

# Mineral Industry Surveys

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## TUNGSTEN IN JUNE 2007

During the quarter ending June 30, 2007, U.S. net production of intermediate tungsten products, including metal powder and tungsten carbide powder, was nearly equal in amount to net production during the quarter ending March 31, 2007, according to the U.S. Geological Survey. U.S. net production of intermediate tungsten products during the first half of 2007 was 5% higher than that of the first half of 2006.

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, 2007, was nearly equal in amount to that consumed during the quarter ending March 31, 2007. U.S. reported consumption of these materials during the first half of 2007 was nearly equal in amount to that during the first half of 2006. These materials

were used to make alloys, cemented carbides, mill products, catalysts, and pigments.

U.S. trade data for May 2007 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 price range during July 2007 was as follows:

Low—\$160/metric ton unit WO<sub>3</sub> (\$145/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>
2006:									
June	W	185	W	24,100	338	716	991	770	266
July	W	230	W	24,100	248	556	871	758	266
August	W	91	W	24,100	(7)	673	1,030	768	266
September	W	180	W	23,300	(7)	720	1,000	773	266
October	W	212	W	23,100	266	668	1,020	766	266
November	W	256	W	22,900	343	650	958	761	266
December	W	289	W	22,900	353	646	960	827	266
January-December	W	2,290	XX	XX	4,370	8,050	12,000	XX	XX
2007:									
January	W	266	W	22,900	439	659	1,020	872	266
February	W	322	W	22,400	317	649	1,020	844	266
March	W	420	W	22,200	433	862	1,030	809	266
April	W	152	W	22,200	385	789	1,020	746	266
May	W	558	W	19,200	252	681	1,030	763	266
June	W	359	W	22,100	431	724	1,020	810	266
Total	W	2,080	XX	XX	2,260	4,370	6,130	XX	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>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 "Total."

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>
2006:			
June	W	1,010	60
July	W	753	56
August	W	830	78
September	W	992	36
October	W	1,010	67
November	W	900	67
December	W	866	W
January-December	W	11,300	XX
2007:			
January	W	941	98
February	W	886	83
March	W	1,140	37
April	W	W	101
May	W	W	110
June	W	1,230	94
Total	W	6,080	XX

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

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		
	2007				2007		
	2006	May	June	Year to date	2006	May	June
Metal powder	3,260	284	331	1,920	411	373	396
Tungsten carbide powder	4,800	398	394	2,450	415	390	414
Total	8,050	681	724	4,370	827	763	810

<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	2007		
	May	June	Year to date
Steels	20	21	126
Superalloys	W	W	W
Other alloys (excludes steels and superalloys) <sup>4</sup>	W	W	W
Cemented carbides <sup>5</sup>	546	548	3,260
Mill products made from metal powder	W	W	W
Chemical uses	W	W	W
Miscellaneous and unspecified	460	446	2,740
Total	1,030	1,020	6,130

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>						
2006:						
June	20	W	539	W	6	991
July	21	W	537	W	6	871
August	22	W	536	W	6	1,030
September	20	W	537	W	6	1,000
October	28	W	538	W	6	1,020
November	20	W	546	W	6	958
December	20	W	534	W	6	960
January-December	245	W	6,490	W	72	12,000
2007:						
January	20	W	538	W	6	1,020
February	21	W	532	W	6	1,020
March	20	W	536	W	6	1,030
April	19	W	531	W	6	1,020
May	19	W	540	W	6	1,030
June	20	W	535	W	6	1,020
Total	118	W	3,210	W	36	6,130
<b>Stocks:</b>						
2006:						
June	24	25	372	48	9	478
July	23	29	372	41	9	473
August	21	27	351	45	9	454
September	20	25	355	40	9	449
October	19	26	357	35	9	446
November	20	26	354	32	9	440
December	18	26	355	34	9	442
2007:						
January	19	28	361	36	9	452
February	17	28	356	31	9	441
March	19	14	353	38	9	433
April	18	13	360	36	9	436
May	18	13	360	34	9	434
June	17	12	357	33	9	428

