

# Mineral Industry Surveys

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## TUNGSTEN IN APRIL 2005

U.S. net production of intermediate tungsten products, including metal powder and tungsten carbide powder, was slightly higher during January through April 2005 than net production during the same period in 2004, 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 during January through April 2005, was slightly lower than that consumed during the same period in 2004. These materials were used to make alloys, cemented carbides, mill products, catalysts, and pigments.

Data for U.S. imports and exports for January through March 2005 are published in this issue.

### 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<sub>3</sub>) content of 65%. The prices for May 1-31, 2005, are as follows:

Low—\$86/metric ton unit WO<sub>3</sub> (\$78/short ton unit WO<sub>3</sub>)  
High—\$160/metric ton unit WO<sub>3</sub> (\$145/short ton unit WO<sub>3</sub>)

TABLE 1  
U.S. SALIENT TUNGSTEN STATISTICS<sup>1</sup>

(Metric tons, tungsten content)

Period	Concentrate				Reported scrap consumption	Intermediate products			
	Reported consump- tion	Imports for consumption	Stocks, end of period			Net production <sup>4</sup>	Reported consump- tion <sup>5</sup>	Stocks, end of period	
			Industry <sup>2</sup>	U.S. Gov- ernment <sup>3</sup>			Industry <sup>6</sup>	U.S. Gov- ernment <sup>3</sup>	
2004:									
April	W	207	W	28,500	323	662 <sup>r</sup>	927	745 <sup>r</sup>	730
May	W	68	W	28,400	370	569 <sup>r</sup>	911	820 <sup>r</sup>	729
June	W	190	W	28,400	327	656 <sup>r</sup>	1,020	851 <sup>r</sup>	729
July	W	78	W	28,400	279 <sup>r</sup>	592 <sup>r</sup>	916	825 <sup>r</sup>	724
August	W	326	W	28,400	(7)	810 <sup>r</sup>	944	1,060 <sup>r</sup>	724
September	W	255	W	28,400	(7)	598 <sup>r</sup>	930	997 <sup>r</sup>	724
October	W	218	W	28,400	325 <sup>r</sup>	613 <sup>r</sup>	948	835 <sup>r</sup>	724
November	W	227	W	28,400	275 <sup>r</sup>	525 <sup>r</sup>	865	794 <sup>r</sup>	685
December	W	166	W	28,400	346 <sup>r</sup>	534 <sup>r</sup>	878	787 <sup>r</sup>	685
January-December	W	2,310	XX	XX	3,890 <sup>r</sup>	7,400 <sup>r</sup>	11,000	XX	XX
2005:									
January	W	171	W	28,400	416 <sup>r</sup>	717 <sup>r</sup>	955 <sup>r</sup>	862 <sup>r</sup>	685
February	W	202	W	28,400	415 <sup>r</sup>	537 <sup>r</sup>	871 <sup>r</sup>	757 <sup>r</sup>	685
March	W	193	W	27,300	291 <sup>r</sup>	707 <sup>r</sup>	828 <sup>r</sup>	699 <sup>r</sup>	685
April	W	NA	W	27,200	311	623	827	709	611
Total	W	NA	XX	XX	1,430	2,580	3,480	XX	XX

<sup>r</sup>Revised. NA Not available. W Withheld to avoid disclosing company proprietary data. 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>Reported by consumers.

<sup>3</sup>Data from Defense National Stockpile Center. Includes material committed for sale pending shipment.

<sup>4</sup>Net production of tungsten metal powder and tungsten carbide powder.

<sup>5</sup>Includes estimates and scrap.

<sup>6</sup>Data for tungsten metal powder and tungsten carbide powder reported by producers.

<sup>7</sup>Withheld to avoid disclosing company proprietary data; included in "January-December."

TABLE 2  
U.S. PRODUCTION, CONSUMPTION, AND STOCKS OF  
AMMONIUM PARATUNGSTATE, BY MONTH<sup>1</sup>

(Metric tons, tungsten content)

Period	Production	Consumption	Stocks, end of period <sup>2</sup>
2004:			
April	W	881	W
May	W	769	126 <sup>r</sup>
June	W	827	W
July	W	651 <sup>r</sup>	147 <sup>r</sup>
August	W	774	84 <sup>r</sup>
September	W	697	49
October	W	786	35 <sup>r</sup>
November	W	658	37
December	W	587 <sup>r</sup>	W
January-December <sup>3</sup>	W	8,790 <sup>r</sup>	XX
2005:			
January	W	953	W
February	W	929 <sup>r</sup>	W
March	W	979	W
April	W	810	W
Total	W	3,670	XX

<sup>r</sup>Revised. W Withheld to avoid disclosing company proprietary data.

