

# Mineral Industry Surveys

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## TUNGSTEN IN JULY 2010

The following comparisons are based on preliminary data. Total U.S. net production of intermediate tungsten products, including metal powder and tungsten carbide powder, was 79% more during January through July 2010 than net production during the same period in 2009, 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 July 2010 was 32% more than consumption during the same period in 2009. These materials were used to make alloys, cemented carbides, mill products, and other products, such as catalysts and pigments.

Data for U.S. imports and exports of tungsten for January through June 2010 and full year 2009 totals by material are published in this issue.

### Prices

Selected prices from Metal Bulletin for July 2010 are listed below. U.S. ammonium paratungstate prices in dollars per

metric ton unit were converted from short-ton-unit prices and rounded to the nearest dollar. Prices for tungsten ore concentrates represent combined prices for wolframite and scheelite concentrates with a minimum tungsten trioxide (WO<sub>3</sub>) content of 65%. Concentrate prices in dollars per short ton unit were converted from metric-ton-unit prices and rounded to the nearest dollar.

Ammonium paratungstate, U.S. free market:

Low—\$176/metric ton unit WO<sub>3</sub> (\$160/short ton unit WO<sub>3</sub>)  
High—\$204/metric ton unit WO<sub>3</sub> (\$185/short ton unit WO<sub>3</sub>)

Concentrates:

Low—\$140/metric ton unit WO<sub>3</sub> (\$127/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 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>
2009:									
July	W	289	W	19,700	286	300	586 <sup>r</sup>	635	183
August	W	270	W	19,700	219	411	668 <sup>r</sup>	656	183
September	W	165	W	19,700	315	440	704 <sup>r</sup>	708	172
October	W	289	W	19,500	392	665	796 <sup>r</sup>	750	172
November	W	150	W	19,300	371	575	761 <sup>r</sup>	727	172
December	W	306	W	19,000	356	589	778 <sup>r</sup>	682	171
January-December	W	3,590	XX	XX	3,460	5,300	8,070 <sup>r</sup>	XX	XX
2010:									
January	W	173	W	18,800	418	584	826	674	171
February	W	249	W	18,600	303	588	756	749	171
March	W	181	W	18,300	455	689	808	739	171
April	W	279	W	17,700	369	638	835	676	169
May	W	160	W	17,700	426	743	817	745	169
June	W	246	W	17,700	426	759	872 <sup>r</sup>	702	169
July	W	221	W	17,000	398	691	843	711	169
Total	W	1,510	XX	XX	2,800	4,690	5,760	XX	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>Reported by consumers.

<sup>3</sup>Data from Defense National Stockpile Center. Data 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>
2009:			
July	W	311	W
August	W	535	W
September	W	(3)	W
October	W	(3)	W
November	W	667	97
December	W	(3)	100
January-December	W	6,860	XX
2010:			
January	W	829 <sup>r</sup>	185 <sup>r</sup>
February	W	761 <sup>r</sup>	173 <sup>r</sup>
March	W	822 <sup>r</sup>	124 <sup>r</sup>
April	W	929 <sup>r</sup>	W
May	W	777 <sup>r</sup>	W
June	W	810	127 <sup>r</sup>
July	W	727	110
Total	W	5,660	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>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		
	2009	2010		Year to date	2009	2010	
		June	July			June	July
Metal powder	2,880	373	333	2,340	379	388	389
Tungsten carbide powder	2,420	386	358	2,350	304	314	321
Total	5,300	759	691	4,690	682	702	711

<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	2010		
	June	July	Year to date
Steels	20	21	144
Superalloys	W	W	W
Other alloys (excludes steels and superalloys) <sup>4</sup>	W	W	W
Cemented carbides <sup>5</sup>	419	418	2,920
Mill products made from metal powder	W	W	W
Chemical uses	W	W	W
Miscellaneous and unspecified	433 <sup>r</sup>	404	2,690
Total	872 <sup>r</sup>	843	5,760

<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>						
<b>2009:</b>						
July	20	W	406 <sup>r</sup>	W	6	586 <sup>r</sup>
August	20	W	405 <sup>r</sup>	W	6	668 <sup>r</sup>
September	20	W	406 <sup>r</sup>	W	6	704 <sup>r</sup>
October	20	W	406 <sup>r</sup>	W	6	796 <sup>r</sup>
November	20	W	407 <sup>r</sup>	W	6	761 <sup>r</sup>
December	20	W	406 <sup>r</sup>	W	6	778 <sup>r</sup>
January-December	238	W	4,880 <sup>r</sup>	W	74	8,070 <sup>r</sup>
<b>2010:</b>						
January	20	W	408	W	6	826
February	20	W	407	W	6	756
March	20	W	408	W	6	808
April	20	W	410	W	6	835
May	21	W	408	W	8	817
June	20	W	411	W	9	872 <sup>r</sup>
July	20	W	410	W	9	843
Total	141	W	2,860	W	50	5,760
<b>Stocks:</b>						
<b>2009:</b>						
July	15	25	387	55	10	492
August	15	25	387	55	10	492
September	15	25	387	50	10	486
<b>October</b>	<b>15</b>	<b>25</b>	<b>387</b>	<b>48</b>	<b>10</b>	<b>484</b>
November	15	25	387	57	10	493
December	15	24	387	47	10	484
<b>2010:</b>						
January	15	24	387	46	9	481
February	15	24	387	50	9	484
March	15	23	387	49	9	484
April	15	25	387	57	9	493
May	15	24	387	53	20	499
June	15	28	387	49	17	497
July	15	29	386	51	14	495

