

Mineral Industry Surveys

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TUNGSTEN IN JANUARY 2007

January 2007 U.S. net production of intermediate tungsten products, including metal powder and tungsten carbide powder, was slightly higher than that of December 2006, according to the U.S. Geological Survey.

Total U.S. reported consumption of ferrotungsten, tungsten metal powder, tungsten carbide powder, tungsten scrap, and other tungsten materials in January 2007 was 7% higher than reported consumption in December 2006. These materials were used to make alloys, cemented carbides, mill products, catalysts, and pigments.

U.S. trade data for January through December 2006 are published in this issue. The amount of tungsten contained in U.S. imports was 16% higher in 2006 than that imported in 2005. The amount of tungsten contained in U.S. exports was slightly higher in 2006 than that of 2005.

Update

Prices for tungsten ore concentrates, in dollars per metric ton unit from Metal Bulletin, are listed below. Prices in dollars per short ton unit were converted from metric-ton-unit prices and rounded to the nearest dollar. These prices represent combined prices for wolframite and scheelite ore concentrates with a minimum tungsten trioxide (WO_3) content of 65%. The prices for February 1-28, 2007, are as follows:

Low—\$160/metric ton unit WO_3 (\$145/short ton unit WO_3)
High—\$170/metric ton unit WO_3 (\$154/short ton unit WO_3)

TABLE 1
U.S. SALIENT TUNGSTEN STATISTICS¹

(Metric tons, tungsten content)

| Period | Concentrate | | | | Reported scrap consumption | Intermediate products | | | |
|------------------|------------------------------|-------------------------------|-----------------------|-----------------------------------|----------------------------------|--------------------------------|---|-----------------------------------|-----|
| | Reported consump- tion | Imports for consumption | Stocks, end of period | | | Net production ⁴ | Reported consump- tion ⁵ | Stocks, end of period | |
| | | | Industry ² | U.S. Gov- ernment ³ | | | Industry ⁶ | U.S. Gov- ernment ³ | |
| 2006: | | | | | | | | | |
| January | W | 187 | W | 26,000 | 442 ^r | 649 ^r | 970 ^r | 767 | 266 |
| February | W | 197 | W | 25,900 | 317 | 606 ^r | 915 ^r | 652 ^r | 266 |
| March | W | 173 | W | 25,700 | 400 ^r | 766 ^r | 965 ^r | 720 ^r | 266 |
| April | W | 133 | W | 25,000 | 405 | 719 ^r | 995 ^r | 739 ^r | 266 |
| May | W | 161 | W | 24,500 | 493 ^r | 687 ^r | 1,010 ^r | 792 ^r | 266 |
| June | W | 185 | W | 24,100 | 338 | 716 ^r | 933 ^r | 770 ^r | 266 |
| July | W | 230 | W | 24,100 | 248 ^r | 556 ^r | 814 ^r | 758 ^r | 266 |
| August | W | 91 | W | 24,100 | (7) | 673 ^r | 972 ^r | 768 ^r | 266 |
| September | W | 180 | W | 23,300 | (7) | 720 ^r | 944 ^r | 773 ^r | 266 |
| October | W | 212 | W | 23,100 | 266 ^r | 668 ^r | 967 ^r | 766 ^r | 266 |
| November | W | 256 | W | 22,900 | 343 ^r | 650 ^r | 900 ^r | 761 ^r | 266 |
| December | W | 289 | W | 22,900 | 353 ^r | 646 ^r | 901 ^r | 827 ^r | 266 |
| January-December | W | 2,290 | XX | XX | 4,370 ^r | 8,060 ^r | 11,300 | XX | XX |
| 2007, January | W | 266 | W | 22,900 | 439 | 659 | 965 | 872 | 266 |

¹Revised. W Withheld to avoid disclosing company proprietary data. XX Not applicable.

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

²Reported by consumers.

³Data from Defense National Stockpile Center. Includes material committed for sale pending shipment.