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>Producers and consumers.

<sup>3</sup>Does not include withheld data.

TABLE 3  
U.S. PRODUCTION AND STOCKS OF TUNGSTEN PRODUCTS<sup>1</sup>

(Metric tons, tungsten content)

Product <sup>3</sup>	Net production <sup>2</sup>				Stocks at end of period		
	2005				2005		
	2004 <sup>r</sup>	March <sup>r</sup>	April	Year to date	2004 <sup>r</sup>	March <sup>r</sup>	April
Metal powder	3,020	293	244	1,080	438	317	317
Tungsten carbide powder	4,370	414	379	1,510	349	382	392
Total	7,400	707	623	2,580	787	699	709

<sup>r</sup>Revised.

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

<sup>2</sup>Receipts plus gross production less quantity used to make other products in table.

<sup>3</sup>Data 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<sup>1,2,3</sup>

(Metric tons, tungsten content)

End use	2005		
	March	April	Year to date
Steels	20	20	81
Superalloys	W	W	W
Other alloys (excludes steels and superalloys) <sup>4</sup>	W	W	W
Cemented carbides <sup>5</sup>	502 <sup>r</sup>	500	2,010
Mill products made from metal powder	W	W	W
Chemical uses	W	W	W
Miscellaneous and unspecified	306 <sup>r</sup>	307	1,390
Total	828 <sup>r</sup>	827	3,480

<sup>r</sup>Revised. W Withheld to avoid disclosing company proprietary data; included with "Miscellaneous and unspecified."

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

<sup>2</sup>Does not include materials used in making primary tungsten products.

<sup>3</sup>Includes estimates.

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

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

TABLE 5  
U.S. REPORTED CONSUMPTION AND CONSUMER STOCKS OF TUNGSTEN MATERIALS<sup>1</sup>

(Metric tons, tungsten content)

Period	Ferro- tungsten	Tungsten metal powder	Tungsten carbide powder	Tungsten scrap	Other tungsten materials <sup>2</sup>	Total
<b>Consumption:</b>						
2004:						
April	19	W	509	W	6	927
May	19	W	510	W	6	911
June	19	W	510	W	6	1,020
July	19	W	W	W	6	916
August	19	W	508	W	6	944
September	20	W	513	W	6	930
October	20	W	505	W	6	948
November	20	W	506	W	6	865
December	19	W	508	W	6	878
January-December	232	W	6,110	W	73	11,000
2005:						
January	20	W	507	W	6	955 <sup>r</sup>
February	19	W	517 <sup>r</sup>	W	6	871 <sup>r</sup>
March	20	W	511 <sup>r</sup>	W	6	828 <sup>r</sup>
April	20	W	511	W	6	827
Total	79	W	2,050	W	24	3,480
<b>Stocks:</b>						
2004:						
April	22	30	342	25	9	429
May	20	33	400	20	9	482
June	29	31	356	14	9	438
July	27	28	394	23	9	481
August	26	26	396	22	9	480
September	25	28	330	23	9	414
October	23	30	374	25	9	460
November	21	28	324	30	9	412
December	20	27	308	19	9	382
2005:						
January	27	28	346	20	9	430
February	26	27 <sup>r</sup>	347 <sup>r</sup>	16	9	424 <sup>r</sup>
March	44	25	348 <sup>r</sup>	20 <sup>r</sup>	9	446 <sup>r</sup>
April	22	28	349	24	9	431

<sup>r</sup>Revised. W Withheld to avoid disclosing company proprietary data; included in "Total."

<sup>1</sup>Includes estimates.

<sup>2</sup>Includes tungsten chemicals.

TABLE 6  
U.S. IMPORTS FOR CONSUMPTION OF TUNGSTEN, BY COUNTRY<sup>1</sup>

(Metric tons, tungsten content)