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
2006	2,290	2,900	265	1,740	1,600	1,770	10,600	XX
2007:								
March	420	260	31	138	95	94	1,040	2,860
April	152	356	47	134	87	105	882	3,740
May:								
Austria	--	--	--	--	--	2	2	10
Belgium	--	--	--	--	--	(3)	(3)	4
Bolivia	218	--	--	--	--	--	218	644
Brazil	52	--	--	--	--	--	52	62
Canada	119	--	--	10	51	--	180	544
China	(3)	158	15	31	94	137	435	2,030
Czech Republic	--	--	--	--	--	(3)	(3)	3
France	--	--	--	--	(3)	(3)	(3)	3
Germany	--	17	--	46	5	10	78	341
Hong Kong	--	--	--	--	--	1	1	6
India	--	--	--	--	1	1	1	20
Ireland	--	--	--	--	--	2	2	4
Israel	--	--	--	14	26	9	48	337
Italy	--	--	--	--	--	11	11	11
Japan	--	--	--	(3)	--	1	1	26
Korea, Republic of	--	--	--	28	2	(3)	30	91
Mexico	--	--	--	--	(3)	(3)	(3)	20
Mongolia	--	--	--	--	--	--	--	25
Netherlands	--	--	--	--	--	(3)	(3)	28
Peru	46	--	--	--	--	--	46	154
Portugal	82	--	--	--	--	--	82	289
Russia	--	--	--	--	--	--	--	38
Rwanda	41	--	--	--	--	--	41	165
Singapore	--	--	--	--	--	4	4	15
South Africa	--	--	--	--	--	6	6	13
Thailand	--	--	--	--	--	--	--	62
United Kingdom	--	--	--	--	(3)	1	1	3
Uzbekistan	--	--	--	--	--	15	15	44
Vietnam	--	--	--	--	--	10	10	10
Other	--	--	--	--	--	1	1	4
Total	558	176	15	128	179	211	1,270	5,010
Total, year to date	1,720	1,110	167	680	617	720	5,010	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 2007 totaled 119 metric tons, tungsten content, to give a year-to-date total of 564 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
2006	130	350	959	1,010	2,670	5,130	XX
2007:							
March	1	56	75	115	145	392	1,120
April	65	31	100	74	135	405	1,530
May:							
Australia	--	--	1	3	1	6	14
Austria	--	--	--	--	--	--	2
Brazil	--	--	(4)	--	9	9	29
Canada	--	--	11	6	12	29	136
China	7	--	4	1	6	18	32
Colombia	--	--	--	--	(4)	(4)	2
Costa Rica	--	--	--	--	(4)	(4)	1
Czech Republic	--	--	--	--	1	1	24
Denmark	--	--	--	--	--	--	6
Egypt	--	--	(4)	--	--	1	1
France	--	--	2	13	2	18	77
Germany	--	60	24	25	19	128	737
Hungary	--	--	(4)	--	2	2	6
India	--	--	(4)	3	(4)	3	19
Ireland	--	--	--	--	--	--	4
Israel	--	--	--	--	(4)	(4)	10
Italy	--	--	2	1	(4)	3	8
Japan	(4)	--	(4)	(4)	7	8	49
Korea, Republic of	--	--	--	--	1	1	6
Malaysia	--	--	(4)	--	--	(4)	3
Mexico	--	--	33	--	8	41	140
Netherlands	--	--	--	--	(4)	(4)	63
Peru	--	--	(4)	(4)	--	(4)	2
Philippines	--	--	--	--	4	4	9
Singapore	--	--	2	(4)	1	3	22
South Africa	--	--	(4)	14	(4)	15	31
Spain	--	--	(4)	--	2	2	6
Sweden	--	--	12	6	5	23	89
Switzerland	--	--	(4)	--	(4)	(4)	4
Taiwan	--	--	5	1	--	6	58
United Kingdom	--	--	2	13	36	51	278
Venezuela	--	--	1	--	--	1	18
Other	--	--	1	(4)	(4)	1	9
Total	7	60	99	87	118	372	1,900
Total, year to date	82	286	414	510	606	1,900	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 2007 totaled 236 metric tons, tungsten content, to give a year-to-date total of 730 metric tons, tungsten content.

Source: U.S. Census Bureau.