

Mineral Industry Surveys

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TUNGSTEN IN JANUARY, FEBRUARY, AND MARCH 2009

The following quarterly comparisons are based on preliminary data. During the quarter ending March 31, 2009, total U.S. net production of intermediate tungsten products, including metal powder and tungsten carbide powder, was 29% lower than production during the quarter ending December 31, 2008, and 35% lower than that produced during the quarter ending March 31, 2008, 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 the quarter ending March 31, 2009, was 6% higher than consumption during the quarter ending December 31, 2008, and 7% lower than that consumed during the quarter ending March 31, 2008. 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 February 2009 and full year 2008 totals by material are published in this issue.

Update

Selected prices from Metal Bulletin for January, February, and March 2009, 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 (WO₃) 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:

January:

Low—\$276/metric ton unit WO₃ (\$250/short ton unit WO₃)
High—\$281/metric ton unit WO₃ (\$255/short ton unit WO₃)

February:

Low—\$220/metric ton unit WO₃ (\$200/short ton unit WO₃)
High—\$281/metric ton unit WO₃ (\$255/short ton unit WO₃)

March:

Low—\$220/metric ton unit WO₃ (\$200/short ton unit WO₃)
High—\$231/metric ton unit WO₃ (\$210/short ton unit WO₃)

Concentrates:

January:

Low—\$140/metric ton unit WO₃ (\$127/short ton unit WO₃)
High—\$160/metric ton unit WO₃ (\$145/short ton unit WO₃)

February:

Low—\$140/metric ton unit WO₃ (\$127/short ton unit WO₃)
High—\$160/metric ton unit WO₃ (\$145/short ton unit WO₃)

March:

Low—\$140/metric ton unit WO₃ (\$127/short ton unit WO₃)
High—\$160/metric ton unit WO₃ (\$145/short ton unit WO₃)

TABLE 1
U.S. SALIENT TUNGSTEN STATISTICS¹

(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
2008:									
January	W	221	W	21,200	321	818	1,010	793	235
February	W	383	W	21,200	364	650	976	738	235
March	W	339	W	21,200	377	788	988	685	235
April	W	252	W	21,100	502	802	962	728	235
May	W	378	W	20,900	421	811	955	794	235
June	W	344	W	20,800	459	756	964	772	235
July	W	400	W	20,500	302	829	851	747	196
August	W	224	W	20,400	452	749	999	734	196
September	W	314	W	19,800	319	790	939	685	183
October	W	393	W	19,700	503	796	960	753	183
November	W	432	W	19,700	306	632	867	733	183
December	W	312	W	19,700	309	645	791	733	183
January-December	W	3,990	XX	XX	4,640	9,070	11,300	XX	XX
2009:									
January	W	459	W	19,700	329	450	926	827	183
February	W	341	W	19,800	287	464	920	717	183
March	W	409	W	19,800	319	563	926	721	183
Total	W	1,210	XX	XX	935	1,480	2,770	XX	XX

W Withheld to avoid disclosing company proprietary data. XX Not applicable.

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

²Reported by consumers.

³Data from Defense National Stockpile Center. Data are uncommitted material only.

⁴Net production of tungsten metal powder and tungsten carbide powder.

⁵Includes estimates and scrap.

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

TABLE 2
U.S. PRODUCTION, CONSUMPTION, AND STOCKS OF
AMMONIUM PARATUNGSTATE, BY MONTH¹

(Metric tons, tungsten content)

Period	Production	Consumption	Stocks, end of period ²
2008:			
January	W	1,250	73
February	W	1,220	36
March	W	1,130	W
April	W	(3)	147
May	W	(3)	112
June	W	1,280	85
July	W	(3)	W
August	W	827	W
September	W	1,160	87
October	W	1,190	120
November	W	(3)	W
December	W	851	72
January-December	W	13,100	XX
2009:			
January	W	789	W
February	W	854	100
March	W	W	W
Total	W	W	XX

W Withheld to avoid disclosing company proprietary data.

XX Not applicable.

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

²Producers and consumers.

