

# Mineral Industry Surveys

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## MOLYBDENUM IN SEPTEMBER 2008

Domestic production of molybdenum (Mo) in concentrate in September 2008 was about 12% more than the output of the previous month and about 32% more than that of September 2007, according to the U.S. Geological Survey. Producer stocks of molybdenum in concentrate, oxide, and other product forms were about 5,770 metric tons (t) at the beginning of 2008 and about 6,220 t at the end of September.

According to Ryan's Notes (2008), the September monthly average price range for U.S. ferromolybdenum (FeMo) was from \$35.306 to \$35.717 per pound of molybdenum content, compared with \$35.683 to \$35.978 in August. European FeMo monthly averages ranged from \$76.889 to \$77.778 per kilogram (kg) of molybdenum content in September compared with \$79.606 to \$80.150 per kg in August. In September, worldwide molybdenum oxide (MoO<sub>3</sub>) prices ranged from \$32.694 to \$33.172 per pound compared with \$33.722 to \$34.000 per pound in August.

The London Metal Exchange Ltd. (LME) board was expected to approve the listing of MoO<sub>3</sub> to be traded on the LME starting in the second half of 2009. The move was met with mixed reviews. Some producers and suppliers argued that it would

increase price volatility by attracting notoriously volatile hedge funds. Other commodities traders were in favor of the move, stating that it would enable them to get involved in trading the metal for their clients (Steel Guru, 2008).

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 August and September 2008. Export data for July and August 2008 and import data for August 2008 are also included.

### References Cited

Ryan's Notes, 2008, [untitled]: Ryan's Notes, v. 14, no. 40, October 6, p. 10.  
Steel Guru, 2008, Molybdenum and cobalt to join LME: Steel Guru. (Accessed July 20, 2009, at [http://steeltguru.com/news/index/2008/09/06/NjE4NzU%3D/Molybdenum\\_and\\_cobalt\\_to\\_join\\_LME.html](http://steeltguru.com/news/index/2008/09/06/NjE4NzU%3D/Molybdenum_and_cobalt_to_join_LME.html).)

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

(Metric tons, contained molybdenum)

	2007		2008		
	January- December	January- September	August	September	January- September
Production	57,000	43,400	4,910	5,500	44,200
Shipments: <sup>2</sup>					
Domestic	40,600	30,600	3,960	4,140	33,800
Export	16,400	13,000	732	1,460	10,200

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<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)

	2007		2008		
	January- December	January- September	August	September	January- September
Gross production	72,800	54,800	6,590	5,550	55,800
Internal consumption <sup>2</sup>	41,700	32,000	3,600	2,840	30,500
Gross shipments	48,700	36,300	4,600	4,340	39,400

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<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	Molybdc oxides	Ferro molyb- denum <sup>2</sup>	Ammonium and sodium molybdate	Molyb- denum scrap	Other	Total
2008, August:						
Steel:						
Carbon	54,500	W	--	--	W	54,500
High-strength low-alloy	68,100	13,400	--	--	11,300	92,800
Stainless and heat-resisting	258,000	78,000	--	W	6,510	343,000
Full alloy	249,000	307,000	--	--	1,510	557,000
Tool	W	W	--	--	--	W
Total	629,000	398,000	--	W	19,400	1,050,000
Cast irons (gray, malleable, and ductile iron)	W	20,700	--	--	763	21,500
Superalloys	65,200	W	--	W	81,300	147,000
Alloys: (other than steels, cast irons, and superalloys)						
Welding materials (structural and hard-facing)	--	W	--	--	6	6
Other alloys	--	5,140	--	--	--	5,140
Mill products made from metal powder <sup>3</sup>	13,300	--	--	--	184,000	198,000
Cemented carbides and related products <sup>4</sup>	--	--	--	--	W	W
Chemical and ceramic uses:						
Pigments	--	--	W	--	--	W
Catalysts	77,300	--	W	--	W	77,300
Other chemicals	--	--	--	--	446	446
Miscellaneous and unspecified uses:						
Lubricants	--	--	--	--	10,800	10,800
Other	16,500	45,500	72,600	84,800	16,800	236,000
Grand total	802,000	470,000	72,600	84,800	314,000	1,740,000
Stocks, August 31, 2008	382,000	330,000	3,150	13,600	857,000	1,590,000
2008, September:						
Steel:						
Carbon	48,700	W	--	--	W	48,700
High-strength low-alloy	69,000	12,400	--	--	11,300	92,700
Stainless and heat-resisting	220,000	73,100	--	W	6,510	300,000
Full alloy	247,000	287,000	--	--	1,510	535,000
Tool	W	W	--	--	--	W
Total	584,000	372,000	--	W	19,400	976,000
Cast irons (gray, malleable, and ductile iron)	W	20,700	--	--	763	21,500
Superalloys	60,300	W	--	W	88,100	148,000
Alloys: (other than steels, cast irons, and superalloys)						
Welding materials (structural and hard-facing)	--	W	--	--	6	6
Other alloys	W	3,880	--	--	--	3,880
Mill products made from metal powder <sup>3</sup>	13,300	--	--	--	182,000	196,000
Cemented carbides and related products <sup>4</sup>	--	--	--	--	W	W
Chemical and ceramic uses:						
Pigments	--	--	W	--	--	W
Catalysts	77,300	--	W	--	W	77,300
Other chemicals	--	--	--	--	572	572
Miscellaneous and unspecified uses:						
Lubricants	--	--	--	--	10,800	10,800
Other	16,500	43,300	72,600	74,300	16,800	223,000
Grand total	752,000	440,000	72,600	74,300	319,000	1,660,000
Stocks, September 30, 2008	338,000	328,000	2,150	845	855,000	1,520,000

