

# Mineral Industry Surveys

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## TUNGSTEN IN JANUARY 2005

January 2005 U.S. net production of intermediate tungsten products, including metal powder and tungsten carbide powder produced from metal powder, was 7% higher than that of December 2004, 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 in January 2005 was approximately equal to that consumed in December 2004. These materials were used to make alloys, cemented carbides, mill products, catalysts, and pigments.

Data for U.S. imports and exports for January through December 2004 are published in this issue.

### Update

Prices for tungsten ore concentrates, in dollars per metric ton unit from Metal Bulletin, are listed below. Prices in dollars per short ton unit were converted from metric ton unit prices and rounded to the nearest dollar. These prices represent combined prices for wolframite and scheelite ore concentrates with a minimum tungsten trioxide (WO<sub>3</sub>) content of 65%. The prices for February 1-28, 2005, are as follows:

Low—\$68/metric ton unit WO<sub>3</sub> (\$62/short ton unit WO<sub>3</sub>)

High—\$80/metric ton unit WO<sub>3</sub> (\$73/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>
2004:									
January	W	328	W	28,900	318	535	788	834	757
February	W	92	W	28,800	221 <sup>r</sup>	560	797	769	743
March	W	157	W	28,800	335	578	855	734	736
April	W	207	W	28,500	321	606	853	749	730
May	W	68	W	28,400	369	537	830	845	729
June	W	190	W	28,400	326	581	947	848 <sup>r</sup>	729
July	W	78	W	28,400	268	529	825	828	724
August	W	326	W	28,400	(7)	634 <sup>r</sup>	722 <sup>r</sup>	959 <sup>r</sup>	724
September	W	255	W	28,400	(7)	570 <sup>r</sup>	858 <sup>r</sup>	923 <sup>r</sup>	724
October	W	218	W	28,400	315 <sup>r</sup>	598 <sup>r</sup>	863 <sup>r</sup>	812 <sup>r</sup>	724
November	W	227	W	28,400	264 <sup>r</sup>	510 <sup>r</sup>	792 <sup>r</sup>	811 <sup>r</sup>	685
December	W	166	W	28,400	336 <sup>r</sup>	497 <sup>r</sup>	803 <sup>r</sup>	806 <sup>r</sup>	685
January-December	W	2,310	XX	XX	3,810 <sup>r</sup>	6,740 <sup>r</sup>	9,930 <sup>r</sup>	XX	XX
2005:									
January	W	NA	W	28,400	376	533	801	866	685

<sup>1</sup>Revised. NA Not available. 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. Includes material committed for sale pending shipment.

<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>
2004:			
January	W	790	W
February	W	650	W
March	W	W	W
April	W	881	W
May	W	769	129
June	W	827	W
July	W	634	150
August	W	W	87 <sup>r</sup>
September	W	697 <sup>r</sup>	W
October	W	786 <sup>r</sup>	30 <sup>r</sup>
November	W	658 <sup>r</sup>	W
December	W	578 <sup>r</sup>	W
Total <sup>3</sup>	W	7,270	XX
2005:			
January	W	730	8

<sup>1</sup>Revised. 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>Does not include withheld data.

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	
	2005			2005	
	2004 <sup>r</sup>	January	Year to date	2004 <sup>r</sup>	January
Metal powder	2,600	216	216	453	477
Tungsten carbide powder (made from metal powder)	4,130	317	317	353	390
Total	6,740	533	533	806	866

<sup>r</sup>Revised.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>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	2004		2005
	December	Year to date	January
Steels	21	264	23
Superalloys	W	W	W
Other alloys (excludes steels and superalloys) <sup>4</sup>	W	W	W
Cemented carbides <sup>5</sup>	442	5,260	435
Mill products made from metal powder	W	W	W
Chemical uses	W	W	W
Miscellaneous and unspecified	340 <sup>r</sup>	4,410	343
Total	803 <sup>r</sup>	9,930	801

<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>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
<b>Consumption:</b>						
2004:						
January	21	W	452	W	6	788
February	21	W	450	W	6	797
March	22	W	444	W	6	855
April	21	W	447	W	6	853
May	22	W	441	W	6	830
June	22	W	445	W	6	947
July	21	W	434	W	6	825
August	21	W	438	W	6	722 <sup>r</sup>
September	22	W	457	W	6	858 <sup>r</sup>
October	22	W	437	W	6	863 <sup>r</sup>
November	22	W	450	W	6	792 <sup>r</sup>
December	21	W	451	W	6	803 <sup>r</sup>
Total	258	W	5,350	W	72	9,930
2005:						
January	23	W	443	W	6	801
<b>Stocks:</b>						
2004:						
January	30	33	312	25	9	409
February	29	31	307	23	9	399
March	27	31	308	26	9	401
April	26	30	304	29	9	398
May	24	33	317	24	9	407
June	33	31	308	18	9	399
July	31	28	307	27	9	403
August	30	26	313	26	9	404
September	29	28	308	27	9	400
October	27	30	310	29	9	404
November	25	28	302	34	9	397
December	24	27	297	23	9	379
2005:						
January	31	27	296	22	9	385

