

# Mineral Industry Surveys

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## TUNGSTEN IN FEBRUARY 2011

The following comparisons are based on preliminary data. U.S. net production of intermediate tungsten products, including metal powder and tungsten carbide powder, was 22% more during January through February 2011 than net production during the same period in 2010, 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 2011 was 4% higher than that consumed during the same period in 2010. 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 2011 and full year 2010 totals by material and country are published in this issue.

### Prices

Selected prices from Metal Bulletin for February 2011 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—\$336/metric ton unit WO<sub>3</sub> (\$305/short ton unit WO<sub>3</sub>)  
High—\$341/metric ton unit WO<sub>3</sub> (\$309/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>
2010:									
February	W	249	W	18,600	303	588	807	749	171
March	W	181	W	18,300	455	689	860	739	171
April	W	279	W	17,700	370 <sup>r</sup>	638	886	676	169
May	W	160	W	17,700	427 <sup>r</sup>	743	869	745	169
June	W	246	W	17,700	410	756	924	708	169
July	W	221	W	17,000	(7)	667	894	689	169
August	W	366	W	17,000	(7)	788	901	704	169
September	W	172	W	17,000	499 <sup>r</sup>	752	864	762	171
October	W	246	W	17,000	360	728	819	828	171
November	W	236	W	17,000	(7)	700	830	804	171
December	W	214	W	17,000	(7)	680	829	669	171
January-December	W	2,740	XX	XX	5,750 <sup>r</sup>	8,310	10,400	XX	XX
2011:									
January	W	332	W	17,000	W	646	883 <sup>r</sup>	761	171
February	W	NA	W	17,000	W	788	878	804	171
Total	W	332	XX	XX	W	1,430	1,760	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 the Defense Logistics Agency, DLA Strategic Materials (formerly 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.

<sup>7</sup>Withheld to avoid disclosing company proprietary data; included in "January-December."

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>
2010:			
February	W	761	173
March	W	822	124
April	W	929	W
May	W	777	W
June	W	952	147
July	W	(3)	130
August	W	(3)	W
September	W	1,010	122
October	W	848	112
November	W	(3)	W
December	W	(3)	62
January-December	W	10,300	XX
2011:			
January	W	W	W
February	W	W	W
Total	W	1,680	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 "January-December."

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		
	2010	2011			2010	2011	
		January	February	Year to date <sup>4</sup>		January	February
Metal powder	4,100	307	362	669	341	414	469
Tungsten carbide powder	4,210	338	426	765	328	347	336
Total	8,310	646	788	1,430	669	761	804

<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."

<sup>4</sup>May include revisions to prior month(s) data.

TABLE 4  
U.S. REPORTED CONSUMPTION OF TUNGSTEN, BY END USE<sup>1,2,3</sup>

(Metric tons, tungsten content)

End use	2011		
	January	February	Year to date <sup>4</sup>
Steels	21	21	42
Superalloys	W	W	W
Other alloys (excludes steels and superalloys) <sup>5</sup>	W	W	W
Cemented carbides <sup>6</sup>	471 <sup>r</sup>	469	940
Mill products made from metal powder	W	W	W
Chemical uses	W	W	W
Miscellaneous and unspecified	391 <sup>r</sup>	388	778
Total	883 <sup>r</sup>	878	1,760

<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>May include revisions to prior month(s) data.

<sup>5</sup>Includes welding and hard-facing rods and materials, wear- and corrosion-resistant alloys, and nonferrous alloys.

