

Mineral Industry Surveys

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MOLYBDENUM IN SEPTEMBER 2006

Domestic production of molybdenum in concentrate in September 2006 was about 11% less than that of the previous month and about 2% greater than that of September 2005, according to the U.S. Geological Survey. Year-to-date production of molybdenum in concentrate from January through September was about 7% more than during the same period in 2005. Producer stocks of molybdenum in concentrate, oxide, and other product forms were about 7,380 metric tons (t) at the beginning of 2006, and about 7,740 t at the end of September.

According to Ryan's Notes (2006b), the September monthly average price range for U.S. ferromolybdenum (FeMo) was from \$28.111 to \$28.611 per pound of molybdenum content, compared with \$27.500 to \$28.111 in August. European FeMo monthly averages ranged from \$62.500 to \$63.444 per kilogram (kg) of molybdenum content in September compared with \$60.278 to \$61.444 per kg in August. In September, worldwide molybdenum oxide (MoO₃) prices ranged from \$27.011 to \$27.500 per pound versus \$26.128 to \$26.733 per pound in August.

The molybdenum market continued to be tight with ongoing production problems at Corporacion Nacional del Cobre's (Codelco) Chuquicamata Mine in Chile, owing to a collapsed conveyor belt, and the continuing strike at Grupo Mexico S.A.

de C.V.'s La Caridad Mine. The world supply deficit may be partially offset by renewed production from the Huludao Region in China. Mines in the Huludao Region of Liaoning Province had been closed for more than a year owing to environmental and health and safety concerns. According to a representative from Shangxiang Minmetals Inc., many of the mines were consolidated into the newly-formed Huludao Lianshan Molybdenum Industry Co., which began production in September. Production was expected to reach about 2,250 t (5 million pounds) of molybdenum in 2006 and could reach 9,000 t (20 million pounds) in 2007 (Ryan's Notes, 2006a).

Included in this Mineral Industry Surveys are U.S. production and shipments of molybdenum concentrates and materials, U.S. consumption by end use, and stocks of molybdenum material in August and September 2006. Export data for July and August 2006 and import data for August 2006 are also included.

References Cited

Ryan's Notes, 2006a, Song sees moly deficit in 2006: Ryan's Notes, v. 12, no. 38, September 25, p. 4.
Ryan's Notes, 2006b, [untitled]: Ryan's Notes, v. 12, no. 39, October 2, p. 10.

TABLE 1
U.S. SALIENT MOLYBDENUM CONCENTRATE STATISTICS¹

(Metric tons, contained molybdenum)

	2005		2006		
	January- December ^p	January- September	August	September	January- September
Production	57,900	42,800	5,510	4,920	45,900
Shipments: ²					
Domestic	38,200	28,700	3,630	2,970	30,200
Export	19,400	14,100	2,230	1,870	15,900

^pPreliminary.

¹Data are rounded to no more than three significant digits.

²As reported by producers.

TABLE 2
U.S. REPORTED PRODUCTION AND SHIPMENTS OF MOLYBDENUM
PRODUCTS¹

(Metric tons, contained molybdenum)

	2005		2006		
	January- December ^p	January- September	August ^r	September	January- September
Gross production	78,500	60,700	6,980	6,420	59,900
Internal consumption ²	48,700	38,900	4,130	3,260	36,600
Gross shipments	46,700	35,500	3,870	3,730	37,400

^pPreliminary. ^rRevised.

¹Data are rounded to no more than three significant digits.

²Includes molybdic oxides, metal powder, ammonium molybdate, sodium molybdate, and other.

TABLE 3
U.S. REPORTED CONSUMPTION, BY END USES, AND CONSUMER STOCKS OF MOLYBDENUM MATERIALS¹

(Kilograms, contained molybdenum)

End use	Molybdic oxides	Ferro molybdenum ²	Ammonium and sodium molybdate	Molybdenum scrap	Other	Total
2006, August:						
Steel:						
Carbon	13,000	W	--	--	W	13,000
High-strength low-alloy	34,300	7,940	--	--	11,300	53,600
Stainless and heat-resisting	181,000	64,200	--	W	6,510	252,000
Full alloy	165,000	131,000 ^r	--	--	1,510	297,000
Tool	55,400	W	--	--	--	55,400
Total	449,000	203,000^r	--	W	19,400	672,000^r
Cast irons (gray, malleable, and ductile iron)	W	7,840 ^r	--	--	763	8,600 ^r
Superalloys	92,700	W	--	(3)	154,000	247,000
Alloys: (other than steels, cast irons, and superalloys)						
Welding materials (structural and hard-facing)	--	W	--	--	6	6
Other alloys	128	5,300	--	--	--	5,420
Mill products made from metal powder ⁴	--	--	--	--	198,000 ^r	198,000 ^r
Cemented carbides and related products ⁵	--	--	--	--	W	W
Chemical and ceramic uses:						
Pigments	--	--	W	--	--	W
Catalysts	77,300	--	W	--	W	77,300
Other chemicals	--	--	--	--	1,100	1,100
Miscellaneous and unspecified uses:						
Lubricants	--	--	--	--	11,300	11,300
Other	1,090	32,200	73,200	1,840	16,800	125,000
Grand total	621,000	248,000^r	73,200	1,840	402,000^r	1,350,000^r
Stocks, August 31, 2006	455,000	178,000 ^r	3,040	5,190	849,000	1,490,000
2006, September:						
Steel:						
Carbon	12,400	W	--	--	W	12,400
High-strength low-alloy	34,700	9,120	--	--	11,300	55,100
Stainless and heat-resisting	173,000	66,200	--	W	6,510	245,000
Full alloy	165,000	131,000	--	--	1,510	298,000
Tool	41,100	W	--	--	--	41,100
Total	426,000	206,000	--	W	19,400	652,000
Cast irons (gray, malleable, and ductile iron)	W	6,840	--	--	763	7,600
Superalloys	79,200	W	--	(3)	141,000	221,000
Alloys: (other than steels, cast irons, and superalloys)						
Welding materials (structural and hard-facing)	--	W	--	--	6	6
Other alloys	66	4,470	--	--	--	4,530
Mill products made from metal powder ⁴	--	--	--	--	185,000	185,000
Cemented carbides and related products ⁵	--	--	--	--	W	W
Chemical and ceramic uses:						
Pigments	--	--	W	--	--	W
Catalysts	77,300	--	W	--	W	77,300
Other chemicals	--	--	--	--	1,100	1,100
Miscellaneous and unspecified uses:						
Lubricants	--	--	--	--	11,100	11,100
Other	1,090	30,300	73,000	1,840	16,800	123,000
Grand total	584,000	248,000	73,000	1,840	376,000	1,280,000
Stocks, September 30, 2006	428,000	177,000	3,070	9,220	853,000	1,470,000

