

# Mineral Industry Surveys

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## TUNGSTEN IN OCTOBER 2007

U.S. net production of intermediate tungsten products, including metal powder and tungsten carbide powder, during January through October 2007, was 4% higher than net production during the same period in 2006 (revised), 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 October 2007 was slightly greater than that consumed during the same period in 2006 (revised). They were used to make alloys, cemented carbides, mill products, and other products, such as catalysts and pigments.

Data for U.S. imports and exports for July through September 2007 and September year-to-date 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 November 1-30, 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				Intermediate products				
	Reported consumption	Imports for consumption	Stocks, end of period Industry <sup>2</sup>	U.S. Government <sup>3</sup>	Reported scrap consumption	Net production <sup>4</sup>	Reported consumption <sup>5</sup>	Stocks, end of period Industry <sup>6</sup>	U.S. Government <sup>3</sup>
2006:									
October	W	212	W	23,100	266	668	1,030	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	8,060	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
July	W	344	W	21,400	333	550	1,020	697	266
August	W	315	W	21,400	317	694	1,030	801	268
September	W	344	W	21,300	263	837	1,020	781	268
October	W	299	W	21,300	502	614	1,020	795	268
Total	W	3,380	XX	XX	3,670	7,060	10,200	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. Data through June 2007 include material committed for sale pending shipment; data from July 2007 onward are uncommitted material only.

<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>
2006:			
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	(3)	101
May	W	(3)	110
June	W	1,230	94
July	W	(3)	W
August	W	1,050	W
September	W	1,100	W
October	W	1,010	W
Total	W	9,870	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	2007		Year to date	2006	2007	
		September	October			September	October
Metal powder	3,260	477	240	3,230	411	380	394
Tungsten carbide powder	4,800	359	374	3,830	415	401	401
Total	8,060	837	614	7,060	827	781	795

<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		
	September	October	Year to date
Steels	22	27	226
Superalloys	W	W	W
Other alloys (excludes steels and superalloys) <sup>4</sup>	W	W	W
Cemented carbides <sup>5</sup>	549	543	5,450
Mill products made from metal powder	W	W	W
Chemical uses	W	W	W
Miscellaneous and unspecified	450	448	4,540
Total	1,020	1,020	10,200

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
Consumption:						
2006:						
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
July	20	W	532	W	6	1,020
August	20	W	534	W	6	1,030
September	20	W	528	W	6	1,020
October	20	W	533	W	6	1,020
January-October	197	W	5,340	W	60	10,200
Stocks:						
2006:						
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
July	17	14	356	28	9	423
August	16	13	349	27	9	414
September	14	13	352	27	9	415
October	16	13	359	28	9	425

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:								
July:	344	286	27	169	157	151	1,130	7,280
August:	315	170	--	127	153	160	925	8,210
September:								
Austria	--	--	--	--	--	3	3	20
Belgium	--	--	--	--	(3)	(3)	(3)	7
Bolivia	160	--	--	--	--	--	160	1,030
Brazil	10	--	--	--	--	--	10	134
Canada	61	--	--	8	11	--	80	933
China	--	176	8	5	40	131	360	3,810
Czech Republic	--	--	--	--	--	(3)	(3)	4
France	--	--	--	--	(3)	(3)	1	11
Germany	--	17	--	12	2	40	72	765
Hong Kong	--	--	--	--	--	(3)	(3)	9
Hungary	--	--	--	--	--	(3)	(3)	3
India	--	--	--	--	--	2	2	32
Ireland	--	--	--	--	--	--	--	4
Israel	--	--	--	20	13	2	36	533
Italy	--	--	--	--	--	--	--	11
Japan	--	--	--	(3)	--	3	3	41
Korea, Republic of	--	--	--	7	(3)	(3)	8	139
Mexico	--	--	--	--	--	(3)	(3)	28
Mongolia	14	--	--	--	--	--	14	52
Netherlands	--	--	--	--	--	8	8	36
Peru	37	--	--	--	--	--	37	308
Portugal	31	--	--	--	--	--	31	516
Russia	26	--	--	--	--	16	42	123
Rwanda	--	--	--	--	--	--	--	259
Singapore	--	--	--	--	--	1	1	23
South Africa	--	--	--	--	--	1	1	14
Sweden	--	--	--	--	--	(3)	(3)	19
Thailand	--	--	--	--	--	--	--	111
Uganda	6	--	--	--	--	--	6	14
United Kingdom	--	--	--	--	--	1	1	21
Uzbekistan	--	--	--	--	--	2	2	64
Vietnam	--	--	--	--	--	--	--	10
Other	--	--	--	--	--	(3)	(3)	3
Total	344	193	8	53	67	211	877	9,080
Total, year to date	3,080	2,140	217	1,160	1,120	1,370	9,080	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 September 2007 totaled 94 metric tons, tungsten content, to give a year-to-date total of 1,110 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:							
July	(4)	52	78	86	118	335	2,670
August	--	46	84	117	68	315	2,980
September:							
Australia	--	--	1	(4)	(4)	1	29
Austria	--	--	--	--	(4)	(4)	2
Bolivia	17	--	--	--	--	17	17
Brazil	--	--	2	(4)	4	6	45
Canada	--	--	10	7	23	39	277
Chile	--	--	1	1	--	1	3
China	--	--	1	1	1	3	57
Colombia	--	--	(4)	--	(4)	(4)	3
Costa Rica	--	--	--	--	(4)	(4)	3
Czech Republic	--	--	--	--	1	1	29
Denmark	--	--	--	--	--	--	9
France	--	--	1	12	1	13	124
Germany	--	81	6	24	8	119	1,320
Hungary	--	--	--	--	1	1	11
India	--	--	--	2	(4)	2	29
Ireland	--	--	--	1	--	1	6
Israel	--	--	(4)	8	1	8	43
Italy	--	2	1	--	(4)	2	18
Japan	--	--	1	1	9	11	95
Korea, Republic of	--	(4)	--	--	(4)	(4)	9
Luxembourg	--	--	--	(4)	--	(4)	2
Malaysia	--	--	--	--	--	--	13
Mexico	--	--	32	(4)	9	41	264
Netherlands	--	--	--	--	(4)	(4)	85
Peru	--	--	1	2	(4)	3	7
Philippines	--	--	--	--	(4)	(4)	13
Singapore	--	--	3	(4)	3	6	46
South Africa	--	--	(4)	6	--	6	52
Spain	--	--	(4)	--	3	3	16
Sweden	--	--	--	--	--	--	91
Switzerland	--	--	(4)	1	(4)	1	7
Taiwan	--	--	(4)	1	3	4	106
United Kingdom	--	--	3	20	4	27	427
Venezuela	--	--	--	5	--	5	39
Other	--	--	(4)	--	(4)	(4)	15
Total	17	82	62	91	72	324	3,310
Total, year to date	107	582	734	926	957	3,310	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 September 2007 totaled 131 metric tons, tungsten content, to give a year-to-date total of 1,210 metric tons, tungsten content.

Source: U.S. Census Bureau.