,090
October	5,070	5,420
November	4,800	4,570
December	4,560	4,850
January–December	60,800	60,900
2014:		
January	5,050	4,960
February	4,640	4,680
March	5,160	5,110
April	5,570	5,580
May	6,530	6,500
June <sup>f</sup>	5,800	5,940
July <sup>f</sup>	5,630	5,810
August <sup>f</sup>	5,470	5,300
September	5,590	5,540
January–September	49,400	49,400

<sup>f</sup>Revised.

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

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

<sup>3</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
2014:						
August:						
Steel:						
Carbon	31,400	W	--	--	W	31,400
High-strength low-alloy	W	7,380	--	--	--	7,380
Stainless and heat-resisting	157,000	50,200	--	(3)	W	207,000
Full alloy	273,000	257,000	--	--	W	530,000
Tool	W	W	--	--	--	W
Total	461,000	314,000	--	(3)	W	775,000
Cast irons (gray, malleable, and ductile iron)	W	W	--	--	W	W
Superalloys	W	W	--	(3)	67,400	67,400
Alloys: (other than steels, cast irons, and superalloys)						
Welding materials (structural and hard-facing)	--	W	--	--	W	W
Other alloys	243	W	--	--	--	243
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)	--	--	W
Catalysts	77,300	--	(3)	--	W	77,300
Other chemicals	--	--	--	--	--	W
Miscellaneous and unspecified uses:						
Lubricants	--	--	--	--	10,800	10,800
Other	102,000	48,700	287	(3)	305,000	456,000
Grand total	641,000	363,000	287	(3)	383,000	1,390,000
Stocks, August 31, 2014	580,000	340,000	2,990	(6)	(6)	1,800,000
September:						
Steel:						
Carbon	W	W	--	--	W	W
High-strength low-alloy	W	7,380	--	--	--	7,380
Stainless and heat-resisting	188,000	55,500	--	(3)	W	244,000
Full alloy	281,000	254,000	--	--	W	535,000
Tool	W	W	--	--	--	W
Total	469,000	317,000	--	(3)	W	786,000
Cast irons (gray, malleable, and ductile iron)	W	W	--	--	W	W
Superalloys	W	W	--	(3)	75,300	75,300
Alloys: (other than steels, cast irons, and superalloys)						
Welding materials (structural and hard-facing)	--	W	--	--	W	W
Other alloys	120	W	--	--	--	120
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)	--	--	W
Catalysts	77,300	--	(3)	--	W	77,300
Other chemicals	--	--	--	--	--	W
Miscellaneous and unspecified uses:						
Lubricants	--	--	--	--	10,800	10,800
Other	141,000	48,000	1,280	(3)	338,000	528,000
Grand total	688,000	365,000	1,280	(3)	424,000	1,480,000
Stocks, September 30, 2014	527,000	352,000	3,020	(6)	(6)	1,770,000

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.

<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<sup>1</sup>

(Kilograms, contained molybdenum)

Country	2013			2014		
	January– December	September	January– September	August	September	January– September
Antigua and Barbuda	--	--	--	--	--	22,400
Argentina	--	--	--	--	--	5,110
Australia	214,000	--	214,000	--	--	--
Austria	31,800	--	31,800	--	--	--
Belgium	3,770,000	200,000	2,210,000	2,120,000	1,600,000	7,020,000
Brazil	690,000	24,200	564,000	75,900	32,200	319,000
Canada	2,070,000	124,000	1,530,000	193,000	153,000	1,730,000
Chile	--	--	--	556,000	677,000	1,510,000
China	1,520,000	254,000	1,020,000	140,000	164,000	959,000
Germany	172,000	--	172,000	--	--	89
India	1,310,000	79,800	1,020,000	31,300	31,700	395,000
Israel	--	--	--	--	--	795
Japan	4,900,000	449,000	3,340,000	580,000	649,000	4,960,000
Korea, Republic of	898,000	43,100	707,000	97,300	97,300	1,070,000
Mexico	9,160,000	738,000	6,900,000	818,000	525,000	5,560,000
Netherlands	21,100,000	1,760,000	16,000,000	1,640,000	1,510,000	12,800,000
Peru	24,700	6,110	24,700	--	--	--
Philippines	2,180	--	2,180	--	--	--
Singapore	1,370	--	1,370	--	--	--
South Africa	194,000	20,000	174,000	--	--	--
Taiwan	24,900	--	24,900	9,010	--	9,010
Thailand	46,700	--	37,000	--	--	13,300
United Kingdom	2,380,000	76,600	1,590,000	797,000	788,000	8,420,000
Venezuela	210	--	--	--	--	--
Vietnam	57,100	--	42,500	7,000	--	56,800
Total	48,600,000	3,780,000	35,600,000	7,060,000	6,230,000	44,900,000

-- 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<sup>1</sup>

(Kilograms, contained molybdenum)

Country	2013			2014		
	January– December	September	January– September	August	September	January– September
Argentina	382	--	--	--	--	--
Canada	635,000	44,800	510,000	40,400	41,400	449,000
Chile	1,480	--	--	--	--	--
Colombia	238	119	238	--	133	400
Denmark	513	--	342	--	--	171
Israel	168	--	168	--	--	--
Mexico	156,000	318	87,000	318	--	26,500
Netherlands	48,600	--	48,600	--	--	--
Panama	13,200	--	13,200	--	--	--
Peru	6,550	--	6,000	--	--	--
Vietnam	--	--	--	-- <sup>r</sup>	--	135
Total	862,000	45,200	665,000	40,700 <sup>r</sup>	41,600	476,000

<sup>r</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 5  
U.S. IMPORTS FOR CONSUMPTION OF MOLYBDENUM PRODUCTS<sup>1</sup>

(Kilograms, unless otherwise specified)

Material	January–December 2013			September 2014			January–September 2014		
	Gross weight	Contained molybdenum	Value <sup>2</sup> (thousands)	Gross weight	Contained molybdenum	Value <sup>2</sup> (thousands)	Gross weight	Contained molybdenum	Value <sup>2</sup> (thousands)
Ore and concentrates roasted	6,870,000	4,160,000	\$47,100	581,000	353,000	\$9,410	5,460,000	3,350,000	\$79,500
Ore and concentrates other	18,100,000	8,890,000	250,000	1,810,000	947,000	26,000	14,900,000	7,650,000	210,000
Molybdenum chemicals:									
Oxides and hydroxides	283,000	NA	5,390	39,900	--	873	329,000	NA	6,230
Molybdates of ammonium	1,080,000	611,000	17,000	239,000	135,000	4,470	903,000	509,000	15,800
Molybdates (all others)	3,770	1,550	190	--	--	--	13,700	5,450	193
Molybdenum orange	274,000	NA	2,430	25,100	--	219	286,000	NA	2,290
Ferromolybdenum	6,120,000	4,090,000	108,000	785,000	523,000	16,600	5,650,000	3,770,000	112,000
Molybdenum powders	448,000	433,000	16,000	32,100	29,200	1,290	385,000	365,000	14,300
Molybdenum unwrought	762,000	747,000	22,100	77,200	76,700	2,560	945,000	920,000	26,300
Molybdenum waste and scrap	739,000	690,000	21,900	70,700	69,100	2,350	970,000	950,000	29,300
Molybdenum wire	22,700	NA	3,490	2,030	--	195	12,300	NA	1,860
Molybdenum other	298,000	NA	20,800	15,700	--	1,470	314,000	NA	21,000
Total	35,000,000	XX	514,000	3,670,000	2,130,000	65,500	30,200,000	XX	519,000

NA Not available. XX Not applicable. -- Zero.

<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.