³Withheld to avoid disclosing company proprietary data; included in "Total."

TABLE 3A
U.S. PRODUCTION AND STOCKS OF TUNGSTEN PRODUCTS¹

(Metric tons, tungsten content)

Product ³	Net production ²				Stocks at end of period		
	2008	2009			2008	2009	
		January	February	Year to date		January	February
Metal powder	4,160	179	257	436	385	476	396
Tungsten carbide powder	4,910	271	207	478	349	351	321
Total	9,070	450	464	914	733	827	717

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

²Receipts plus gross production less quantity used to make other products in table.

³Data for cast and crystalline tungsten carbide powder and tungsten chemicals are withheld to avoid disclosing company proprietary data; not included in "Total."

TABLE 3B
U.S. PRODUCTION AND STOCKS OF TUNGSTEN PRODUCTS¹

(Metric tons, tungsten content)

Product ³	Net production ²				Stocks at end of period		
	2009				2008	2009	
	2008	February	March	Year to date		February	March
Metal powder	4,160	257	334	770	385	396	404
Tungsten carbide powder	4,910	207	229	707	349	321	317
Total	9,070	464	563	1,480	733	717	721

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

²Receipts plus gross production less quantity used to make other products in table.

³Data 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^{1,2,3}

(Metric tons, tungsten content)

End use	2009			
	January	February	March	Year to date
Steels	23	23	23	69
Superalloys	W	W	W	W
Other alloys (excludes steels and superalloys) ⁴	W	W	W	W
Cemented carbides ⁵	517	508	508	1,530
Mill products made from metal powder	W	W	W	W
Chemical uses	W	W	W	W
Miscellaneous and unspecified	386	389	395	1,170
Total	926	920	926	2,770

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

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

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

³Includes estimates.

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

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

TABLE 5
U.S. REPORTED CONSUMPTION AND CONSUMER STOCKS OF TUNGSTEN MATERIALS¹

(Metric tons, tungsten content)

Period	Ferro- tungsten	Tungsten metal powder	Tungsten carbide powder	Tungsten scrap	Other tungsten materials ²	Total
Consumption:						
2008:						
January	19	W	527	W	6	1,010
February	19	W	525	W	6	976
March	19	W	528	W	6	988
April	20	W	529	W	6	962
May	19	W	524	W	6	955
June	20	W	520	W	6	964
July	20	W	517	W	6	851
August	20	W	523	W	6	999
September	20	W	522	W	6	939
October	20	W	525	W	6	960
November	20	W	525	W	6	867
December	20	W	519	W	6	791
January-December	237	W	6,280	W	72	11,300
2009:						
January	20	W	524	W	6	926
February	20	W	516	W	6	920
March	20	W	516	W	6	926
Total	60	W	1,560	W	18	2,770
Stocks:						
2008:						
January	16	25	422	24	9	495
February	15	25	418	24	9	490
March	17	24	420	25	9	494
April	16	25	420	26	9	495
May	17	25	418	22	9	491
June	17	25	422	25	9	498
July	18	25	429	28	9	508
August	17	25	426	27	9	504
September	17	25	421	45	9	517
October	16	25	423	50	9	522
November	15	25	421	35	9	504
December	15	25	448	28	9	524
2009:						
January	17	24	467	27	9	544
February	17	25	461	39	9	550
March	17	25	461	26	9	537

W Withheld to avoid disclosing company proprietary data; included in "Total."

¹Includes estimates.

²Includes tungsten chemicals.

