

# Mineral Industry Surveys

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## TUNGSTEN IN JUNE 2008

During the quarter ending June 30, 2008, U.S. net production of intermediate tungsten products, including metal powder and tungsten carbide powder, was 5% higher than net production during the quarter ending March 31, 2008, according to the U.S. Geological Survey. U.S. net production of intermediate tungsten products during the first half of 2008 was 7% higher than that of the revised first half of 2007.

Total U.S. reported consumption of ferrotungsten, tungsten metal powder, tungsten carbide powder, tungsten scrap, and other tungsten materials during the quarter ending June 30, 2008, was 3% less than that consumed during the quarter ending March 31, 2008. U.S. reported consumption of these materials during the first half of 2008 was 3% higher than that during the revised first half of 2007. 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 May 2008 and full year 2007 totals by material are published in this issue.

### Update

Selected prices from Metal Bulletin for July 1-31, 2008, 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—\$276/metric ton unit WO<sub>3</sub> (\$250/short ton unit WO<sub>3</sub>)  
High—\$281/metric ton unit WO<sub>3</sub> (\$255/short ton unit WO<sub>3</sub>)

#### Concentrates:

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>
2007:									
June	W	359	W	22,100	424	719	956	810	266
July	W	344	W	21,400	325	545	769	697	266
August	W	315	W	21,400	309	688	949	800	268
September	W	344	W	21,300	256	831	1,030	780	268
October	W	299	W	21,300	494	609	826	794	268
November	W	315	W	21,200	348	654	917	745	235
December	W	189	W	21,200	283	697	908	825	235
January-December	W	3,880	XX	XX	4,230	8,360	11,100	XX	XX
2008:									
January	W	221	W	21,200	318	818	1,020	796	235
February	W	383	W	21,200	360	650	983	738	235
March	W	339	W	21,200	373	788	996	685	235
April	W	252	W	21,100	498	802	970	728	235
May	W	378	W	20,900	417	811	962	794	235
June	W	344	W	20,800	455	756	971	772	235
Total	W	1,920	XX	XX	2,420	4,630	5,900	XX	XX

<sup>1</sup>Revised. W Withheld to avoid disclosing company proprietary data. XX Not applicable.

<sup>2</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>3</sup>Reported by consumers.

<sup>4</sup>Data from Defense National Stockpile Center. Data through June 2007 include material committed for sale pending shipment; data after June 2007 are uncommitted material only.

<sup>5</sup>Net production of tungsten metal powder and tungsten carbide powder.

<sup>6</sup>Includes estimates and scrap.

<sup>7</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>
2007:			
June	W	1,230	94
July	W	(3)	W
August	W	1,050	W
September	W	1,100	W
October	W	1,010	W
November	W	958	W
December	W	(3)	83
January-December	W	12,000	XX
2008:			
January	W	1,250	73
February	W	1,220	36
March	W	1,130	W
April	W	W	147
May	W	W	112
June	W	1,280	85
Total	W	7,330	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		
	2008				2008		
	2007	May	June	Year to date	2007	May	June
Metal powder	3,880	342	305	1,990	406	408	392
Tungsten carbide powder	4,480	469	452	2,630	419	386	379
Total	8,360	811	756	4,630	825	794	772

<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	2008		
	May	June	Year to date
Steels	22	22	132
Superalloys	W	W	W
Other alloys (excludes steels and superalloys) <sup>4</sup>	W	W	W
Cemented carbides <sup>5</sup>	507	503	3,050
Mill products made from metal powder	W	W	W
Chemical uses	W	W	W
Miscellaneous and unspecified	433	446	2,720
Total	962	971	5,900

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:						
2007:						
June	20	W	519	W	6	956
July	20	W	516	W	6	769
August	20	W	518	W	6	949
September	20	W	512	W	6	1,030
October	20	W	516	W	6	826
November	20	W	512	W	6	917
December	20	W	505	W	6	908
January-December	236	W	6,200	W	72	11,100
2008:						
January	19	W	518	W	6	1,020
February	19	W	516	W	6	983
March	19	W	519	W	6	996
April	20	W	520	W	6	970
May	19	W	514	W	6	962
June	20	W	511	W	6	971
Total	117	W	3,100	W	36	5,900
Stocks:						
2007:						
June	17	27	403	29	9	483
July	17	27	402	23	9	478
August	16	27	395	23	9	468
September	14	27	624	23	9	696
October	16	27	405	23	9	479
November	15	27	401	23	9	474
December	14	27	398	25	9	472
2008:						
January	16	27	399	30	9	480
February	15	27	395	29	9	474
March	17	26	397	30	9	478
April	16	27	397	31	9	480
May	17	27	395	28	9	475
June	17	27	399	30	9	482

