

# Mineral Industry Surveys

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## TUNGSTEN IN MARCH 2011

The following quarterly comparisons are based on preliminary data. During the quarter ending March 31, 2011, total U.S. net production of intermediate tungsten products, including metal powder and tungsten carbide powder, was 4% higher than production during the quarter ending December 31, 2010, and 18% higher than that produced during the quarter ending March 31, 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 during the quarter ending March 31, 2011, was 5% higher than consumption during the quarter ending December 31, 2010, and slightly higher than that during the quarter ending March 31, 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 through February 2011 and full year 2010 totals by material are published in this issue.

### Prices

Selected prices from Metal Bulletin for March 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				Intermediate products				
	Reported consumption	Imports for consumption	Stocks, end of period		Reported scrap consumption	Net production <sup>4</sup>	Reported consumption <sup>5</sup>	Stocks, end of period	
			Industry <sup>2</sup>	U.S. Government <sup>3</sup>				Industry <sup>6</sup>	U.S. Government <sup>3</sup>
2010:									
March	W	181	W	18,300	455	689	860	739	171
April	W	279	W	17,700	370	638	886	676	169
May	W	160	W	17,700	427	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	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	842 <sup>r</sup>	669	171
January–December	W	2,740	W	17,000	5,750	8,310	10,400	669	171
2011:									
January	W	332	W	17,000	W	646	883	761	171
February	W	276	W	17,000	W	779 <sup>r</sup>	881 <sup>r</sup>	804	171
March	W	NA	W	17,000	W	774	841	683	171
January–March	W	NA	W	17,000	W	2,200	2,610	683	171

<sup>r</sup>Revised. NA Not available. W Withheld to avoid disclosing company proprietary data.

<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:			
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	62
2011:			
January	W	W	W
February	W	W	W
March	W	W	W
January–March	W	W	W

W Withheld to avoid disclosing company proprietary data.

<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		
	2011				2011		
	2010	February <sup>f</sup>	March	January–March <sup>4</sup>	2010	February	March
Metal powder	4,100	353	349	1,010	341	469	349
Tungsten carbide powder	4,210	426	425	1,190	328	336	334
Total	8,310	779	774	2,200	669	804	683

<sup>f</sup>Revised.

<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.

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

(Metric tons, tungsten content)

End use	2011		
	February	March	January–March <sup>4</sup>
Steels	21	21	62
Superalloys	W	W	W
Other alloys (excludes steels and superalloys) <sup>5</sup>	W	W	W
Cemented carbides <sup>6</sup>	469	472	1,410
Mill products made from metal powder	W	W	W
Chemical uses	W	W	W
Miscellaneous and unspecified	391 <sup>r</sup>	348	1,130
Total	881 <sup>r</sup>	841	2,610

<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.

<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:						
March	20	W	459	W	6	860
April	20	W	461	W	6	886
May	21	W	459	W	8	869
June	20	W	462	W	9	924
July	20	W	461	W	9	894
August	20	W	462	W	8	901
September	20	W	461	W	11	864
October	20	W	463	W	9	819
November	20	W	463	W	9	830
December	20	W	460	W	10	842 <sup>r</sup>
January–December	242	W	5,530	W	98	10,400
2011:						
January	20	W	463	W	13	883
February	20	W	461	W	8	881 <sup>r</sup>
March	20	W	464	W	8	841
January–March	61	W	1,390	W	30	2,610
Stocks:						
2010:						
March	15	23	415	52	10	514
April	15	25	415	59	10	524
May	15	24	415	55	21	529
June	15	28	415	52	18	528
July	15	29	414	53	15	525
August	16	28	413	56	13	526
September	16	26	413	48	10	514
October	17	26	413	47	11	514
November	16	25	413	50	12	517
December	16	26	413	51	13	519
2011:						
January	16	25	413	52	17	523
February	16	27	413	52	14	522
March	15	27	414	46	14	517

<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	Ferrotungsten	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	332	221	35	101	119	289	1,100	XX
February:								
Austria	--	--	--	--	3	8	11	16
Bolivia	79	--	--	--	--	--	79	79
Canada	--	--	--	15	29	--	44	91
China	--	57	83	38	34	120	333	934
France	--	--	--	--	(3)	(3)	(3)	6
Germany	--	36	--	9	14	3	63	91
Israel	--	--	--	(3)	9	(3)	9	37
Japan	--	--	--	5	--	41	46	49
Korea, Republic of	--	--	--	41	(3)	--	41	75
Mongolia	--	--	--	--	--	--	--	81
Peru	46	--	--	--	--	--	46	82
Portugal	42	--	--	--	--	--	42	104
Singapore	--	--	--	--	--	(3)	(3)	5
Spain	20	--	--	--	--	--	20	69
Thailand	--	--	--	--	--	--	--	13
Vietnam	90	--	--	10	59	16	175	270
Other	--	--	--	(3)	3	2	5	10
Total	276	93	83	119	152	191	914	2,010
January–February	608	314	117	220	271	480	2,010	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 February 2011 totaled 77 metric tons, tungsten content, to give a year-to-date total of 128 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
2010	276	538	803	1,220	875	3,710	XX
2011:							
January	3	124	31	62	172	391	XX
February:							
Australia	--	--	(4)	2	(4)	2	10
Austria	--	--	--	--	--	--	29
Belgium	--	--	--	--	1	1	122
Brazil	2	--	1	--	(4)	3	6
Canada	--	--	6	11	26	42	81
China	(4)	--	2	4	5	11	17
Czech Republic	--	--	--	1	2	3	4
Germany	--	45	11	14	14	83	176
India	--	--	1	1	1	3	6
Japan	--	--	1	1	11	12	20
Malaysia	--	--	(4)	(4)	1	1	4
Mexico	--	--	1	(4)	7	7	20
Netherlands	--	--	--	--	--	--	10
Singapore	--	--	1	1	3	5	9
Switzerland	--	--	5	--	--	5	22
Taiwan	--	--	3	2	(4)	5	6
United Kingdom	--	--	1	45	6	52	69
Other	1	--	3	5	5	15	30
Total	3	45	34	86	81	250	641
January–February	6	169	65	148	253	641	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 February 2011 totaled 196 metric tons, tungsten content, to give a year-to-date total of 407 metric tons, tungsten content.

Source: U.S. Census Bureau.