W Withheld to avoid disclosing company proprietary data; included in "Other" of the "Miscellaneous and unspecified uses" 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>Includes ingot, wire, rod, and sheet.

<sup>4</sup>Includes construction, mining, oil and gas, metalworking machinery.

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

(Kilograms, contained molybdenum)

Country	2007			2008		
	January- December	August	January- August	July	August	January- August
Argentina	--	--	--	13,200	--	134,000
Belgium	6,730,000	551,000	4,280,000	566,000	453,000	4,920,000
Brazil	119,000	--	100,000	--	--	1,290
Canada	2,580,000	134,000	1,850,000	148,000	221,000	1,600,000
Chile	1,270,000	--	1,270,000	36,500	--	249,000
China	71,500	--	71,400	45	--	242,000
Finland	38,000	--	--	--	--	--
India	119,000	--	106,000	--	--	22,200
Italy	19,000	--	--	--	--	12,000
Japan	2,230,000	323,000	1,350,000	232,000	178,000	1,390,000
Korea, Republic of	232,000	--	24,700	92,400	31,900	516,000
Mexico	4,760,000	384,000	3,350,000	402,000	441,000	2,880,000
Netherlands	9,660,000	557,000	6,850,000	872,000	786,000	6,450,000
Pakistan	75,600	--	75,600	--	--	--
Switzerland	1,630	--	1,630	--	--	--
Taiwan	17,900	17,500	17,900	--	--	--
Thailand	9,620	--	9,620	--	--	--
United Kingdom	5,800,000	801,000	3,730,000	329,000	345,000	3,160,000
Vietnam	4,990	--	4,130	9,450	5,940	38,000
Other	80,800	17,300	24,000	--	--	33,800
Total	33,800,000	2,780,000	23,100,000	2,700,000	2,460,000	21,700,000

-- 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	2007			2008		
	January- December	August	January- August	July	August	January- August
Australia	25,000	--	25,000	--	--	--
Canada	838,000	13,800	514,000	80,200	39,100	719,000
Denmark	394	--	394	454	--	454
India	1,090	19,000	953	280	--	843
Korea, Republic of	--	--	--	--	14,000	14,000
Mexico	23,700	536	20,500	6,010	18,100	37,800
Netherlands	145,000	--	145,000	55,900	28,000	196,000
Philippines	735	490	--	--	--	700
Saudi Arabia	149,000	--	45,500	--	--	--
South Africa	13,500	--	13,500	68	--	68
United Kingdom	24,900	--	24,900	--	--	--
Total	1,220,000	33,800	790,000	143,000	99,200	969,000

-- 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 2007			August 2008			January-August 2008		
	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	8,680,000	5,430,000	\$181,000	831,000	492,000	\$23,200	6,530,000	4,020,000	\$166,000
Ore and concentrates other	15,000,000	6,960,000	372,000	589,000	248,000	16,900	6,860,000	3,150,000	200,000
Molybdenum chemicals:									
Oxides and hydroxides	211,000	NA	8,020	14	NA	2	171,000	NA	7,050
Molybdates of ammonium	915,000	515,000	30,400	2,390	1,340	80	249,000	141,000	9,540
Molybdates (all others)	179,000	51,400	2,190	4,430	1,270	34	79,000	27,200	873
Molybdenum orange	600,000	NA	4,040	27,200	NA	250	271,000	NA	2,220
Ferromolybdenum	6,360,000	4,100,000	270,000	301,000	204,000	14,000	2,490,000	1,670,000	121,000
Molybdenum powders	72,900	60,800	4,990	5,660	4,020	634	48,400	40,700	4,320
Molybdenum unwrought	117,000	117,000	7,460	29,900	29,800	1,880	165,000	164,000	10,700
Molybdenum waste and scrap	574,000	554,000	34,800	19,300	13,500	415	436,000	403,000	23,300
Molybdenum wire	17,900	NA	2,740	2,050	NA	367	13,000	NA	2,190
Molybdenum other	164,000	NA	20,900	39,300	NA	4,300	297,000	NA	30,300
Total	32,900,000	XX	938,000	1,850,000	XX	62,100	17,600,000	XX	577,000

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.