

# Mineral Industry Surveys

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## TUNGSTEN IN SEPTEMBER 2000

U.S. net production of intermediate tungsten products, including metal powder and tungsten carbide powder produced from hydrogen-reduced metal powder, was 14% higher during January through September 2000 than net production during the same period in 1999, 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 through September 2000 was 8% higher than that during the same period in 1999. These materials were used to make alloys, cemented carbides, mill products, catalysts, and pigments.

Data for U.S. imports and exports for September 2000 will be published in a subsequent issue.

### Note

All data in this report have been rounded to no more than three

significant digits. Totals and percentages were calculated by using unrounded data.

### 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 ( $\text{WO}_3$ ) content of 65%. The prices for October 1 to 31, 2000, are as follows:

Low—\$40/metric ton unit  $\text{WO}_3$  (\$36/short ton unit  $\text{WO}_3$ )  
High—\$53/metric ton unit  $\text{WO}_3$  (\$48/short ton unit  $\text{WO}_3$ )

TABLE 1  
U.S. SALIENT TUNGSTEN STATISTICS 1/

(Metric tons, tungsten content)

Period	Concentrate				Intermediate products					
	Reported consumption	Imports for consumption	Stocks, end of period		Reported scrap consumption	Net production 4/	Reported consumption 5/	Stocks, end of period		
			Industry 2/	U.S. Government 3/				Industry 6/	U.S. Government 3/	
1999:										
September	395	94	W	34,600	411	836	747	1,080	2,700	
October	W	133	W	34,600	490	854	741	1,190	2,700	
November	W	71	W	34,600	398	600	661	1,070	2,700	
December	W	66	W	34,600	316	720	722	1,070	2,700	
January-December 7/	2,100	2,870	XX	XX	5,220	8,500	8,320	XX	XX	
2000:										
January	W	267	W	34,600	482 r/	765	749	1,040	2,700	
February	W	56	W	34,600	444 r/	775	690	1,100	2,650	
March	W	209	W	34,600	462 r/	905	754	1,140	2,600	
April	W	277	W	34,600	396 r/	848	746	1,250	2,480	
May	W	336	W	33,900	361 r/	849 r/	763	1,360 r/	2,320	
June	W	169	W	33,900	418 r/	830 r/	757	1,450 r/	2,320	
July	W	196	W	33,900	410 r/	766 r/	730	1,410 r/	2,290	
August	W	136	W	33,900	427 r/	675 r/	734	1,420 r/	2,280	
September	W	NA	W	33,500	377	770	750	1,400	2,250	
Total	W	NA	XX	XX	3,780	7,190	6,670	XX	XX	

r/ Revised. NA Not available. W Withheld to avoid disclosing company proprietary data; not included in total. XX Not applicable.

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

2/ Reported by consumers.

3/ Data from Defense National Stockpile Center. Includes material committed for sale pending shipment.

4/ Net production of tungsten metal powder, tungsten carbide powder, chemicals, and other products.

5/ Includes estimates and scrap.

6/ Reported by producers.

7/ Does not include withheld data.

TABLE 2  
U.S. PRODUCTION, CONSUMPTION, AND STOCKS OF  
AMMONIUM PARATUNGSTATE, BY MONTH 1/

(Metric tons, tungsten content)

Period	Production	Consumption	Stocks, end of period 2/
1999:			
September	554	570	389
October	670	717	432
November	499	604	363
December	500	490	376
January-December	7,330	7,490	XX
2000:			
January	552	641	402
February	575	695	237
March	740	729	W
April	W	726	123
May	W	671 r/	W
June	W	W	68 r/
July	W	W	109 r/
August	W	757 r/	152 r/
September	508	501	W
Total 3/	2,380	4,720	XX

r/ Revised. W Withheld to avoid disclosing company proprietary data; not included in "Total." XX Not applicable.

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

2/ Producers and consumers.

3/ Does not include withheld data.

TABLE 3  
U.S. PRODUCTION AND STOCKS OF TUNGSTEN PRODUCTS 1/

(Metric tons, tungsten content)

Product	Net production 2/				Stocks at end of period		
	2000			Year to date	2000		
	1999	August	September		1999	August	September
Metal powder	4,540	373 r/	486	4,160	626	669 r/	688
Tungsten carbide powder (made from metal powder)	3,960	302 r/	284	3,030	441	608 r/	580
Cast and crystalline carbide powder; other	W	W	W	W	W	W	W
Chemicals	W	W	W	W	W	139 r/	130
Total 3/	8,500	675 r/	770	7,190	1,070	1,420 r/	1,400

r/ Revised. W Withheld to avoid disclosing company proprietary data; not included in "Total."

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

2/ Gross production less quantity used to make other products in table.

3/ Does not include withheld data.

