



Mineral Industry Surveys

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MOLYBDENUM IN OCTOBER 2002

Domestic production of molybdenum in concentrate in October 2002 was about 11% more than that of the previous month and was about 6% less than that of October 2001, according to the U.S. Geological Survey. Producer stocks of molybdenum in concentrate, oxide, and other product forms were 9,810 metric tons at the beginning of 2002, and 6,690

metric tons at the end of October.

Included in this Mineral Industry Surveys are U.S. production and shipments of molybdenum concentrates and materials, plus U.S. consumption, by end use, and stocks, of molybdenum material in September and October 2002; also included are trade data for August and September 2002.

TABLE 1
U.S. SALIENT MOLYBDENUM CONCENTRATE STATISTICS 1/

(Metric tons, contained molybdenum)

| | 2001 | 2002 | | Year to date |
|------------|------------------|-----------|---------|--------------|
| | January-December | September | October | |
| Production | 37,600 | 2,760 | 3,050 | 26,700 |
| Shipments: | | | | |
| Domestic | 20,700 | 1,560 | 1,510 | 17,400 |
| Export | 16,300 | 1,130 | 999 | 9,270 |

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

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

(Metric tons, contained molybdenum)

| | 2001 | 2002 | | Year to date |
|-------------------------|------------------|-----------|---------|--------------|
| | January-December | September | October | |
| Gross production | 40,300 | 2,800 | 2,530 | 24,400 |
| Internal consumption 2/ | 24,600 | 1,730 | 1,750 | 16,000 |
| Gross shipments | 32,600 | 2,450 | 2,350 | 23,600 |

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

2/ 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 1/

(Kilograms, contained molybdenum)

| End use | Molybdic oxides | Ferro molybdenum 2/ | Ammonium and sodium molybdate | Molybdenum scrap | Other | Total |
|--|-----------------|---------------------|-------------------------------|------------------|-----------|--------------|
| 2002, September: | | | | | | |
| Steel: | | | | | | |
| Carbon | 12,400 | W | -- | -- | W | 12,400 |
| High-strength low-alloy | 37,000 | 9,680 | -- | -- | W | 46,600 |
| Stainless and heat-resisting | 230,000 | 52,200 | -- | -- | 8,520 | 291,000 |
| Full alloy | 98,300 | 181,000 | -- | -- | 2,330 | 281,000 |
| Tool | 52,300 | W | -- | -- | W | 52,300 |
| Total | 430,000 | 242,000 | -- | -- | 10,800 | 683,000 |
| Cast irons (gray, malleable, and ductile iron) | W | 14,500 | -- | -- | W | 14,500 |
| Superalloys | 39,800 | W | -- | (3/) | 78,300 | 118,000 |
| Alloys: (other than steels, cast irons, and superalloys) | | | | | | |
| Welding materials (structural and hard-facing) | -- | 339 | -- | -- | 6 | 346 |
| Other alloys | -- | -- | -- | -- | 6,350 | 6,350 |
| Mill products made from metal powder 4/ | -- | -- | -- | -- | 60,200 | 60,200 |
| Cemented carbides and related products 5/ | -- | -- | -- | -- | 32 | 32 |
| Chemical and ceramic uses: | | | | | | |
| Pigments | -- | -- | W | -- | W | W |
| Catalysts | 77,300 | -- | W | -- | W | 77,300 |
| Other | -- | -- | -- | -- | -- | -- |
| Miscellaneous and unspecified uses: | | | | | | |
| Lubricants | -- | -- | -- | -- | 12,500 | 12,500 |
| Other | 1,090 | 35,300 | 78,400 r/ | -- | 19,400 r/ | 134,000 r/ |
| Grand total | 548,000 | 293,000 | 78,400 | -- | 188,000 | 1,110,000 r/ |
| Stocks, September 30, 2002 | 441,000 | 262,000 | 9,880 r/ | 36,600 | 886,000 | 1,640,000 |

See footnotes at end of table.

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

(Kilograms, contained molybdenum)

| End use | Molybdic oxides | Ferro molybdenum 2/ | Ammonium and sodium molybdate | Molybdenum scrap | Other | Total |
|--|-----------------|---------------------|-------------------------------|------------------|---------|-----------|
| 2002, October: | | | | | | |
| Steel: | | | | | | |
| Carbon | 11,400 | W | -- | -- | W | 11,400 |
| High-strength low-alloy | 27,900 | 8,220 | -- | -- | -- | 36,100 |
| Stainless and heat-resisting | 234,000 | 40,700 | -- | -- | 8,520 | 283,000 |
| Full alloy | 118,000 | 183,000 | -- | -- | 2,430 | 303,000 |
| Tool | 52,900 | W | -- | -- | W | 52,900 |
| Total | 443,000 | 232,000 | -- | -- | 10,900 | 686,000 |
| Cast irons (gray, malleable, and ductile iron) | W | 17,000 | -- | -- | W | 17,000 |
| Superalloys | 64,400 | W | -- | (3/) | 100,000 | 164,000 |
| Alloys: (other than steels, cast irons, and superalloys) | | | | | | |
| Welding materials (structural and hard-facing) | -- | W | -- | -- | 6 | 6 |
| Other alloys | 260 | 52 | -- | -- | 6,350 | 6,660 |
| Mill products made from metal powder 4/ | -- | -- | -- | -- | 88,600 | 88,600 |
| Cemented carbides and related products 5/ | -- | -- | -- | -- | 20 | 20 |
| Chemical and ceramic uses: | | | | | | |
| Pigments | -- | -- | W | -- | W | W |
| Catalysts | 77,300 | -- | W | -- | W | 77,300 |
| Other | -- | -- | -- | -- | -- | -- |
| Miscellaneous and unspecified uses: | | | | | | |
| Lubricants | -- | -- | -- | -- | 13,100 | 13,100 |
| Other | 1,090 | 46,100 | 77,700 | -- | 19,500 | 144,000 |
| Grand total | 586,000 | 295,000 | 77,700 | -- | 239,000 | 1,200,000 |
| Stocks, October 31, 2002 | 453,000 | 297,000 | 16,700 | 13,000 | 890,000 | 1,670,000 |

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

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

2/ Includes calcium molybdate.