⁴Net production of tungsten metal powder and tungsten carbide powder.

⁵Includes estimates and scrap.

⁶Data for tungsten metal powder and tungsten carbide powder reported by producers.

⁷Withheld to avoid disclosing company proprietary data; included in "Total."

TABLE 2
U.S. PRODUCTION, CONSUMPTION, AND STOCKS OF
AMMONIUM PARATUNGSTATE, BY MONTH¹

(Metric tons, tungsten content)

| Period | Production | Consumption | Stocks, end of period ² |
|------------------|------------|---------------------|--|
| 2006: | | | |
| January | W | 991 | W |
| February | W | 783 | W |
| March | W | 1,000 | W |
| April | W | 930 | 177 |
| May | W | 1,190 | 114 |
| June | W | 1,010 | 60 |
| July | W | 753 | 56 |
| August | W | 830 | 78 |
| September | W | 992 ^r | 36 ^r |
| October | W | 1,010 | 67 |
| November | W | 900 | 67 |
| December | W | 866 | W |
| January-December | W | 11,300 ^r | XX |
| 2007, January | W | 941 | 98 |

¹Revised. W Withheld to avoid disclosing company proprietary data.

XX Not applicable.

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

²Producers and consumers.

³Withheld to avoid disclosing company proprietary data; included in "Total."

TABLE 3
U.S. PRODUCTION AND STOCKS OF TUNGSTEN PRODUCTS¹

(Metric tons, tungsten content)

| Product ³ | Net production ² | | | Stocks at end of period | |
|-------------------------|-----------------------------|---------|--------------|-------------------------|---------|
| | 2007 | | | 2006 | 2007 |
| | 2006 ^r | January | Year to date | | January |
| Metal powder | 3,260 | 265 | 265 | 411 ^r | 430 |
| Tungsten carbide powder | 4,800 | 394 | 394 | 415 | 442 |
| Total | 8,060 | 659 | 659 | 827 ^r | 872 |

^rRevised.

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

²Receipts plus gross production less quantity used to make other products in table.

³Data for cast and crystalline tungsten carbide powder and tungsten chemicals are withheld to avoid disclosing company proprietary data; not included in "Total."

TABLE 4
U.S. REPORTED CONSUMPTION OF TUNGSTEN, BY END USE^{1, 2, 3}

(Metric tons, tungsten content)

| End use | 2006 | | 2007 |
|---|------------------|--------------------|---------|
| | December | Year to date | January |
| Steels | 22 ^r | 262 ^r | 21 |
| Superalloys | W | W | W |
| Other alloys (excludes steels and superalloys) ⁴ | W | W | W |
| Cemented carbides ⁵ | 481 ^r | 5,900 ^r | 486 |
| Mill products made from metal powder | W | W | W |
| Chemical uses | W | W | W |
| Miscellaneous and unspecified | 398 ^r | 5,130 ^r | 457 |
| Total | 901 ^r | 11,300 | 965 |

^rRevised. W Withheld to avoid disclosing company proprietary data; included with "Miscellaneous and unspecified."

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

²Does not include materials used in making primary tungsten products.

³Includes estimates.

⁴Includes welding and hard-facing rods and materials, wear- and corrosion-resistant alloys, and nonferrous alloys.

⁵Includes diamond tool matrices, cemented and sintered carbides, and cast carbide dies or parts.