TABLE 4  
U.S. REPORTED CONSUMPTION OF TUNGSTEN, BY END USE IN 2000 1/ 2/ 3/

(Metric tons, tungsten content)

End use	August	September	Year to date
Steels	38	38	378
Superalloys	26 r/	27	266
Other alloys (excludes steels and superalloys) 4/	W	W	W
Cemented carbides 5/	483	498	4,410
Mill products made from metal powder	W	W	W
Chemical uses	W	W	W
Miscellaneous and unspecified	186	187	1,620
Total	734 r/	750	6,670

W Withheld to avoid disclosing company proprietary data; included with "Miscellaneous and unspecified."

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

2/ Does not include materials used in making primary tungsten products.

3/ Includes estimates.

4/ Includes welding and hard-facing rods and materials, wear- and corrosion-resistant alloys, and nonferrous alloys.

5/ Includes diamond bit matrices, cemented and sintered carbides, and cast carbide dies or parts.

TABLE 5  
U.S. REPORTED CONSUMPTION AND CONSUMER STOCKS OF TUNGSTEN MATERIALS 1/ 2/ 3/

(Metric tons, tungsten content)

Period	Ferro- tungsten	Tungsten metal powder	Tungsten carbide powder	Tungsten scrap	Other tungsten materials 4/	Total
<b>Consumption:</b>						
<b>1999:</b>						
September	51	169	498	21	8	747
October	41	172	498	21	8	741
November	39	87	499	26	11	661
December	43	146	495	28	10	722
January-December	473	1,500	5,930	317	103	8,320
<b>2000:</b>						
January	41	182	486	31 r/	8	749 r/
February	42	120	489	31 r/	9	690 r/
March	52	152	507	34 r/	8	754 r/
April	41	178	481	35 r/	11	746 r/
May	41	180	495	38 r/	9	763 r/
June	37 r/	182	496	32 r/	10	757
July	36 r/	174	483	28 r/	8	730
August	37	175	485	29 r/	8	734 r/
September	36	175	498	32	8	750
January-September	364	1,520	4,420	291	80	6,670
<b>Stocks:</b>						
<b>1999:</b>						
September	22	12	491	28	11	564
October	27	15	498	32	11	582
November	25	17	494	26	13	575
December	33	15	475	22	12	557
<b>2000:</b>						
January	33	18	413	24 r/	12	499 r/
February	27	14	415	29 r/	11	497 r/
March	38	16	413	33 r/	14	514 r/
April	37	16	418	35 r/	11	517 r/
May	29	17	418	31	13	508
June	52	17	415	27	16	526
July	48	13	409	28 r/	11	509 r/
August	44 r/	14	420	30 r/	11	520 r/
September	41	12	412	40	11	516

r/ Revised.

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

2/ Does not include materials used in making primary tungsten products.

3/ Includes estimates.

4/ Includes tungsten chemicals.

TABLE 6  
U.S. IMPORTS FOR CONSUMPTION OF TUNGSTEN, BY COUNTRY 1/

(Metric tons, tungsten content)

Period and country of origin	Ores and concentrates	Ammonium tungstates	Ferrotungsten	Metal powder	Tungsten carbide powder	Other 2/	Total	Total year to date
1999	2,870	1,920	669	310	790	3,100	9,670	XX
2000:								
June	169	177	29	52	96	159	682	4,770
July	196	119	86	11	82	196	691	5,460
August:								
Australia	--	--	--	--	--	--	--	(3/)
Austria	--	--	--	--	--	2	2	33
Belgium	--	--	--	(3/)	--	(3/)	(3/)	3
Bolivia	59	--	--	--	(3/)	--	59	316
Brazil	--	--	--	--	--	(3/)	(3/)	(3/)
Canada	--	--	--	(3/)	40	4	45	353
China	--	170	43	18	9	78	318	3,310
Estonia	--	--	--	--	--	--	--	8
France	--	--	--	--	1	(3/)	1	6
Germany	--	25	--	4	7	10	45	272
Hong Kong	--	--	--	--	--	--	--	9
Hungary	--	--	--	--	--	--	--	6
India	--	--	--	--	--	(3/)	(3/)	(3/)
Ireland	--	--	--	--	--	--	--	(3/)
Israel	--	--	--	2	(3/)	1	4	109
Italy	--	--	--	--	--	--	--	1
Japan	--	--	--	2	--	2	4	30
Kazakhstan	--	--	--	--	--	--	--	22
Korea, Republic of	--	--	--	1	--	(3/)	1	6
Luxembourg	--	--	--	--	--	--	--	12
Mexico	--	--	--	--	--	--	--	(3/)
Mongolia	--	--	--	--	--	--	--	14
Netherlands	--	--	--	(3/)	--	(3/)	(3/)	10
Netherlands Antilles	--	--	--	--	--	--	--	(3/)
New Zealand	--	--	--	7	--	--	7	7
Peru	9	--	--	--	--	--	9	98
Portugal	20	--	--	--	--	--	20	208
Russia	47	96	--	10	3	104	260	1,190
Rwanda	--	--	--	--	--	--	--	59
Singapore	--	--	--	--	--	(3/)	(3/)	1
South Africa	--	--	--	--	(3/)	--	(3/)	1
Spain	--	--	--	--	--	--	--	(3/)
Sweden	--	--	--	--	--	(3/)	(3/)	(3/)
Switzerland	--	--	--	--	--	(3/)	(3/)	3
Taiwan	--	--	--	--	--	(3/)	(3/)	(3/)
Thailand	--	--	--	--	--	(3/)	(3/)	(3/)
United Kingdom	--	--	--	20	--	1	21	168
Total	136	291	43	64	60	203	796	6,250
Total, year to date	1,650	1,380	426	387	645	1,770	6,250	XX

