

# Mineral Industry Surveys

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## TUNGSTEN IN JUNE 2006

During the quarter ending June 30, 2006, U.S. net production of intermediate tungsten products, including metal powder and tungsten carbide powder, was 6% higher than net production during the quarter ending March 31, 2006, according to the U.S. Geological Survey. U.S. net production of intermediate tungsten products during the first half of 2006 was slightly higher than that of the first half of 2005.

Total U.S. reported consumption of ferrotungsten, tungsten metal powder, tungsten carbide powder, tungsten scrap, and other tungsten materials during the quarter ending June 30, 2006, was 6% higher than that consumed during the quarter ending March 31, 2006. U.S. reported consumption of these materials during the first half of 2006 was 5% higher than that during the first half of 2005. These materials were used to make alloys, cemented carbides, mill products, catalysts, and pigments.

Data for U.S. imports and exports for January through May 2006 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 July 1-31, 2006, are as follows:

Low—\$150/metric ton unit WO<sub>3</sub> (\$136/short ton unit WO<sub>3</sub>)  
High—\$170/metric ton unit WO<sub>3</sub> (\$154/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 Industry <sup>2</sup>	U.S. Gov- ernment <sup>3</sup>		Net production <sup>4</sup>	Reported consump- tion <sup>5</sup>	Stocks, end of period Industry <sup>6</sup>	U.S. Gov- ernment <sup>3</sup>
2005:									
June	W	140	W	27,200	386	739	923	772	564
July	W	122	W	27,100	324	538	831	749	564
August	W	135	W	26,700	516	743	1,040	837	546
September	W	73	W	26,700	295	660	915	847	518
October	W	224	W	26,500	383	651	854	880	403
November	W	227	W	26,100	411	609	810	828	403
December	W	249	W	26,100	296	561	872	800	282
January-December	W	2,080	XX	XX	4,550	7,810	10,800	XX	XX
2006:									
January	W	187	W	26,000	441	647	960 <sup>r</sup>	767	266
February	W	197	W	25,900	311	604	901 <sup>r</sup>	653	266
March	W	173	W	25,700	400	764	956 <sup>r</sup>	721	266
April	W	133	W	25,000	404	717	986 <sup>r</sup>	741	266
May	W	161	W	24,500	442	674	1,010 <sup>r</sup>	724	266
June	W	NA	W	24,100	427	739	997	739	266
Total	W	NA	XX	XX	2,430	4,140	5,810	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.

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>
2005:			
June	W	864	W
July	W	652	103
August	W	810	118
September	W	681	W
October	W	843	170
November	W	(3)	153
December	W	(3)	W
January-December	W	9,530	XX
2006:			
January	W	991	W
February	W	783	W
March	W	1,000	W
April	W	930	177
May	W	1,150	142
June	W	981	W
Total	W	5,840	XX

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

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		
	2006				2006		
	2005	May	June	Year to date	2005	May	June
Metal powder	3,150	254	285	1,670	395	390	393
Tungsten carbide powder	4,660	419	454	2,470	405	334	346
Total	7,810	674	739	4,140	800	724	739

<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	2006		
	May	June	Year to date
Steels	22	23	129
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>	492	2,970
Mill products made from metal powder	W	W	W
Chemical uses	W	W	W
Miscellaneous and unspecified	487	482	2,710
Total	1,010 <sup>r</sup>	997	5,810

<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>						
2005:						
June	20	W	500	W	6	923
July	19	W	493	W	6	831
August	19	W	497	W	6	1,040
September	19	W	490	W	6	915
October	19	W	493	W	6	854
November	19	W	494	W	6	810
December	19	W	493	W	6	872
January-December	231	W	5,930	W	73	10,800
2006:						
January	19	W	500 <sup>r</sup>	W	6	960 <sup>r</sup>
February	19	W	481 <sup>r</sup>	W	6	901 <sup>r</sup>
March	18 <sup>r</sup>	W	486 <sup>r</sup>	W	6	956 <sup>r</sup>
April	19	W	478 <sup>r</sup>	W	6	986 <sup>r</sup>
May	19	W	494 <sup>r</sup>	W	6	1,010 <sup>r</sup>
June	20	W	484	W	6	997
Total	113	W	2,920	W	36	5,810
<b>Stocks:</b>						
2005:						
June	27	28	401	38	9	504
July	26	28	415	31	9	508
August	25	32	386	31	9	482
September	24	29	401	30	9	493
October	23	26	436	33	9	527
November	21	26	426	30	9	512
December	21	26	394	29	9	478
2006:						
January	20	26	369 <sup>r</sup>	28	9	452 <sup>r</sup>
February	24	26	372 <sup>r</sup>	34	9	466 <sup>r</sup>
March	24	26	369 <sup>r</sup>	30	9	457 <sup>r</sup>
April	23	26	368 <sup>r</sup>	29	9	455 <sup>r</sup>
May	22	25	370 <sup>r</sup>	38 <sup>r</sup>	9	464 <sup>r</sup>
June	24	25	374	43	9	475