TABLE 5
U.S. REPORTED CONSUMPTION AND CONSUMER STOCKS OF TUNGSTEN MATERIALS¹

(Metric tons, tungsten content)

| Period | Ferro-tungsten | Tungsten metal powder | Tungsten carbide powder | Tungsten scrap | Other tungsten materials ² | Total |
|------------------|------------------|-----------------------|-------------------------|-----------------|---------------------------------------|--------------------|
| Consumption: | | | | | | |
| 2006: | | | | | | |
| January | 19 | W | 500 | W | 6 | 970 ^r |
| February | 19 | W | 481 ^r | W | 6 | 915 ^r |
| March | 19 ^r | W | 487 ^r | W | 6 | 965 ^r |
| April | 19 | W | 477 | W | 6 | 995 ^r |
| May | 19 | W | 495 | W | 6 | 1,010 ^r |
| June | 20 ^r | W | 482 ^r | W | 6 | 933 ^r |
| July | 21 ^r | W | 480 ^r | W | 6 | 814 ^r |
| August | 22 ^r | W | 479 ^r | W | 6 | 972 ^r |
| September | 20 | W | 479 ^r | W | 6 | 944 ^r |
| October | 28 ^r | W | 480 | W | 6 | 967 ^r |
| November | 20 | W | 489 | W | 6 | 900 ^r |
| December | 20 ^r | W | 475 | W | 6 | 901 ^r |
| January-December | 245 ^r | W | 5,810 ^r | W | 72 | 11,300 |
| 2007, January | 20 | W | 480 | W | 6 | 965 |
| Stocks: | | | | | | |
| 2006: | | | | | | |
| January | 20 | 26 | 368 | 35 | 9 | 459 ^r |
| February | 24 | 26 | 373 | 41 ^r | 9 | 473 ^r |
| March | 24 | 26 | 369 | 38 ^r | 9 | 465 ^r |
| April | 23 | 26 | 368 | 35 ^r | 9 | 461 ^r |
| May | 22 | 25 | 370 | 43 | 9 | 469 |
| June | 24 | 25 | 375 ^r | 48 | 9 | 481 ^r |
| July | 23 | 29 | 374 | 41 ^r | 9 | 476 ^r |
| August | 21 | 27 | 354 | 45 | 9 | 456 |
| September | 20 | 25 | 358 | 40 ^r | 9 | 451 |
| October | 19 | 26 | 360 ^r | 35 ^r | 9 | 449 ^r |
| November | 20 | 26 | 357 ^r | 32 ^r | 9 | 443 ^r |
| December | 18 ^r | 26 | 358 ^r | 34 ^r | 9 | 445 ^r |
| 2007, January | 19 | 28 | 364 | 36 | 9 | 455 |

^rRevised. W Withheld to avoid disclosing company proprietary data; included in "Total."

¹Includes estimates.

²Includes tungsten chemicals.

TABLE 6
U.S. IMPORTS FOR CONSUMPTION OF TUNGSTEN, BY COUNTRY¹

(Metric tons, tungsten content)

