

# Mineral Industry Surveys

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## TUNGSTEN IN SEPTEMBER 2011

Total U.S. net production of intermediate tungsten products, including metal powder and tungsten carbide powder, was 3% lower during January through September 2011 than net production during the same period in 2010. Total U.S. reported consumption of ferrotungsten, tungsten metal powder, tungsten carbide powder, tungsten scrap, and other tungsten materials during January through September 2011 was 13% higher than consumption 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 through August 2011 and full year 2010 totals by material are published in this issue.

**Prices**

Selected prices from Metal Bulletin for September 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—\$491/metric ton unit WO<sub>3</sub> (\$445/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:									
September	(7)	172	W	17,000	506	752	898	762	171
October	(7)	246	W	17,000	366	728	854	828	171
November	(7)	236	W	17,000	(7)	700	865	804	171
December	(7)	214	W	17,000	(7)	680	876	669	171
January–December	4,840	2,740	W	17,000	5,800	8,310	10,800	669	171
2011:									
January	W	332	W	17,000	W	646	994	761	171
February	W	276	W	17,000	W	779	992	804	171
March	W	388	W	17,000	W	774	998	683	171
April	W	283	W	17,000	W	732	1,080	599	171
May	W	469	W	15,900	690	718	1,050	593	171
June	W	259	W	15,900	1,130	735	1,280	637	171
July	W	432	W	15,900	629	580	966	673	171
August	W	277	W	15,800	532	475	950	643	160
September	W	181	W	15,800	W	605	945	639	160
January–September	W	2,900	W	15,800	W	6,040	9,250	639	160

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. 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:			
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
April	W	W	W
May	W	841	W
June	W	895	W
July	W	W	W
August	W	W	W
September	W	W	W
January–September	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		
	2010	2011			2010	2011	
		August	September	January–September <sup>4</sup>		August	September
Metal powder	4,100	170	251	2,620	341	327	291
Tungsten carbide powder	4,210	305	354	3,420	328	316	348
Total	8,310	475	605	6,040	669	643	639

<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 previously published data.

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

(Metric tons, tungsten content)

End use	2011		
	August	September	January–September <sup>4</sup>
Steels	6	6	53
Superalloys	W	W	W
Other alloys (excludes steels and superalloys) <sup>5</sup>	W	W	W
Cemented carbides <sup>6</sup>	578	575	5,190
Mill products made from metal powder	W	W	W
Chemical uses	W	W	W
Miscellaneous and unspecified	366	364	4,020
Total	950	945	9,250

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 previously published 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
<b>Consumption:</b>						
<b>2010:</b>						
September	10	W	491	W	6	898
October	10	W	493	W	6	854
November	9	W	493	W	6	865
December	10	W	491	W	6	876
January–December	119	W	5,890	W	75	10,800
<b>2011:</b>						
January	10	W	569	W	6	994
February	10	W	567	W	6	992
March	10	W	570	W	6	998
April	10	W	565	W	6	1,080
May	10	W	571	W	6	1,050
June	10	W	567	W	6	1,280
July	10	W	568	W	6	966
August	10	W	570	W	6	950
September	10	W	567	W	6	945
January–September	88	W	5,110	W	55	9,250
<b>Stocks:</b>						
<b>2010:</b>						
September	22	50	413	56	10	552
October	23	51	413	56	10	553
November	23	52	413	60	10	558
December	22	54	413	61	10	561
<b>2011:</b>						
January	22	51	413	67	10	562
February	22	52	413	63	10	560
March	22	50	414	54	10	549
April	22	46	413	61	10	552
May	22	43	413	65	10	553
June	22	41	413	70	10	556
July	21	40	413	67	10	551
August	22	37	413	63	10	546
September	23	36	413	62	10	543