<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	Ferro-tungsten	Metal powder	Tungsten carbide powder	Other <sup>2</sup>	Total	Total, year to date
2005	2,080	1,920	385	1,530	1,690	1,480	9,090	XX
2006:								
March	173	239	--	105	143	110	770	2,170
April	133	389	54	176	167	149	1,070	3,240
May:								
Australia	--	--	--	--	--	(3)	(3)	24
Austria	--	--	--	(3)	--	1	2	8
Belgium	--	--	--	--	--	1	1	3
Bolivia	99	--	--	--	--	--	99	270
Canada	--	--	--	8	30	(3)	38	359
China	--	371	31	17	126	132	676	2,370
Congo (Kinshasa)	--	--	--	--	--	--	--	21
Czech Republic	--	--	--	--	--	(3)	(3)	10
France	--	--	--	--	1	(3)	1	4
Germany	--	--	--	50	2	6	58	303
Hong Kong	--	--	--	--	--	1	1	2
Hungary	--	--	--	--	--	(3)	(3)	2
India	--	--	--	--	--	(3)	(3)	1
Israel	--	--	--	30	--	1	31	242
Japan	--	--	--	(3)	--	2	2	17
Korea, Republic of	--	--	--	12	1	(3)	14	93
Mexico	--	--	--	--	--	--	--	15
Netherlands	--	--	10	--	--	(3)	10	10
Portugal	62	--	--	--	--	--	62	289
Russia	--	--	--	--	--	(3)	(3)	19
Rwanda	--	--	--	--	--	--	--	70
Singapore	--	--	--	--	--	(3)	(3)	3
South Africa	--	--	--	--	--	5	5	10
Spain	--	--	--	--	--	(3)	(3)	4
Sweden	--	--	--	--	(3)	(3)	(3)	17
Thailand	--	--	--	--	--	--	--	36
Ukraine	--	--	--	--	--	--	--	1
United Kingdom	--	--	--	--	(3)	(3)	(3)	1
Uzbekistan	--	--	--	--	--	--	--	34
Other	--	--	--	--	--	(3)	(3)	1
Total	161	371	40	118	159	151	999	4,240
Total, year to date	851	1,300	142	683	710	549	4,240	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 ½ unit.

Note: Imports of waste and scrap in May 2006 totaled 144 metric tons, tungsten content, to give a year-to-date total of 806 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
2005	52	774	750	1,560	1,950	5,080	XX
2006:							
March	1	3	74	72	268	418	1,280
April	(4)	38	70	93	1,010	1,220	2,500
May:							
Argentina	--	--	--	(4)	--	(4)	1
Australia	--	--	(4)	(4)	--	(4)	7
Austria	--	--	--	(4)	--	(4)	1
Belgium	--	--	(4)	(4)	(4)	(4)	4
Brazil	--	--	1	--	1	2	13
Canada	--	--	7	7	7	21	135
China	10	--	(4)	--	2	12	255
Colombia	--	--	--	--	(4)	(4)	2
Czech Republic	(4)	--	--	--	3	3	74
Denmark	--	--	--	--	4	4	5
France	(4)	--	2	13	1	15	61
Germany	--	16	39	10	7	71	426
Hungary	--	--	--	--	(4)	(4)	12
India	--	--	(4)	2	(4)	2	12
Indonesia	--	--	--	--	(4)	(4)	1
Ireland	--	--	--	1	(4)	1	7
Israel	--	--	--	--	1	1	9
Italy	--	--	3	(4)	(4)	4	24
Japan	--	--	1	1	8	10	80
Korea, Republic of	--	--	(4)	--	(4)	(4)	9
Luxembourg	--	--	--	(4)	--	(4)	1
Malaysia	--	--	--	--	3	3	13
Mexico	--	--	17	(4)	10	27	71
Netherlands	--	--	--	--	(4)	(4)	917
Norway	--	--	--	1	(4)	1	2
Peru	--	--	--	--	--	--	3
Philippines	--	--	--	--	--	--	22
Poland	--	--	--	--	--	--	1
Saudi Arabia	--	--	--	--	(4)	(4)	2
Singapore	--	--	1	(4)	10	10	30
South Africa	--	--	(4)	(4)	--	(4)	28
Spain	--	--	(4)	--	--	(4)	7
Sweden	--	--	--	(4)	5	5	40
Switzerland	--	--	(4)	--	(4)	(4)	1
Taiwan	(4)	--	4	1	1	6	105
Thailand	--	--	(4)	--	--	(4)	1
Turkey	--	--	(4)	--	(4)	(4)	1
United Arab Emirates	--	--	(4)	--	(4)	(4)	1
United Kingdom	--	--	4	46	51	101	389
Venezuela	--	--	--	6	(4)	6	33
Other	--	--	--	(4)	(4)	(4)	4
Total	10	16	80	88	114	309	2,810
Total, year to date	95	119	403	421	1,770	2,810	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 ½ unit.

Note: Estimated exports of waste and scrap in May 2006 totaled 17 metric tons, tungsten content, to give a year-to-date total of 725 metric tons, tungsten content.

Source: U.S. Census Bureau.