| Period and country of origin | Ores and concentrates | Ammonium tungstates | Ferro-tungsten | Metal powder | Tungsten carbide powder | Other ² | Total | Total, year to date |
|------------------------------|-----------------------|---------------------|----------------|--------------|-------------------------|--------------------|--------|---------------------|
| 2005 | 2,080 | 1,920 | 385 | 1,530 | 1,690 | 1,480 | 9,090 | XX |
| 2006: | | | | | | | | |
| October | 212 | 124 | 15 | 139 | 111 | 174 | 776 | 8,870 |
| November | 256 | 139 | 23 | 121 | 140 | 161 | 840 | 9,710 |
| December: | | | | | | | | |
| Australia | -- | -- | -- | -- | -- | -- | -- | 24 |
| Austria | -- | -- | -- | -- | -- | 1 | 1 | 22 |
| Belgium | -- | -- | -- | -- | (3) | 1 | 1 | 13 |
| Bolivia | 116 | -- | -- | -- | -- | -- | 116 | 845 |
| Canada | 17 | -- | -- | 4 | 23 | -- | 43 | 733 |
| China | -- | 128 | 8 | 27 | 45 | 154 | 362 | 5,410 |
| Congo (Kinshasa) | -- | -- | -- | -- | -- | -- | -- | 34 |
| Czech Republic | -- | -- | -- | -- | 7 | (3) | 7 | 34 |
| France | -- | -- | -- | -- | (3) | (3) | (3) | 8 |
| Germany | -- | -- | -- | 36 | 4 | 13 | 53 | 973 |
| Hong Kong | -- | -- | -- | -- | -- | 5 | 5 | 13 |
| Hungary | -- | -- | -- | -- | -- | (3) | (3) | 5 |
| India | -- | -- | -- | -- | 1 | 3 | 5 | 17 |
| Israel | -- | -- | -- | 20 | 27 | 5 | 51 | 652 |
| Japan | -- | -- | -- | 1 | (3) | 2 | 2 | 36 |
| Korea, Republic of | -- | -- | -- | 17 | 3 | (3) | 20 | 233 |
| Mexico | -- | -- | -- | -- | (3) | (3) | (3) | 35 |
| Mongolia | 18 | -- | -- | -- | -- | -- | 18 | 43 |
| Netherlands | -- | -- | -- | -- | -- | (3) | (3) | 10 |
| Peru | 9 | -- | -- | -- | -- | -- | 9 | 18 |
| Portugal | 73 | -- | -- | -- | -- | -- | 73 | 713 |
| Russia | -- | -- | -- | -- | -- | 1 | 1 | 99 |
| Rwanda | 21 | -- | -- | -- | -- | -- | 21 | 228 |
| Singapore | -- | -- | -- | -- | -- | 2 | 2 | 21 |
| South Africa | -- | -- | -- | -- | -- | -- | -- | 20 |
| Spain | -- | -- | -- | -- | -- | (3) | (3) | 4 |
| Sweden | -- | -- | -- | -- | -- | (3) | (3) | 17 |
| Thailand | 20 | -- | -- | -- | -- | -- | 20 | 108 |
| Uganda | 8 | -- | -- | -- | -- | -- | 8 | 32 |
| Ukraine | -- | -- | -- | -- | -- | -- | -- | 1 |
| United Kingdom | 9 | -- | -- | -- | (3) | 1 | 9 | 34 |
| Uzbekistan | -- | -- | -- | -- | -- | 29 | 29 | 114 |
| Vietnam | -- | -- | -- | -- | -- | -- | -- | 16 |
| Other | -- | -- | -- | -- | -- | (3) | (3) | 3 |
| Total | 289 | 128 | 8 | 104 | 109 | 219 | 858 | 10,600 |
| Total, year to date | 2,290 | 2,900 | 265 | 1,740 | 1,600 | 1,770 | 10,600 | XX |

XX Not applicable. -- Zero.

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

²Includes other unwrought tungsten, wrought tungsten, calcium and other tungstates, tungsten oxides, tungsten chlorides, other tungsten compounds, ash and residues containing mainly tungsten, and other mixtures of inorganic compounds containing tungsten. Tungsten content estimated in part.

³Less than ½ unit.

Note: Imports of waste and scrap in December 2006 totaled 153 metric tons, tungsten content, to give a year-to-date total of 1,430 metric tons, tungsten content.

Source: U.S. Census Bureau.

TABLE 7
U.S. EXPORTS OF TUNGSTEN, BY COUNTRY¹

(Metric tons, tungsten content)