TABLE 6A
U.S. IMPORTS FOR CONSUMPTION OF TUNGSTEN, BY COUNTRY¹

(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
2007	3,880	2,700	357	1,480	1,450	1,670	11,500	XX
2008:								
October	393	122	21	111	128	188	963	9,600
November	432	347	16	64	109	199	1,170	10,800
December:								
Austria	--	--	--	--	--	1	1	28
Belgium	--	--	--	--	(3)	--	(3)	9
Bolivia	73	--	--	--	--	--	73	1,100
Brazil	15	--	--	--	--	--	15	170
Canada	78	--	--	--	5	(3)	83	1,340
China	--	300	--	9	70	186	565	5,450
Czech Republic	--	--	--	(3)	--	2	2	27
France	--	--	--	--	(3)	1	2	8
Germany	--	5	--	11	3	2	21	647
Hong Kong	--	--	--	--	--	2	2	83
India	--	--	--	--	--	(3)	(3)	45
Ireland	--	--	--	--	--	--	--	5
Israel	--	--	--	37	3	1	41	481
Japan	--	--	--	7	--	5	12	77
Kenya	13	--	--	--	--	--	13	13
Korea, Republic of	--	--	--	35	4	(3)	40	219
Mexico	--	--	--	--	--	--	--	14
Mongolia	--	--	--	--	--	--	--	51
Netherlands	--	--	--	--	--	(3)	(3)	30
Peru	37	--	--	--	--	--	37	401
Portugal	52	--	--	--	--	--	52	836
Russia	--	--	--	--	--	1	1	71
Rwanda	--	--	--	--	--	--	--	113
Singapore	--	--	--	--	--	2	2	17
South Africa	--	--	--	--	--	--	--	21
Spain	29	--	--	--	--	(3)	30	148
Sweden	--	--	--	--	6	(3)	6	176
Thailand	15	--	--	--	--	--	15	147
Uganda	--	--	--	--	--	--	--	30
United Kingdom	--	--	--	--	(3)	(3)	(3)	9
Vietnam	--	--	--	--	--	--	--	10
Other	--	--	--	--	--	1	1	7
Total	312	304	--	100	92	206	1,010	11,800
Total, year to date	3,990	2,510	309	1,180	1,600	2,180	11,800	XX

XX Not applicable. -- Zero.

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

²Includes 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.

³Less than ½ unit.

Note: Imports of waste and scrap in December 2008 totaled 119 metric tons, tungsten content, to give a year-to-date total of 1,270 metric tons, tungsten content.

Source: U.S. Census Bureau.

TABLE 6B
U.S. IMPORTS FOR CONSUMPTION OF TUNGSTEN, BY COUNTRY¹

(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
2008	3,990	2,510	309	1,180	1,600	2,180	11,800	XX
2009:								
January:								
Austria	--	--	--	--	4	2	6	6
Belgium	--	--	--	--	(3)	(3)	1	1
Bolivia	144	--	--	--	--	--	144	144
Canada	141	--	--	1	2	(3)	144	144
China	--	387	--	14	65	122	587	587
Czech Republic	--	--	--	--	--	1	1	1
France	--	--	--	--	1	(3)	1	1
Germany	--	31	--	19	3	1	53	53
Hong Kong	--	--	--	--	--	2	2	2
Israel	--	--	--	22	--	(3)	23	23
Japan	--	--	--	(3)	(3)	1	1	1
Korea, Republic of	--	--	--	32	--	--	32	32
Netherlands	--	--	--	--	--	3	3	3
Peru	37	--	--	--	--	--	37	37
Portugal	83	--	--	--	--	--	83	83
Rwanda	23	--	--	--	--	--	23	23
Singapore	--	--	--	--	--	1	1	1
Spain	20	--	--	--	--	--	20	20
Uganda	12	--	--	--	--	--	12	12
Vietnam	--	9	--	--	--	--	9	9
Other	--	--	--	--	--	1	1	1
Total	459	426	--	87	74	134	1,180	1,180
Total, year to date	459	426	--	87	74	134	1,180	XX

XX Not applicable. -- Zero.

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

²Includes 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.

³Less than ½ unit.

Note: Imports of waste and scrap in January 2009 totaled 83 metric tons, tungsten content.

Source: U.S. Census Bureau.