<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		Total	Total, year to date
					carbide powder	Other <sup>2</sup>		
2009	3,590	2,540	46	837	753	1,360	9,120	XX
2010:								
April	279	205	7	101	75	217	884	3,490
May	160	108	12	70	142	99	590	4,080 <sup>†</sup>
June:								
Australia	--	--	--	--	--	--	--	4
Austria	--	--	--	--	3	4	7	32
Belgium	--	--	--	--	1	2	3	32
Bolivia	103	--	--	--	--	--	103	459
Canada	--	--	--	1	8	--	9	69
China	--	186	70	32	105	166	558	2,800
Czech Republic	--	--	--	--	1	(3)	1	6
France	--	--	--	--	(3)	1	1	5
Germany	--	--	--	26	9	4	39	225
Hong Kong	--	--	--	--	--	16	16	37
Hungary	--	--	--	--	--	1	1	5
India	--	--	--	--	--	2	2	3
Ireland	--	--	--	--	--	62	62	62
Israel	--	--	--	53	16	5	74	274
Japan	--	--	--	3	(3)	1	4	31
Korea, Republic of	--	--	--	47	--	--	47	183
Mexico	--	--	--	--	--	--	--	7
Netherlands	--	--	--	--	--	(3)	(3)	15
Peru	45	--	--	--	--	--	45	258
Portugal	62	--	--	--	--	--	62	323
Russia	--	--	--	--	--	1	1	3
Rwanda	23	--	--	--	--	--	23	53
Singapore	--	--	--	--	5	(3)	5	11
South Africa	--	--	--	--	--	16	16	32
Spain	--	--	--	(3)	--	(3)	(3)	69
Sweden	--	--	--	--	2	(3)	2	35
Taiwan	--	--	--	--	--	--	--	16
Thailand	13	--	--	--	--	--	13	54
Uganda	--	--	--	--	--	--	--	42
United Kingdom	--	--	--	--	(3)	1	1	27
Vietnam	--	--	--	--	--	--	--	4
Other	--	--	--	--	--	(3)	(3)	(3)
Total	246	186	70	162	150	283	1,100	5,180
Total, year to date	1,290	1,070	153	655	718	1,300	5,180	XX

<sup>†</sup>Revised. 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 June 2010 totaled 104 metric tons, tungsten content, to give a year-to-date total of 628 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
2009	38	375	360	469	543	1,790	XX
2010:							
April	52	57	110	108	83	411	1,020
May	146	1	70	70	130	417	1,440
June:							
Australia	--	--	--	(4)	2	2	15
Austria	--	--	(4)	(4)	--	(4)	39
Belgium	--	--	--	--	(4)	(4)	40
Brazil	--	2	1	1	9	13	33
Canada	--	--	6	15	12	34	203
China	--	--	1	3	(4)	5	23
Columbia	--	--	--	1	(4)	1	5
Czech Republic	--	--	--	--	3	3	14
France	--	--	(4)	--	2	2	19
Germany	--	54	64	20	47	185	956
Hong Kong	--	--	--	(4)	--	(4)	11
Hungary	--	4	--	--	(4)	4	12
India	--	--	1	(4)	(4)	1	30
Indonesia	--	--	(4)	1	1	3	10
Ireland	--	--	--	7	(4)	8	19
Israel	--	--	(4)	--	--	(4)	4
Italy	--	--	--	--	(4)	(4)	4
Japan	--	--	1	1	1	3	23
Korea, Republic of	--	--	--	1	3	4	8
Mexico	--	--	1	1	4	6	27
Netherlands	--	--	9	--	1	10	37
New Zealand	--	--	--	--	--	--	3
Peru	--	--	--	1	--	1	3
Saudi Arabia	--	--	--	--	--	--	6
Singapore	--	--	1	1	(4)	2	16
South Africa	--	--	(4)	16	--	16	42
Spain	--	--	--	--	1	1	5
Sweden	--	--	(4)	--	1	1	20
Switzerland	--	--	--	--	--	--	7
Taiwan	--	--	1	21	(4)	23	48
United Arab Emirates	1	--	1	--	--	2	3
United Kingdom	--	--	6	(4)	1	7	55
Venezuela	--	--	--	2	(4)	2	19
Vietnam	2	--	--	--	(4)	3	8
Other	--	--	(4)	1	1	2	14
Total	4	60	93	95	90	342	1,780
Total, year to date	256	255	410	414	446	1,780	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 June 2010 totaled 32 metric tons, tungsten content, to give a year-to-date total of 292 metric tons, tungsten content.

Source: U.S. Census Bureau.