| Period and country of destination | Ores and concentrates ² | Ammonium tungstates | Metal powder ² | Tungsten carbide powder | Other ³ | Total | Total, year to date |
|-----------------------------------|------------------------------------|---------------------|---------------------------|-------------------------|--------------------|-------|---------------------|
| 2005 | 52 | 774 | 750 | 1,560 | 1,950 | 5,080 | XX |
| 2006: | | | | | | | |
| October | (4) | 17 | 126 | 64 | 72 | 279 | 4,430 |
| November | 1 | 37 | 61 | 70 | 114 | 283 | 4,720 |
| December: | | | | | | | |
| Argentina | -- | -- | -- | (4) | (4) | (4) | 3 |
| Australia | -- | -- | 3 | 2 | 1 | 6 | 34 |
| Austria | -- | -- | 5 | -- | -- | 5 | 12 |
| Belgium | -- | -- | (4) | -- | -- | (4) | 20 |
| Brazil | -- | -- | 2 | (4) | 1 | 2 | 41 |
| Canada | -- | -- | 9 | 7 | 5 | 21 | 338 |
| Chile | -- | -- | -- | -- | (4) | (4) | 2 |
| China | -- | -- | (4) | -- | 1 | 1 | 351 |
| Colombia | -- | -- | -- | -- | (4) | (4) | 4 |
| Czech Republic | -- | -- | -- | -- | 4 | 4 | 88 |
| Denmark | -- | -- | -- | -- | -- | -- | 10 |
| France | -- | -- | 1 | 10 | 1 | 12 | 149 |
| Germany | -- | 83 | 48 | 53 | 4 | 188 | 1,150 |
| Hungary | -- | -- | -- | -- | 7 | 7 | 25 |
| India | -- | -- | -- | 7 | -- | 7 | 43 |
| Indonesia | -- | -- | (4) | -- | (4) | (4) | 3 |
| Ireland | -- | -- | -- | 1 | 1 | 2 | 14 |
| Israel | -- | -- | -- | -- | 1 | 1 | 49 |
| Italy | -- | -- | (4) | 1 | (4) | 2 | 37 |
| Japan | -- | -- | 1 | 1 | 17 | 19 | 163 |
| Korea, Republic of | -- | -- | (4) | (4) | 1 | 1 | 16 |
| Luxembourg | -- | -- | (4) | -- | -- | (4) | 2 |
| Malaysia | -- | -- | -- | -- | (4) | (4) | 20 |
| Mexico | -- | -- | -- | (4) | 2 | 2 | 185 |
| Morocco | -- | -- | -- | -- | -- | -- | 4 |
| Namibia | -- | -- | -- | -- | -- | -- | 3 |
| Netherlands | -- | -- | 12 | -- | (4) | 13 | 956 |
| New Zealand | -- | -- | 3 | -- | (4) | 3 | 10 |
| Norway | -- | -- | -- | -- | (4) | (4) | 3 |
| Peru | -- | -- | (4) | (4) | -- | (4) | 6 |
| Philippines | -- | -- | -- | -- | (4) | (4) | 52 |
| Saudi Arabia | -- | -- | -- | -- | 1 | 1 | 6 |
| Singapore | -- | -- | 1 | (4) | (4) | 1 | 75 |
| South Africa | -- | -- | 1 | -- | -- | 1 | 32 |
| Spain | -- | -- | (4) | -- | -- | (4) | 11 |
| Sweden | -- | -- | -- | -- | 2 | 2 | 75 |
| Switzerland | -- | -- | (4) | 5 | 1 | 6 | 11 |
| Taiwan | -- | -- | 6 | -- | 30 | 37 | 250 |
| Thailand | -- | -- | -- | -- | -- | -- | 1 |
| Turkey | -- | -- | (4) | -- | -- | (4) | 2 |
| United Kingdom | -- | -- | 2 | 11 | 41 | 54 | 789 |
| Venezuela | -- | -- | 1 | 6 | -- | 7 | 70 |
| Other | -- | -- | (4) | 2 | 1 | 3 | 14 |
| Total | -- | 83 | 97 | 108 | 122 | 410 | 5,130 |
| Total, year to date | 130 | 350 | 959 | 1,010 | 2,670 | 5,130 | XX |

XX Not applicable. -- Zero.

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

²Tungsten content estimated from reported gross weight.

³Includes unwrought tungsten, including bars and rods obtained simply by sintering, wrought tungsten, ferrotungsten, and other tungstates. Tungsten content estimated in part.

⁴Less than ½ unit.

Note: Estimated exports of waste and scrap in December 2006 totaled 51 metric tons, tungsten content, to give a year-to-date total of 1,310 metric tons, tungsten content.