¹Revised. W Withheld to avoid disclosing company proprietary data; included in "Other" of the "Miscellaneous and unspecified uses" category. -- Zero.

²Data are rounded to no more than three significant digits; may not add to totals shown.

³Includes calcium molybdate.

⁴Included in "Other" of the "Superalloys" category.

⁵Includes ingot, wire, rod, and sheet.

⁶Includes construction, mining, oil and gas, metalworking machinery.

TABLE 4
U.S. EXPORTS OF MOLYBDENUM ORES AND CONCENTRATES
(including roasted concentrate), BY COUNTRY¹

(Kilograms, contained molybdenum)

Country	2005		2006		
	January- December	January- August	July	August	January- August
Australia	110,000	110,000	--	--	7,350
Austria	3,230	3,230	--	--	--
Belgium	9,430,000	6,220,000	365,000	884,000	5,370,000
Brazil	66,700	66,100	19,200	--	56,000
Canada	3,840,000	2,860,000	133,000	180,000	1,890,000
Chile	177,000	111,000	47,900	--	140,000
China	4,390,000	3,680,000	--	--	398,000
Costa Rica	3,810	3,810	--	--	--
India	41,100	37,300	--	11,700	13,800
Italy	35,100	35,100	--	--	--
Japan	2,050,000	1,470,000	210,000	190,000	1,580,000
Korea, Republic of	11,700	11,400	--	--	11,000
Mexico	3,130,000	1,950,000	471,000	762,000	4,000,000
Netherlands	15,000,000	12,500,000	700,000	837,000	6,770,000
Taiwan	3,600	3,600	9,620	--	608
United Kingdom	7,310,000	4,910,000	714,000	196,000	4,800,000
Other	767,000	753,000	2,290	2,360	52,700
Total	46,400,000	34,700,000	2,670,000	3,060,000	25,100,000

-- Zero.

¹Data 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 COUNTRY¹

(Kilograms, contained molybdenum)

Country	2005		2006		
	January- December	January- August	July	August	January- August
Argentina	--	--	--	--	14,500
Australia	--	--	--	--	24,100
Austria	11,400	--	--	--	--
Brazil	17,200	16,600	314	--	37,700
Canada	1,930,000	1,320,000	58,600	78,600	1,580,000
Denmark	--	--	--	--	57
India	--	--	201	--	367
Indonesia	5,930	5,930	--	--	--
Japan	--	--	--	--	60
Mexico	88,700	9,200	2,100	2,010	138,000
Netherlands	33,300	33,300	--	--	--
Singapore	--	--	--	--	1,630
Switzerland	--	--	--	--	12,000
Total	2,090,000	1,390,000	61,200	80,600	1,810,000

-- Zero.

¹Data 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 PRODUCTS¹

(Kilograms, unless otherwise specified)

Material	January-December 2005			August 2006			January-August 2006		
	Gross weight	Contained molybdenum	Value ² (thousands)	Gross weight	Contained molybdenum	Value ² (thousands)	Gross weight	Contained molybdenum	Value ² (thousands)
Ore and concentrates roasted	8,570,000	5,380,000	\$306,000	863,000	539,000	\$17,600	7,420,000	4,550,000	\$119,000
Ore and concentrates other	13,800,000	6,480,000	440,000	824,000	366,000	13,700	6,880,000	3,210,000	146,000
Molybdenum chemicals:									
Oxides and hydroxides	1,240,000	NA	42,500	25,400	NA	801	426,000	NA	16,100
Molybdates of ammonium	4,220,000	2,730,000	53,600	120,000	67,100	2,940	1,210,000	717,000	28,300
Molybdates (all others)	101,000	24,800	1,250	29,200	11,100	264	143,000	34,800	1,540
Molybdenum orange	983,000	NA	4,780	91,200	NA	396	560,000	NA	3,540
Ferromolybdenum	6,340,000	4,040,000	278,000	311,000	195,000	10,800	3,470,000	2,200,000	116,000
Molybdenum powders	92,900	78,500	7,740	83,100	51,900	2,880	226,000	160,000	10,300
Molybdenum unwrought	99,000	98,800	5,750	11,100	11,100	688	143,000	142,000	7,860
Molybdenum waste and scrap	503,000	480,000	35,600	14,300	14,200	756	328,000	323,000	20,600
Molybdenum wire	21,300	NA	3,160	592	NA	131	12,100	NA	1,660
Molybdenum other	163,000	NA	20,700	9,010	NA	1,310	99,900	NA	11,900
Total	36,200,000	19,300,000	1,200,000	2,380,000	1,260,000	52,400	20,900,000	11,300,000	482,000

NA Not available.

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

²Customs value.

Source: U.S. Census Bureau.