<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	Ferro-tungsten	Metal powder	Tungsten carbide powder	Other <sup>2</sup>	Total	Total, year to date
2003	4,690	2,640	377	1,090	1,370	1,020	11,200	XX
2004:								
October	218	134	29	77	121	29	609	7,770
November	227	138	65	157	166	55	807	8,570
December:								
Australia	--	--	--	--	--	(3)	(3)	(3)
Austria	--	--	--	--	--	3	3	47
Belgium	--	--	--	(3)	--	(3)	(3)	6
Bolivia	26	--	--	--	--	--	26	504
Brazil	--	--	15	--	--	--	15	43
Canada	35	--	--	3	28	(3)	66	1,390
China	--	224	132	44	45	39	483	4,480
Congo (Kinshasa)	--	--	--	--	--	--	--	28
Costa Rica	--	--	--	--	--	--	--	(3)
Czech Republic	--	--	--	--	--	(3)	(3)	11
France	--	--	--	--	1	1	2	10
Germany	--	18	--	28	--	3	49	681
Hong Kong	--	--	--	--	--	10	10	97
Hungary	--	--	--	--	--	(3)	(3)	6
India	--	--	--	--	--	1	1	4
Israel	--	--	--	--	26	1	27	407
Italy	--	--	--	--	--	--	--	33
Japan	--	--	--	(3)	(3)	10	10	99
Kenya	--	--	--	--	--	--	--	38
Korea, Republic of	--	--	--	7	1	--	9	155
Liechtenstein	--	--	--	--	--	--	--	41
Malaysia	--	--	--	--	--	--	--	(3)
Mexico	--	--	--	--	--	--	--	31
Mongolia	15	--	--	--	--	--	15	30
Netherlands	--	--	--	--	--	(3)	(3)	51
Norway	--	--	--	--	--	--	--	(3)
Panama	--	--	--	--	--	--	--	(3)
Poland	--	--	--	--	--	--	--	(3)
Portugal	74	--	--	--	--	--	74	514
Russia	--	--	--	--	--	16	16	197
Rwanda	--	--	--	--	--	--	--	138
Singapore	--	--	--	--	--	1	1	13
Spain	--	--	--	--	--	(3)	(3)	(3)
Sweden	--	--	--	--	--	(3)	(3)	1
Switzerland	--	--	--	--	--	(3)	(3)	1
Taiwan	--	--	--	--	--	--	--	12
Thailand	16	--	--	--	--	--	16	228
Uganda	--	--	--	--	--	--	--	8
United Kingdom	--	--	--	--	--	(3)	(3)	69
Vietnam	--	--	--	--	--	--	--	19
Total	166	242	147	82	102	85	824	9,400
Total, year to date	2,310	2,090	392	1,490	1,750	1,360	9,400	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 1/2 unit.

Note: Imports of waste and scrap in December 2004 totaled 95 metric tons, tungsten content, to give a year-to-date total of 1,160 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
2003	20	99	1,130	1,700	1,440	4,390	XX
2004:							
October	1	--	43	120	96	260	2,750
November	4	--	37	70	84	194	2,950
December:							
Argentina	--	--	--	(4)	(4)	(4)	1
Australia	--	--	(4)	(4)	--	(4)	33
Austria	--	--	--	--	--	--	7
Belgium	--	--	(4)	(4)	(4)	1	13
Brazil	--	--	1	(4)	(4)	2	36
Canada	--	--	3	6	4	13	223
Chile	--	--	(4)	--	--	(4)	3
China	--	--	2	(4)	1	2	46
Columbia	--	--	--	--	(4)	(4)	6
Czech Republic	--	--	--	--	2	2	14
France	--	--	1	38	(4)	39	196
Georgia	--	--	--	--	(4)	(4)	1
Germany	--	--	6	29	8	43	607
Hong Kong	--	--	--	--	(4)	(4)	5
Hungary	--	--	--	--	(4)	(4)	77
India	--	--	(4)	--	1	1	33
Indonesia	--	--	--	--	(4)	(4)	1
Ireland	--	--	--	3	--	3	10
Israel	--	--	4	--	(4)	4	21
Italy	--	--	2	--	2	4	68
Japan	--	--	(4)	1	11	12	137
Korea, Republic of	--	--	1	--	1	2	39
Luxembourg	--	--	--	4	--	4	36
Malaysia	--	--	--	(4)	(4)	(4)	16
Mexico	--	--	1	1	6	8	282
Netherlands	(4)	--	--	--	(4)	(4)	22
Norway	--	--	--	--	(4)	(4)	5
Peru	--	--	--	--	--	--	3
Philippines	--	--	--	--	--	--	4
Poland	--	--	--	--	--	--	1
Romania	--	--	--	--	--	--	1
Saudi Arabia	--	--	--	--	--	--	1
Singapore	(4)	--	1	(4)	(4)	1	14
Slovakia	--	--	--	--	(4)	(4)	2
South Africa	--	--	(4)	--	--	(4)	31
Spain	--	--	(4)	--	2	2	26
Sweden	--	--	(4)	54	2	56	193
Switzerland	--	--	(4)	--	3	3	25
Taiwan	--	--	4	(4)	17	20	307
Thailand	--	--	(4)	--	--	(4)	4
Turkey	--	--	(4)	--	--	(4)	18
United Arab Emirates	--	--	--	--	(4)	(4)	2
United Kingdom	1	--	3	62	3	69	664
Venezuela	--	--	2	--	--	2	7
Other	--	--	--	(4)	(4)	(4)	3
Total	1	--	31	199	64	295	3,240
Total, year to date	43	125	433	1,440	1,210	3,240	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 1/2 unit.

Note: Estimated exports of waste and scrap in December 2004 totaled 38 metric tons, tungsten content, to give a year-to-date estimated total of 525 metric tons, tungsten content.

Source: U.S. Census Bureau.