3/ Included in "Other" of the "Superalloys" category.

4/ Includes ingot, wire, rod, and sheet.

5/ Includes construction, mining, oil and gas, metal working machinery.

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

(Kilograms, contained molybdenum)

| Country | 2001 | 2002 | | |
|--------------------|------------------|-----------|-----------|--------------|
| | January-December | August | September | Year to date |
| Australia | 147,000 | 6,000 | 11,200 | 46,900 |
| Belgium | 3,380,000 | 302,000 | 163,000 | 3,280,000 |
| Brazil | 30,100 | 3,200 | 2,900 | 26,300 |
| Canada | 650,000 | 111,000 | 46,100 | 809,000 |
| Chile | 11,800 | -- | 4,310 | 16,200 |
| China | 201,000 | 13,000 | -- | 45,900 |
| Germany | 512,000 | 3,070 | -- | 61,800 |
| India | 294,000 | 5,030 | 54 | 141,000 |
| Italy | 95,000 | -- | -- | 47,900 |
| Japan | 1,700,000 | 217,000 | 67,300 | 977,000 |
| Korea, Republic of | 29,200 | 4,460 | 3,150 | 63,600 |
| Mexico | 764,000 | 1,400 | 3,000 | 185,000 |
| Netherlands | 13,500,000 | 1,030,000 | 724,000 | 5,570,000 |
| Spain | 63,400 | 2,960 | -- | 41,200 |
| Sweden | 48,200 | -- | 10,700 | 35,000 |
| Taiwan | 6,320 | -- | 5,100 | 12,600 |
| United Kingdom | 6,210,000 | 652,000 | 336,000 | 3,610,000 |
| Other | 181,000 | 4,360 | -- | 146,000 |
| Total | 27,800,000 | 2,360,000 | 1,380,000 | 15,100,000 |

-- Zero.

1/ 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 1/

(Kilograms, contained molybdenum)

| Country | 2001 | 2002 | | Year to date |
|--------------------|------------------|--------|-----------|--------------|
| | January-December | August | September | |
| Australia | 599 | -- | -- | -- |
| Canada | 442,000 | 73,000 | 24,800 | 438,000 |
| Chile | -- | -- | -- | 240 |
| China | 11,500 | -- | -- | -- |
| Germany | 111,000 | -- | -- | -- |
| Korea, Republic of | 876 | -- | -- | -- |
| Mexico | 50,300 | 16,500 | 1,670 | 50,300 |
| Netherlands | 12,600 | -- | -- | -- |
| Switzerland | -- | -- | -- | 21,800 |
| Taiwan | -- | -- | 5,110 | 5,390 |
| Total | 629,000 | 89,500 | 31,600 | 515,000 |

-- Zero.

1/ 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 1/

(Kilograms, unless otherwise specified)

| Material | January-December 2001 | | | October 2002 | | |
|------------------------------|-----------------------|----------------------|----------------------------|--------------|----------------------|----------------------------|
| | Gross weight | Contained molybdenum | Value (c.i.f.) (thousands) | Gross weight | Contained molybdenum | Value (c.i.f.) (thousands) |
| Ore and concentrates roasted | 9,470,000 | 6,000,000 | \$32,900 | 594,000 | 369,000 | \$3,650 |
| Ore and concentrates other | 10,000 | 11,600 | 73 | 353,000 | 182,000 | 1,850 |
| Molybdenum chemicals: | | | | | | |
| Oxides and hydroxides | 1,010,000 | NA | 5,530 | 22,300 | NA | 221 |
| Molybdates of ammonium | 2,740,000 | 1,610,000 | 15,100 | 115,000 | 66,700 | 918 |
| Molybdates (all others) | 318,000 | 113,000 | 1,050 | 61,700 | 11,900 | 294 |
| Molybdenum orange | 1,120,000 | NA | 5,180 | 153,000 | NA | 586 |
| Ferromolybdenum | 5,570,000 | 3,580,000 | 21,400 | 442,000 | 283,000 | 2,990 |
| Molybdenum powders | 172,000 | 163,000 | 3,390 | 500 | 450 | 12 |
| Molybdenum unwrought | 24,700 | 24,400 | 267 | -- | -- | -- |
| Molybdenum waste and scrap | 775,000 | 714,000 | 7,140 | -- | -- | -- |
| Molybdenum wire | 16,900 | NA | 1,080 | -- | -- | -- |
| Molybdenum other | 14,400 | NA | 1,940 | 154 | NA | 62 |
| Total | 21,200,000 | 12,200,000 | 95,100 | 1,740,000 | 914,000 | 10,600 |

NA Not available. -- Zero.

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

Source: U.S. Census Bureau.