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
2007	3,880	2,700	357	1,480	1,450	1,670	11,500	XX
2008:								
March	339	151	43	62	132	124	851	2,580
April	252	312	--	128	86	131	910	3,490
May:								
Austria	--	--	--	--	--	2	2	12
Belgium	--	--	--	--	(3)	1	1	4
Bolivia	121	--	--	--	--	--	121	432
Brazil	39	--	--	--	--	--	39	110
Canada	83	--	--	23	24	--	130	549
China	--	87	16	23	46	141	312	1,840
Czech Republic	--	--	--	--	--	(3)	(3)	17
France	--	--	--	(3)	(3)	(3)	(3)	3
Germany	--	--	--	27	15	7	49	249
Hong Kong	--	--	15	--	--	(3)	16	66
India	--	--	--	--	1	3	5	17
Israel	--	--	--	47	1	(3)	48	224
Japan	--	--	--	--	--	4	4	20
Korea, Republic of	--	--	--	14	--	(3)	15	59
Mongolia	--	--	--	--	--	--	--	12
Netherlands	--	--	--	--	--	(3)	(3)	4
Peru	18	--	--	--	--	--	18	155
Portugal	93	--	--	--	--	--	93	361
Russia	--	--	--	--	--	34	34	67
Rwanda	10	--	--	--	--	--	10	57
Singapore	--	--	--	--	--	2	2	7
South Africa	--	--	--	--	--	11	11	11
Sweden	--	--	--	--	9	(3)	9	66
Thailand	14	--	--	--	--	--	14	59
Uganda	--	--	--	--	--	--	--	10
United Kingdom	--	--	--	--	(3)	1	1	7
Other	--	--	--	--	(3)	1	1	11
Total	378	87	31	134	97	209	936	4,430
Total, year to date	1,570	795	211	494	605	749	4,430	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 May 2008 totaled 120 metric tons, tungsten content, to give a year-to-date total of 436 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)

TABLE 7 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
2007	109	731	1,050	1,280	1,270	4,440	XX
2008:							
March	(4)	38	92	160	89	380	1,130
April	(4)	47	87	75	69	279	1,410
May:							
Australia	--	--	(4)	(4)	1	1	14
Austria	--	9	--	24	--	34	97
Belgium	--	--	--	1	(4)	1	4
Brazil	--	--	2	1	(4)	3	28
Canada	--	--	6	9	21	36	189
China	--	--	--	(4)	3	4	24
Czech Republic	--	--	--	--	2	2	12
France	--	--	1	6	(4)	7	137
Germany	--	10	13	47	14	83	576
Hungary	--	--	--	--	(4)	(4)	7
India	--	--	(4)	(4)	4	5	20
Ireland	--	--	--	--	--	--	12
Israel	--	--	(4)	1	1	2	7
Italy	--	--	1	(4)	1	2	15
Japan	--	--	1	1	6	9	53
Korea, Republic of	--	--	--	2	(4)	2	4
Mexico	--	--	18	(4)	19	38	199
Netherlands	--	--	--	--	(4)	(4)	2
Philippines	--	--	--	--	--	--	5
Singapore	(4)	--	4	1	3	8	33
South Africa	--	--	(4)	(4)	--	(4)	13
Spain	--	--	(4)	--	(4)	(4)	3
Sweden	--	--	--	--	(4)	(4)	3
Switzerland	--	--	(4)	1	--	1	4
Taiwan	--	--	2	10	5	17	72
United Kingdom	--	--	1	3	1	5	113
Venezuela	--	--	(4)	11	(4)	12	26
Other	--	--	1	1	1	3	15
Total	(4)	19	52	119	84	274	1,690
Total, year to date	4	252	439	606	384	1,690	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 May 2008 totaled 177 metric tons, tungsten content, to give a year-to-date total of 735 metric tons, tungsten content.

Source: U.S. Census Bureau.