

# Mineral Industry Surveys

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## TUNGSTEN IN DECEMBER 2001

On the basis of preliminary data, total U.S. net production of tungsten metal powder and tungsten carbide powder produced from metal powder in 2001 was approximately the same as that produced in 2000, 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 2001 was approximately the same as that consumed during 2000. These materials were used to make alloys, cemented carbides, mill products, catalysts, and pigments.

Data for U.S. imports and exports for December 2001 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 (WO<sub>3</sub>) content of 65%. The prices for January 1 to 31, 2002, are as follows:

Low—\$34/metric ton unit WO<sub>3</sub> (\$31/short ton unit WO<sub>3</sub>)

High—\$48/metric ton unit WO<sub>3</sub> (\$44/short ton unit WO<sub>3</sub>)

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/
2000:									
December	W	190	W	33,400	413	761	707	1,160	2,110
January-December	W	2,370	XX	XX	5,040	9,780 7/	9,100	XX	XX
2001:									
January	W	151	W	33,400	479	907	785	W	2,050
February	W	112	W	33,200	483	838	730	W	1,840
March	W	92	W	32,600	488	859	708	W	1,740
April	W	179	W	32,500	594	985	739	W	1,710
May	W	302	W	32,300	450	866	699	1,030	1,610
June	W	288	W	32,300	477	904	656	1,040	1,540
July	W	275	W	32,300	533	735	729	909	1,490
August	W	247	W	32,100	499	788	726	856	1,440
September	W	246	W	32,100	391	796	707	818	1,410
October	W	389	W	NA	438	637	715 r/	709	NA
November	W	149	W	NA	361	744	708 r/	720	NA
December	W	NA	W	NA	342	740	659	712	NA
Total	W	NA	XX	XX	5,540	9,800	8,560	XX	XX

r/ Revised. NA Not available. W Withheld to avoid disclosing company proprietary data. 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 and tungsten carbide powder.

5/ Includes estimates and scrap.

6/ Data for tungsten metal powder and tungsten carbide powder reported by producers.

7/ Revised after the Mineral Industry Surveys Tungsten 2000 Annual Review was published.

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/
2000:			
December	W	749	W
January-December 3/	1,270	7,590	XX
2001:			
January	W	905	W
February	W	W	W
March	W	890	151
April	W	927	W
May	W	W	119
June	W	913	88
July	W	726	100
August	W	843	119
September	W	632	95
October	W	782	95
November	W	656	W
December	W	598	W
Total 3/	W	7,870	XX

W Withheld to avoid disclosing company proprietary data. 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	2001		Year to date	2001		
		November	December		2000	November	December
Metal powder	5,290 3/	468	482	5,390	621	367	363
Tungsten carbide powder (made from metal powder)	4,490	276	258	4,410	538	353	349
Total 4/	9,780 3/	744	740	9,800	1,160	720	712

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/ Revised after the Mineral Industry Surveys Tungsten 2000 Annual Review was published.

4/ Data for cast and crystalline tungsten carbide powder and tungsten chemicals are withheld to avoid disclosing company proprietary data.

TABLE 4  
U.S. REPORTED CONSUMPTION OF TUNGSTEN, BY END USE IN 2001 1/ 2/ 3/

(Metric tons, tungsten content)

End use	November	December	Year to date
Steels	37	37	516
Superalloys	38	26	372
Other alloys (excludes steels and superalloys) 4/	W	W	W
Cemented carbides 5/	485	455	5,830
Mill products made from metal powder	W	W	W
Chemical uses	W	W	W
Miscellaneous and unspecified	147 r/	141	1,840
Total	708 r/	659	8,560

r/ Revised. 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 tool matrices, cemented and sintered carbides, and cast carbide dies or parts.

TABLE 5  
U.S. REPORTED CONSUMER STOCKS OF TUNGSTEN MATERIALS 1/

(Metric tons, tungsten content)

Period	Ferro- tungsten	Tungsten metal powder	Tungsten carbide powder	Tungsten scrap	Other tungsten materials 2/	Total
2000:						
December 3/	33	29	381	44	9	495
2001:						
January	28 r/	16	391	43	11	489 r/
February	32	18	404	40	11	506
March	26	13	401	34	11	485
April	23	16	403	29	11	482
May	27	17	399	29	11	484
June	17	14	403	36	11	482
July	39	14	407	30	11	502
August	32	13	398	37	11	490
September	39	14	400	30	11	493
October	44	17	392	32	11	497
November	43	16	394	37	11	501
December	40	16	398	34	11	500

r/ Revised.

1/ Includes estimates.

2/ Includes tungsten chemicals.

3/ Data based on monthly reports.

