

# Mineral Industry Surveys

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## TUNGSTEN IN FEBRUARY 2007

U.S. net production of intermediate tungsten products, including metal powder and tungsten carbide powder, was 4% higher during January through February 2007 than net production during the same period in 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 through February 2007 was slightly higher than that consumed during the same period in 2006. These materials were used to make alloys, cemented carbides, mill products, catalysts, and pigments.

U.S. trade data for January 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 prices for March 1-31, 2007, are 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:									
February	W	197	W	25,900	317	606	915	652	266
March	W	173	W	25,700	400	766	965	720	266
April	W	133	W	25,000	405	719	995	739	266
May	W	161	W	24,500	493	687	1,010	792	266
June	W	185	W	24,100	338	716	933	770	266
July	W	230	W	24,100	248	556	814	758	266
August	W	91	W	24,100	(7)	673	972	768	266
September	W	180	W	23,300	(7)	720	944	773	266
October	W	212	W	23,100	266	668	967	766	266
November	W	256	W	22,900	343	650	900	761	266
December	W	289	W	22,900	353	646	901	827	266
January-December	W	2,290	XX	XX	4,370	8,060	11,300	XX	XX
2007:									
January	W	266	W	22,900	439	659	965	872	266
February	W	322	W	22,400	317	649	960	844	266
Total	W	588	XX	XX	756	1,310	1,920	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:			
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	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
Total	W	1,830	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.

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	January	February	Year to date	2006	January	February
Metal powder	3,260	265	309	574	411	430	459
Tungsten carbide powder	4,800	394	340	734	415	442	386
Total	8,060	659	649	1,310	827	872	844

<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		
	January	February	Year to date
Steels	21	22	43
Superalloys	W	W	W
Other alloys (excludes steels and superalloys) <sup>4</sup>	W	W	W
Cemented carbides <sup>5</sup>	486	483	969
Mill products made from metal powder	W	W	W
Chemical uses	W	W	W
Miscellaneous and unspecified	457	454	912
Total	965	960	1,920

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:						
February	19	W	481	W	6	915
March	19	W	487	W	6	965
April	19	W	477	W	6	995
May	19	W	495	W	6	1,010
June	20	W	482	W	6	933
July	21	W	480	W	6	814
August	22	W	479	W	6	972
September	20	W	479	W	6	944
October	28	W	480	W	6	967
November	20	W	489	W	6	900
December	20	W	475	W	6	901
January-December	245	W	5,810	W	72	11,300
2007:						
January	20	W	480	W	6	965
February	21	W	475	W	6	960
Total	40	W	955	W	12	1,920
<b>Stocks:</b>						
2006:						
February	24	26	373	41	9	473
March	24	26	369	38	9	465
April	23	26	368	35	9	461
May	22	25	370	43	9	469
June	24	25	375	48	9	481
July	23	29	374	41	9	476
August	21	27	354	45	9	456
September	20	25	358	40	9	451
October	19	26	360	35	9	449
November	20	26	357	32	9	443
December	18	26	358	34	9	445
2007:						
January	19	28	364	36	9	455
February	17	28	359	31	9	443

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
2006	2,290	2,900	265	1,740	1,600	1,770	10,600	XX
2007, January:								
Austria	--	--	--	--	--	3	3	3
Belgium	--	--	--	--	--	2	2	2
Bolivia	184	--	--	--	--	--	184	184
Canada	--	--	--	22	25	--	47	47
China	--	226	16	91	98	169	599	599
France	--	--	--	--	(3)	1	1	1
Germany	--	6	--	54	2	13	75	75
Hong Kong	--	--	--	--	--	1	1	1
Israel	--	--	--	37	28	6	71	71
Japan	--	--	--	(3)	(3)	2	2	2
Korea, Republic of	--	--	--	17	--	(3)	17	17
Peru	26	--	--	--	--	--	26	26
Portugal	21	--	--	--	--	--	21	21
Russia	--	--	--	--	--	1	1	1
Rwanda	21	--	--	--	--	--	21	21
Singapore	--	--	--	--	--	2	2	2
South Africa	--	--	--	--	7	--	7	7
Thailand	15	--	--	--	--	--	15	15
Other	--	--	--	--	(3)	1	2	2
Total	266	232	16	221	160	203	1,100	1,100
Total, year to date	266	232	16	221	160	203	1,100	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 January 2007 totaled 50 metric tons, tungsten content, to give a year-to-date total of 50 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, January:							
Brazil	--	--	1	(4)	2	4	4
Canada	--	--	8	6	21	34	34
China	--	--	2	(4)	(4)	3	3
Czech Republic	--	--	--	(4)	3	4	4
France	--	--	1	10	(4)	12	12
Germany	--	84	47	64	21	216	216
India	--	--	(4)	4	--	5	5
Italy	--	--	(4)	(4)	(4)	1	1
Japan	--	--	(4)	1	3	4	4
Korea, Republic of	--	--	(4)	(4)	1	2	2
Malaysia	--	--	--	2	(4)	2	2
Mexico	--	--	--	(4)	10	10	10
Singapore	--	--	1	(4)	3	4	4
South Africa	--	--	--	1	--	1	1
Spain	--	--	(4)	--	1	1	1
Switzerland	--	--	2	--	--	2	2
Taiwan	--	--	6	--	3	9	9
United Kingdom	--	--	1	33	25	59	59
Venezuela	--	--	(4)	1	(4)	1	1
Other	--	--	1	1	3	5	5
Total	--	84	71	124	96	375	375
Total, year to date	--	84	71	124	96	375	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 January 2007 totaled 60 metric tons, tungsten content, to give a year-to-date total of 60 metric tons, tungsten content.

Source: U.S. Census Bureau.