

# Mineral Industry Surveys

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**For information, contact:**

Kim B. Shedd, Tungsten Commodity Specialist  
U.S. Geological Survey  
989 National Center  
Reston, VA 20192  
Telephone: (703) 648-4974, Fax: (703) 648-7757  
E-mail: kshedd@usgs.gov

Danielle L. Militello (Data)  
Telephone: (703) 648-7993  
Fax: (703) 648-7975  
E-mail: dmilitello@usgs.gov

**Internet:** <http://minerals.usgs.gov/minerals>

## TUNGSTEN IN APRIL 2008

U.S. net production of intermediate tungsten products, including metal powder and tungsten carbide powder, was 4% higher during January through April 2008 than net production during the same period in 2007, 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 April 2008 was 3% higher than that consumed during the same period in 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 March 2008 and full year 2007 totals by material are published in this issue.

### Update

Selected prices from Metal Bulletin for May 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		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>
2007:									
April	W	152	W	22,200	378	784	1,020	746	266
May	W	558	W	19,200	244	676	945	763	266
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
Total	W	1,200	XX	XX	1,550	3,060	3,970	XX	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>Reported by consumers.

<sup>3</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>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>
2007:			
April	W	(3)	101
May	W	(3)	110
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
Total	W	W	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

(Metric tons, tungsten content)

Product <sup>3</sup>	Net production <sup>2</sup>				Stocks at end of period		
	2008				2007	2008	
	2007	March	April	Year to date		March	April
Metal powder	3,880	351	371	1,350	406	367	397
Tungsten carbide powder	4,480	437	431	1,710	419	318	331
Total	8,360	788	802	3,060	825	685	728

<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		
	March	April	Year to date
Steels	22	22	88
Superalloys	W	W	W
Other alloys (excludes steels and superalloys) <sup>4</sup>	W	W	W
Cemented carbides <sup>5</sup>	511	512	2,040
Mill products made from metal powder	W	W	W
Chemical uses	W	W	W
Miscellaneous and unspecified	463	436	1,840
Total	996	970	3,970

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:						
April	19	W	515	W	6	1,020
May	19	W	524	W	6	945
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
Total	78	W	2,070	W	24	3,970
Stocks:						
2007:						
April	18	27	405	32	9	491
May	18	27	405	29	9	488
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

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:								
January	221	118	67	72	153	176	807	807
February	383	127	71	97	136	108	923	1,730
March:								
Austria	--	--	--	--	(3)	2	2	7
Belgium	--	--	--	--	(3)	1	1	3
Bolivia	98	--	--	--	--	--	98	290
Brazil	31	--	--	--	--	--	31	71
Canada	87	--	--	(3)	30	--	117	308
China	--	151	43	14	46	59	313	1,110
Czech Republic	--	--	--	--	5	(3)	5	16
France	--	--	--	(3)	(3)	1	1	2
Germany	--	--	--	17	16	9	43	121
Hong Kong	--	--	--	--	--	17	17	26
India	--	--	--	--	2	2	4	10
Israel	--	--	--	22	20	4	46	116
Japan	--	--	--	1	(3)	4	6	10
Korea, Republic of	--	--	--	8	1	(3)	10	27
Mongolia	--	--	--	--	--	--	--	12
Netherlands	--	--	--	--	--	2	2	3
Peru	36	--	--	--	--	--	36	100
Portugal	72	--	--	--	--	--	72	175
Russia	--	--	--	--	--	16	16	32
Rwanda	--	--	--	--	--	--	--	23
Singapore	--	--	--	--	--	1	1	4
Sweden	--	--	--	--	13	(3)	13	57
Thailand	15	--	--	--	--	--	15	44
United Kingdom	--	--	--	--	--	5	5	6
Other	--	--	--	--	--	1	1	4
Total	339	151	43	62	132	124	851	2,580
Total, year to date	943	396	180	231	422	409	2,580	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 March 2008 totaled 100 metric tons, tungsten content, to give a year-to-date total of 236 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
2007	109	731	1,050	1,280	1,270	4,440	XX
2008:							
January	(4)	82	93	109	74	358	358
February	3	66	115	144	68	396	754
March:							
Australia	--	--	(4)	3	1	4	11
Austria	--	--	--	12	--	12	52
Brazil	--	--	2	8	1	11	23
Canada	--	--	9	12	22	43	109
Chile	--	--	--	(4)	--	(4)	1
China	--	--	1	(4)	1	2	16
Czech Republic	--	--	--	(4)	3	3	6
France	--	--	1	22	(4)	23	114
Germany	--	37	12	42	23	113	409
Hungary	--	--	--	--	(4)	(4)	4
India	--	1	(4)	--	--	2	9
Ireland	--	--	(4)	6	--	6	12
Israel	--	--	(4)	--	3	3	4
Italy	--	--	1	2	1	4	11
Japan	--	--	(4)	1	11	12	35
Korea, Republic of	--	--	--	1	(4)	1	2
Malaysia	--	--	--	(4)	--	(4)	1
Mexico	--	--	40	1	13	54	122
Netherlands	--	--	--	--	1	1	1
Philippines	--	--	--	--	5	5	5
Singapore	(4)	--	3	(4)	(4)	3	19
South Africa	--	--	--	5	--	5	12
Spain	--	--	(4)	--	(4)	1	1
Sweden	--	--	--	--	2	2	2
Switzerland	--	--	(4)	(4)	(4)	1	3
Taiwan	--	--	17	17	(4)	34	47
United Kingdom	--	--	1	24	1	26	81
Venezuela	--	--	--	3	--	3	14
Other	--	--	2	1	1	4	10
Total	(4)	38	92	160	89	380	1,130
Total, year to date	3	186	300	413	231	1,130	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 March 2008 totaled 188 metric tons, tungsten content, to give a year-to-date total of 423 metric tons, tungsten content.

Source: U.S. Census Bureau.