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	Ferro-tungsten	Metal powder	Tungsten carbide powder	Other 2/	Total	Total year to date
2000	2,370	2,270	470	593	1,000	2,480	9,190	XX
2001:								
September	246	235	15	58	62	72	688	7,280
October	389	185	13	112	85	97	882	8,160
November:								
Australia	--	--	--	--	--	--	--	(3/)
Austria	--	--	--	--	--	1	1	81
Belgium	--	--	--	(3/)	--	(3/)	(3/)	11
Bolivia	50	--	--	--	--	--	50	508
Brazil	--	--	--	--	--	--	--	6
Canada	--	--	--	--	24	--	24	407
China	21	182	--	14	14	291	521	5,580
Czech Republic	--	--	--	--	--	--	--	8
France	--	--	--	--	(3/)	1	1	10
Germany	--	4	--	8	7	4	24	396
Hong Kong	--	--	--	--	5	1	6	273
Hungary	--	--	--	--	--	(3/)	(3/)	6
India	--	--	--	--	--	(3/)	(3/)	16
Ireland	--	--	--	--	--	--	--	(3/)
Israel	--	--	--	--	13	1	14	182
Italy	--	--	--	--	(3/)	(3/)	(3/)	1
Japan	--	--	--	4	(3/)	17	21	128
Korea, Republic of	--	--	--	--	1	--	1	52
Luxembourg	--	--	--	--	--	--	--	16
Malaysia	--	--	--	--	--	--	--	(3/)
Mexico	--	--	--	--	--	--	--	2
Mongolia	12	--	--	--	--	--	12	50
Netherlands	--	--	--	--	--	(3/)	(3/)	4
Pakistan	--	--	--	--	--	--	--	14
Peru	5	--	--	--	--	--	5	44
Portugal	49	--	--	--	--	--	49	439
Russia	--	--	--	--	--	(3/)	(3/)	416
Rwanda	--	--	--	--	--	--	--	12
Singapore	--	--	--	--	--	(3/)	(3/)	3
Spain	--	--	--	--	--	(3/)	(3/)	(3/)
Sweden	--	--	--	--	--	(3/)	(3/)	3
Switzerland	--	--	--	--	--	(3/)	(3/)	1
Taiwan	--	--	--	--	--	(3/)	(3/)	1
Thailand	--	--	--	--	--	(3/)	(3/)	40
Uganda	8	--	--	--	--	--	8	39
United Kingdom	5	--	--	--	(3/)	1	5	161
Venezuela	--	--	--	--	--	--	--	(3/)
Total	149	186	--	25	65	317	742	8,910
Total, year to date	2,430	2,420	322	843	898	1,990	8,910	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 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 November 2001 totaled 66 metric tons, tungsten content, to give a year-to-date total of 933 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
2000	70	53	467	969	483	2,040	XX
2001:							
September	38	21	28	155	81	323	3,250
October	10	58	37	82	90	277	3,530
November:							
Australia	--	--	1	1	(4/)	2	22
Austria	--	--	--	--	(4/)	(4/)	10
Belgium	--	--	--	(4/)	(4/)	(4/)	18
Brazil	--	--	(4/)	(4/)	(4/)	(4/)	28
Canada	--	--	3	13	7	23	249
Chile	--	--	(4/)	--	--	(4/)	1
China	--	--	--	--	(4/)	(4/)	18
Colombia	--	--	--	--	(4/)	(4/)	7
Czech Republic	--	--	--	--	--	--	51
Denmark	--	--	--	--	--	--	1
Ecuador	--	--	--	--	--	--	5
France	--	--	(4/)	4	1	5	153
Germany	--	--	17	30	(4/)	48	911
Hong Kong	--	--	(4/)	--	--	(4/)	6
Hungary	--	--	--	--	1	1	14
India	--	--	(4/)	(4/)	1	1	24
Indonesia	--	--	--	--	(4/)	(4/)	4
Ireland	--	--	--	(4/)	(4/)	(4/)	5
Israel	--	--	(4/)	1	1	2	19
Italy	--	--	1	1	(4/)	1	15
Japan	(4/)	--	(4/)	2	1	4	87
Korea, Republic of	--	--	--	2	(4/)	2	20
Malaysia	--	--	--	--	--	--	1
Mexico	--	--	--	(4/)	3	4	67
Netherlands	5	--	--	--	21	26	553
Philippines	--	--	--	--	--	--	3
Russia	53	--	--	--	--	53	85
Singapore	--	--	(4/)	(4/)	(4/)	1	9
South Africa	--	--	--	--	--	--	17
Spain	--	--	(4/)	--	2	2	24
Sweden	2	--	--	22	(4/)	24	435
Switzerland	--	--	(4/)	3	(4/)	3	12
Taiwan	--	--	--	--	(4/)	(4/)	21
Turkey	--	--	(4/)	--	--	(4/)	2
United Arab Emirates	--	--	--	--	--	--	1
United Kingdom	6	--	2	22	1	30	858
Other	--	--	(4/)	(4/)	(4/)	(4/)	7
Total	66	--	26	101	40	233	3,760
Total, year to date	205	236	531	1,860	925	3,760	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 November 2001 totaled 47 metric tons, tungsten content, to give a year-to-date estimated total of 895 tons, tungsten content.

Source: U.S. Census Bureau.