Period and country of origin	Ores and concentrates	Ammonium tungstates	Ferrotungsten	Metal powder	Tungsten carbide powder	Other <sup>2</sup>	Total	Total, year to date
2004	2,310	2,090	392	1,490	1,750	1,360	9,400	XX
2005:								
January	171	98	64	78	190	92	694	694
February	202	173	146	112	213	25	871	1,560
March:								
Australia	--	--	--	--	--	--	--	(3)
Austria	--	--	--	--	--	2	2	16
Belgium	--	--	--	(3)	--	1	2	5
Bolivia	39	--	--	--	--	--	39	139
Brazil	--	--	--	--	--	--	--	15
Canada	53	--	--	19	46	(3)	118	238
China	--	192	15	39	92	118	456	1,230
Czech Republic	--	--	--	--	--	(3)	(3)	1
France	--	--	--	--	1	(3)	1	3
Germany	--	17	--	66	1	5	89	140
Hong Kong	--	--	--	--	--	(3)	(3)	101
Hungary	--	--	--	--	--	(3)	(3)	1
India	--	--	--	--	--	(3)	(3)	2
Israel	--	--	--	30	34	(3)	64	156
Italy	--	--	--	--	--	--	--	(3)
Japan	--	--	--	2	--	5	7	16
Korea, Republic of	--	--	--	12	1	--	13	36
Luxembourg	--	--	--	--	--	--	--	(3)
Netherlands	--	--	--	(3)	--	(3)	(3)	(3)
New Zealand	--	--	--	--	--	(3)	(3)	(3)
Portugal	101	--	--	--	--	--	101	217
Russia	--	--	--	--	--	50	50	100
Rwanda	--	--	--	--	--	--	--	27
Singapore	--	--	--	--	--	3	3	3
Spain	--	--	--	--	--	--	--	(3)
Sweden	--	--	--	--	--	(3)	(3)	(3)
Switzerland	--	--	--	--	--	(3)	(3)	1
Taiwan	--	--	--	--	--	--	--	(3)
Thailand	--	--	--	--	--	--	--	44
United Kingdom	--	--	--	--	(3)	(3)	(3)	1
Vietnam	--	--	--	--	--	--	--	19
Total	193	209	15	169	175	187	948	2,510
Total, year to date	566	480	225	360	578	304	2,510	XX

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>Includes 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.

<sup>3</sup>Less than 1/2 unit.

Note: Imports of waste and scrap in March 2005 totaled 159 metric tons, tungsten content, to give a year-to-date total of 420 metric tons, tungsten content.

Source: U.S. Census Bureau.

TABLE 7  
U.S. EXPORTS OF TUNGSTEN, BY COUNTRY<sup>1</sup>

(Metric tons, tungsten content)

Period and country of destination	Ores and concentrates <sup>2</sup>	Ammonium tungstates	Metal powder <sup>2</sup>	Tungsten carbide powder	Other <sup>3</sup>	Total	Total, year to date
2004	43	125	433	1,440	1,210	3,240	XX
2005:							
January	(4)	1	39	121	101	263	263
February	4	--	68	133	116	322	584
March:							
Argentina	--	--	--	(4)	(4)	(4)	1
Australia	--	--	(4)	1	1	2	20
Austria	--	--	4	--	--	4	4
Belgium	--	--	--	(4)	--	(4)	1
Brazil	--	--	1	2	4	6	11
Canada	--	--	8	10	147	165	199
Chile	--	--	--	--	--	--	1
China	--	--	3	--	43	46	59
Columbia	--	--	--	--	1	1	2
Czech Republic	--	--	15	--	2	16	31
France	--	--	2	11	(4)	13	50
Germany	--	--	12	33	26	71	165
Hong Kong	--	--	--	--	(4)	(4)	1
Hungary	--	--	--	--	2	2	4
Iceland	--	--	--	7	--	7	7
India	--	2	(4)	(4)	(4)	2	5
Ireland	--	--	--	1	--	1	4
Israel	--	--	15	--	--	15	15
Italy	--	--	4	(4)	(4)	4	9
Japan	(4)	--	2	2	12	16	80
Korea, Republic of	--	--	(4)	--	3	3	16
Malaysia	--	--	--	--	(4)	(4)	6
Mexico	--	--	(4)	(4)	4	4	19
Netherlands	--	--	--	1	(4)	1	4
Philippines	--	--	--	--	--	--	1
Singapore	--	--	1	(4)	(4)	1	8
South Africa	--	--	--	6	--	6	12
Spain	--	--	5	(4)	2	7	12
Sweden	--	--	(4)	28	2	29	81
Switzerland	(4)	--	1	--	(4)	1	5
Taiwan	--	--	3	(4)	21	24	74
Turkey	--	--	(4)	1	--	1	2
United Kingdom	(4)	--	2	64	12	78	199
Venezuela	--	--	6	--	(4)	6	8
Other	--	--	--	(4)	1	1	2
Total	(4)	2	82	167	282	533	1,120
Total, year to date	5	2	189	422	499	1,120	XX

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>Tungsten content estimated from reported gross weight.

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

<sup>4</sup>Less than 1/2 unit.

Note: Estimated exports of waste and scrap in March 2005 totaled 147 metric tons, tungsten content, to give a year-to-date total of 193 metric tons, tungsten content.

Source: U.S. Census Bureau.