<sup>6</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:						
2010:						
February	20	W	458 <sup>r</sup>	W	6	807 <sup>r</sup>
March	20	W	459 <sup>r</sup>	W	6	860 <sup>r</sup>
April	20	W	461 <sup>r</sup>	W	6	886 <sup>r</sup>
May	21	W	459 <sup>r</sup>	W	8	869 <sup>r</sup>
June	20	W	462 <sup>r</sup>	W	9	924 <sup>r</sup>
July	20	W	461 <sup>r</sup>	W	9	894 <sup>r</sup>
August	20	W	462 <sup>r</sup>	W	8	901 <sup>r</sup>
September	20	W	461 <sup>r</sup>	W	11	864 <sup>r</sup>
October	20	W	463 <sup>r</sup>	W	9	819 <sup>r</sup>
November	20	W	463 <sup>r</sup>	W	9	830 <sup>r</sup>
December	20	W	460 <sup>r</sup>	W	10	829 <sup>r</sup>
January-December	242	W	5,530 <sup>r</sup>	W	98	10,400 <sup>r</sup>
2011:						
January	20	W	463 <sup>r</sup>	W	13	883 <sup>r</sup>
February	20	W	461	W	8	878
Total	41	W	924	W	22	1,760
Stocks:						
2010:						
February	15	24	415 <sup>r</sup>	52 <sup>r</sup>	10	515 <sup>r</sup>
March	15	23	415 <sup>r</sup>	52 <sup>r</sup>	10	514 <sup>r</sup>
April	15	25	415 <sup>r</sup>	59 <sup>r</sup>	10	524 <sup>r</sup>
May	15	24	415 <sup>r</sup>	55 <sup>r</sup>	21	529 <sup>r</sup>
June	15	28	415 <sup>r</sup>	52 <sup>r</sup>	18	528 <sup>r</sup>
July	15	29	414 <sup>r</sup>	53 <sup>r</sup>	15	525 <sup>r</sup>
August	16	28	413 <sup>r</sup>	56 <sup>r</sup>	13	526 <sup>r</sup>
September	16	26	413 <sup>r</sup>	48 <sup>r</sup>	10	514 <sup>r</sup>
October	17	26	413 <sup>r</sup>	47 <sup>r</sup>	11	514 <sup>r</sup>
November	16	25	413 <sup>r</sup>	50 <sup>r</sup>	12	517 <sup>r</sup>
December	16	26	413 <sup>r</sup>	51 <sup>r</sup>	13	519 <sup>r</sup>
2011:						
January	16	25	413 <sup>r</sup>	52 <sup>r</sup>	17	523 <sup>r</sup>
February	16	27	413	52	14	522

<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 concen- trates	Ammonium tungstates	Ferro- tungsten	Metal powder	Tungsten carbide powder	Other <sup>2</sup>	Total	Total, year to date
2010	2,740	2,510	357	1,340	1,610	2,430	11,000	XX
2011:								
January:								
Austria	--	--	--	--	--	5	5	5
Canada	--	--	--	15	32	--	48	48
China	49	204	31	34	61	222	602	602
France	--	--	--	--	4	1	5	5
Germany	--	16	--	6	5	2	29	29
Israel	--	--	--	13	15	--	27	27
Japan	--	--	--	2	--	1	3	3
Korea, Republic of	--	--	--	31	2	(3)	33	33
Mongolia	81	--	--	--	--	--	81	81
Peru	37	--	--	--	--	--	37	37
Portugal	62	--	--	--	--	--	62	62
Singapore	--	--	--	--	--	5	5	5
Spain	49	--	--	--	--	--	49	49
Thailand	13	--	--	--	--	--	13	13
Vietnam	42	--	4	--	--	49	95	95
Other	--	--	--	(3)	(3)	4	5	5
Total	332	221	35	101	119	289	1,100	1,100
Total, year to date	332	221	35	101	119	289	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 2011 totaled 51 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			Tungsten			Total, year to date
	concen- trates <sup>2</sup>	Ammonium tungstates	Metal powder <sup>2</sup>	carbide powder	Other <sup>3</sup>	Total	
2010	276	538	803	1,220	875	3,710	XX
2011:							
January:							
Australia	--	--	(4)	4	4	8	8
Austria	--	--	5	24	(4)	29	29
Belgium	--	26	(4)	(4)	94	121	121
Canada	--	--	7	7	24	39	39
China	2	--	2	1	(4)	6	6
Germany	--	80	4	3	5	92	92
India	--	--	2	(4)	2	3	3
Japan	--	--	(4)	1	6	7	7
Malaysia	--	--	--	(4)	3	3	3
Mexico	--	--	3	(4)	10	13	13
Netherlands	--	--	--	--	10	10	10
Singapore	(4)	--	1	1	2	4	4
Switzerland	--	18	--	--	(4)	18	18
United Kingdom	--	--	--	13	5	18	18
Other	1	--	6	8	6	20	20
Total	3	124	31	62	172	391	391
Total, year to date	3	124	31	62	172	391	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 2011 totaled 211 metric tons, tungsten content.

Source: U.S. Census Bureau.