

# Mineral Industry Surveys

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## TUNGSTEN IN FEBRUARY 2008

U.S. net production of intermediate tungsten products, including metal powder and tungsten carbide powder, was 13% higher during January through February 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 tungsten chemicals in January through February 2008 was 10% 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 2008 and full year 2007 totals by material are published in this issue.

### Update

Selected prices from Metal Bulletin for March 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:									
February	W	322	W	22,400	310	643	971	844	266
March	W	420	W	22,200	425	857	1,030	809	266
April	W	152	W	22,200	378	784	1,070	746	266
May	W	558	W	19,200	244	676	989	763	266
June	W	359	W	22,100	424	719	1,000	810	266
July	W	344	W	21,400	325	545	812	697	266
August	W	315	W	21,400	309	688	992	800	268
September	W	344	W	21,300	256	831	1,070	780	268
October	W	299	W	21,300	494	609	869	794	268
November	W	315	W	21,200	348	654	960	745	235
December	W	189	W	21,200	283	697	951	825	235
January-December	W	3,880	XX	XX	4,230	8,360	11,700	XX	XX
2008:									
January	W	221	W	21,200	318	818	1,070	796	235
February	W	383	W	21,200	360	650	1,030	738	235
Total	W	604	XX	XX	678	1,470	2,100	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:			
February	W	886	83
March	W	1,140	37
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
Total	W	2,470	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	January	February	Year to date	2007	January	February
Metal powder	3,880	407	218	625	406	424	391
Tungsten carbide powder	4,480	412	432	844	419	372	348
Total	8,360	818	650	1,470	825	796	738

<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		
	January	February	Year to date
Steels	22	22	44
Superalloys	W	W	W
Other alloys (excludes steels and superalloys) <sup>4</sup>	W	W	W
Cemented carbides <sup>5</sup>	553	551	1,100
Mill products made from metal powder	W	W	W
Chemical uses	W	W	W
Miscellaneous and unspecified	490	459	950
Total	1,070	1,030	2,100

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:						
February	21	W	559	W	6	971
March	20	W	563	W	6	1,030
April	19	W	558	W	6	1,070
May	19	W	567	W	6	989
June	20	W	562	W	6	1,000
July	20	W	559	W	6	812
August	20	W	561	W	6	992
September	20	W	555	W	6	1,070
October	20	W	559	W	6	869
November	20	W	555	W	6	960
December	20	W	548	W	6	951
January-December	236	W	6,710	W	72	11,700
2008:						
January	19	W	561	W	6	1,070
February	19	W	559	W	6	1,030
Total	39	W	1,120	W	12	2,100
Stocks:						
2007:						
February	17	28	401	26	9	481
March	19	27	398	34	9	487
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

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
2007	3,880	2,700	357	1,480	1,450	1,670	11,500	XX
2008:								
January:								
Austria	--	--	--	(3)	--	3	3	3
Belgium	--	--	--	--	(3)	1	1	1
Bolivia	110	--	--	--	--	--	110	110
Brazil	20	--	--	--	--	--	20	20
Canada	23	--	--	--	21	--	44	44
China	--	118	67	15	74	160	434	434
France	--	--	--	--	(3)	(3)	1	1
Germany	--	--	--	28	4	4	36	36
Hong Kong	--	--	--	--	8	1	8	8
India	--	--	--	--	2	2	4	4
Israel	--	--	--	22	--	1	23	23
Japan	--	--	--	(3)	--	1	1	1
Korea, Republic of	--	--	--	7	1	(3)	8	8
Mongolia	12	--	--	--	--	--	12	12
Netherlands	--	--	--	--	--	1	1	1
Peru	9	--	--	--	--	--	9	9
Portugal	31	--	--	--	--	--	31	31
Singapore	--	--	--	--	--	2	2	2
Sweden	--	--	--	--	44	(3)	44	44
Thailand	15	--	--	--	--	--	15	15
Other	--	--	--	(3)	--	1	1	1
Total	221	118	67	72	153	176	807	807
Total, year to date	221	118	67	72	153	176	807	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 2008 totaled 37 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:							
Australia	--	--	(4)	4	1	5	5
Austria	--	--	--	13	--	13	13
Brazil	--	--	2	--	1	4	4
Canada	--	--	8	10	16	34	34
Chile	--	--	(4)	(4)	--	1	1
China	--	--	(4)	(4)	1	2	2
Czech Republic	--	--	--	--	1	1	1
France	--	41	1	9	(4)	51	51
Germany	--	37	52	19	20	129	129
Hungary	--	--	--	--	3	3	3
India	--	1	(4)	3	(4)	5	5
Ireland	--	--	--	6	--	6	6
Italy	--	2	1	2	(4)	5	5
Japan	--	--	1	1	5	7	7
Malaysia	--	--	--	1	(4)	1	1
Mexico	(4)	--	16	(4)	6	23	23
Singapore	--	--	6	1	5	12	12
South Africa	--	--	(4)	3	--	3	3
Sweden	--	--	--	--	1	1	1
Taiwan	--	--	2	7	1	9	9
United Kingdom	--	--	2	19	8	29	29
Venezuela	--	--	1	10	--	11	11
Other	--	--	(4)	1	2	4	4
Total	(4)	82	93	109	74	358	358
Total, year to date	(4)	82	93	109	74	358	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 2008 totaled 102 metric tons, tungsten content.

Source: U.S. Census Bureau.