XX Not applicable. -- Zero.

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

2/ Includes other unwrought tungsten, wrought tungsten, calcium and other tungstates, tungsten oxides, tungsten chlorides, other tungsten compounds, ash and compounds, ash and residues containing mainly tungsten, and other mixtures of inorganic compounds containing tungsten. Tungsten content estimated in part.

3/ Less than 1/2 unit.

Note: Imports of waste and scrap in August 2000 totaled 59 metric tons, tungsten content.

Source: U.S. Census Bureau.

TABLE 7  
U.S. EXPORTS OF TUNGSTEN, BY COUNTRY 1/

(Metric tons, tungsten content)

Period and country of destination	Ores and concentrates 2/	Ammonium tungstates	Metal powder 2/	Tungsten carbide powder	Other 3/	Total	Total, year to date
1999	26	103	711	701	498	2,040	XX
2000:							
June	2	--	45	80	33	161	833
July	6	1	54	62	35	158	991
August:							
Australia	--	--	1	(4/)	--	1	6
Austria	--	--	--	--	--	--	1
Barbados	--	--	--	--	--	--	(4/)
Belgium	--	--	--	--	1	1	7
Bolivia	--	--	--	--	--	--	(4/)
Brazil	--	--	(4/)	(4/)	1	2	16
Canada	--	--	4	17	5	25	210
Chile	--	--	--	--	--	--	(4/)
China	--	--	--	(4/)	(4/)	(4/)	4
Denmark	--	--	--	--	--	--	14
Egypt	--	--	--	--	--	--	6
France	--	--	1	2	1	3	23
Germany	--	--	19	9	16	43	329
Hong Kong	--	--	--	--	--	--	3
Hungary	--	--	--	--	2	2	20
India	--	--	(4/)	(4/)	1	1	12
Indonesia	--	--	--	--	(4/)	(4/)	6
Ireland	--	--	--	--	--	--	2
Israel	--	--	--	--	(4/)	(4/)	2
Italy	--	--	1	6	2	9	65
Japan	(4/)	--	2	(4/)	1	3	35
Korea, Republic of	--	--	(4/)	--	(4/)	1	4
Luxembourg	--	--	--	--	--	--	1
Malaysia	--	--	--	--	(4/)	(4/)	3
Mexico	--	--	--	1	4	5	44
Netherlands	--	--	12	(4/)	1	13	45
New Zealand	--	--	--	--	(4/)	(4/)	(4/)
Philippines	--	--	--	--	--	--	(4/)
Saudi Arabia	--	--	--	--	--	--	5
Singapore	--	--	(4/)	--	(4/)	1	6
South Africa	--	--	--	3	--	3	18
Spain	--	--	(4/)	--	--	(4/)	7
Sri Lanka	--	--	--	--	--	--	(4/)
Sweden	--	--	--	29	--	29	119
Switzerland	--	--	--	--	(4/)	(4/)	1
Taiwan	(4/)	--	(4/)	(4/)	(4/)	1	16
Turkey	--	--	--	--	--	--	3
United Arab Emirates	--	--	(4/)	--	--	(4/)	1
United Kingdom	--	--	1	12	(4/)	13	111
Venezuela	--	--	--	--	--	--	2
Other	--	--	(4/)	--	--	(4/)	1
Total	1	--	41	79	37	157	1,150
Total, year to date	42	24	299	493	291	1,150	XX

XX Not applicable. -- Zero.

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

2/ Tungsten content estimated from reported gross weight.

3/ Includes wrought tungsten, ferrotungsten, and other tungstates. Tungsten content estimated in part.

4/ Less than 1/2 unit.

Note: Estimated exports of waste and scrap in August 2000 totaled 100 metric tons, tungsten content.

Source: U.S. Census Bureau.