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
2010	2,740	2,510	357	1,340	1,610	2,430	11,000	XX
2011:								
June	259	209	16	97	109	226	916	6,320
July	432	106	8	132	125	231	1,030	7,350
August:								
Austria	--	--	--	--	7	6	14	109
Belgium	--	--	--	--	(3)	--	(3)	19
Bolivia	53	--	--	--	--	--	53	531
Brazil	14	--	--	--	--	--	14	24
Canada	--	--	--	21	43	(3)	64	383
China	--	156	--	8	40	266	469	3,700
Czech Republic	--	--	--	--	--	(3)	(3)	21
France	--	--	--	--	(3)	1	1	11
Germany	(3)	(3)	--	22	18	2	42	394
Hong Kong	--	--	--	--	--	(3)	(3)	15
Hungary	--	--	--	--	--	(3)	(3)	5
India	--	--	--	--	1	2	3	21
Israel	--	--	--	40	--	(3)	41	210
Japan	--	--	--	4	(3)	1	5	138
Korea, Republic of	--	--	--	11	(3)	--	11	254
Luxembourg	--	--	--	--	--	(3)	(3)	4
Mexico	--	--	--	--	--	--	--	6
Mongolia	--	--	--	--	--	--	--	230
Peru	44	--	--	--	--	--	44	299
Portugal	46	--	--	--	--	--	46	358
Russia	--	--	--	--	--	41	41	75
Rwanda	--	--	--	--	--	--	--	11
Singapore	--	--	--	1	--	1	3	14
Spain	55	--	--	--	--	--	55	339
Sweden	--	--	--	--	--	(3)	(3)	7
Thailand	--	--	--	--	--	--	--	63
Uganda	--	--	--	--	--	--	--	20
United Kingdom	--	--	--	2	--	(3)	2	26
Vietnam	65	--	--	10	79	--	154	1,120
Other	--	--	--	(3)	--	(3)	(3)	1
Total	277	156	--	120	187	322	1,060	8,410
January–August	2,720	1,490	188	944	1,160	1,910	8,410	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 August 2011 totaled 73 metric tons, tungsten content, to give a year-to-date total of 888 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:							
June	12	56	110	107	67	352	2,070
July	4	174	49	113	122	461	2,530
August:							
Australia	--	--	(4)	--	(4)	(4)	30
Austria	--	--	--	13	--	13	175
Belgium	--	--	--	(4)	--	(4)	126
Brazil	2	--	2	(4)	2	7	52
Canada	--	--	10	11	61	81	454
Chile	--	--	(4)	--	--	(4)	5
China	(4)	--	2	4	2	8	63
Costa Rica	--	--	--	--	1	1	9
Czech Republic	--	--	--	(4)	2	2	17
Denmark	--	--	--	1	--	1	3
France	--	--	--	1	21	21	76
Germany	--	62	13	16	41	132	763
Hong Kong	--	--	--	(4)	(4)	(4)	9
Hungary	--	--	--	--	(4)	(4)	34
India	--	--	2	(4)	2	4	29
Indonesia	--	--	--	(4)	9	9	21
Israel	--	--	--	--	(4)	(4)	18
Italy	--	--	--	2	(4)	2	9
Japan	--	--	(4)	1	7	8	148
Korea, Republic of	--	--	2	2	(4)	5	16
Malaysia	1	--	--	--	(4)	1	9
Mexico	--	--	2	(4)	16	18	103
Netherlands	--	--	--	--	(4)	(4)	15
Peru	--	--	2	(4)	--	2	7
Philippines	--	--	(4)	(4)	--	(4)	13
Saudi Arabia	--	--	--	--	(4)	(4)	80
Singapore	--	--	3	(4)	7	10	48
South Africa	--	--	2	5	(4)	8	28
Sweden	--	--	--	2	1	3	8
Switzerland	--	34	2	--	--	36	177
Taiwan	--	--	2	3	25	30	84
Thailand	--	--	(4)	1	(4)	1	5
Turkey	--	--	--	--	(4)	(4)	11
United Kingdom	--	--	(4)	25	2	28	285
Venezuela	--	--	1	6	(4)	6	17
Vietnam	(4)	--	--	--	(4)	(4)	(4)
Other	--	--	(4)	2	1	3	22
Total	3	96	47	95	200	441	2,970
January–August	34	665	460	845	967	2,970	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 August 2011 totaled 247 metric tons, tungsten content, to give a year-to-date total of 1,620 metric tons, tungsten content.

Source: U.S. Census Bureau.