TABLE 6C
U.S. IMPORTS FOR CONSUMPTION OF TUNGSTEN, BY COUNTRY¹

(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
2008	3,990	2,510	309	1,180	1,600	2,180	11,800	XX
2009:								
January	459	426	--	87	74	134	1,180	XX
February:								
Austria	--	--	--	--	--	1	1	8
Belgium	--	--	--	--	(3)	1	1	2
Bolivia	145	--	--	--	--	--	145	289
Canada	8	--	--	(3)	5	(3)	14	158
China	--	137	--	19	110	55	321	907
Czech Republic	--	--	--	--	--	1	1	2
France	--	--	--	--	(3)	(3)	(3)	1
Germany	--	--	--	19	10	1	29	83
Hong Kong	--	--	--	--	--	(3)	(3)	2
India	--	--	--	--	2	(3)	2	2
Israel	--	--	--	71	6	1	78	100
Japan	--	--	--	1	--	1	2	3
Kenya	20	--	--	--	--	--	20	20
Korea, Republic of	--	--	--	17	(3)	(3)	17	49
Mexico	--	--	--	--	--	2	2	2
Mongolia	12	--	--	--	--	--	12	12
Netherlands	--	--	--	--	--	1	1	4
Peru	40	--	--	--	--	--	40	76
Portugal	83	--	--	--	--	--	83	165
Rwanda	--	--	--	--	--	--	--	23
Singapore	--	--	--	--	--	1	1	2
Spain	20	--	--	--	--	(3)	20	39
Thailand	15	--	--	--	--	--	15	15
Uganda	--	--	--	--	--	--	--	12
Vietnam	--	--	--	--	--	5	5	14
Other	--	--	--	(3)	(3)	1	1	1
Total	341	137	--	128	132	71	809	1,990
Total, year to date	800	563	--	215	207	205	1,990	XX

XX Not applicable. -- Zero.

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

²Includes 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.

³Less than ½ unit.

Note: Imports of waste and scrap in February 2009 totaled 42 metric tons, tungsten content, to give a year-to-date total of 125 metric tons, tungsten content.

Source: U.S. Census Bureau.

TABLE 7A
U.S. EXPORTS OF TUNGSTEN, BY COUNTRY¹

(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
2007	109	731	1,050	1,280	1,270	4,440	XX
2008:							
October	264	99	80	133	59	635	3,860
November	5	42	73	50	83	252	4,110
December:							
Australia	--	--	--	6	--	6	40
Austria	(4)	--	--	--	--	(4)	168
Belgium	--	--	--	--	(4)	(4)	20
Brazil	--	--	1	(4)	7	9	74
Canada	--	--	9	3	3	15	396
Chile	--	--	--	--	--	--	8
China	--	--	(4)	(4)	8	8	203
Czech Republic	--	--	--	--	(4)	(4)	20
France	--	--	1	(4)	--	1	237
Germany	--	55	18	8	5	86	1,670
Hungary	--	--	--	--	1	1	22
India	--	--	(4)	(4)	(4)	1	49
Ireland	--	--	--	4	--	4	64
Israel	--	--	(4)	--	(4)	(4)	36
Italy	--	--	1	(4)	1	1	29
Japan	--	--	1	1	3	6	105
Korea, Republic of	--	--	(4)	--	(4)	(4)	9
Malaysia	1	--	--	(4)	--	1	8
Mexico	--	--	10	1	10	21	425
Netherlands	--	--	8	--	(4)	8	30
New Zealand	--	--	--	--	7	7	7
Peru	--	--	--	--	--	--	6
Philippines	--	--	--	--	(4)	(4)	6
Singapore	--	--	1	(4)	2	3	57
South Africa	--	--	--	--	--	--	22
Spain	--	--	--	--	(4)	(4)	39
Switzerland	--	--	--	--	(4)	(4)	11
Taiwan	--	--	1	1	(4)	2	140
United Kingdom	--	--	2	18	1	20	314
Venezuela	--	--	--	2	--	2	65
Other	--	--	2	1	2	4	47
Total	1	55	56	45	51	208	4,320
Total, year to date	496	621	981	1,340	888	4,320	XX

XX Not applicable. -- Zero.

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

²Tungsten content estimated from reported gross weight.

³Includes unwrought tungsten, including bars and rods obtained simply by sintering, wrought tungsten, ferrotungsten, and other tungstates. Tungsten content estimated in part.

⁴Less than ½ unit.

Note: Estimated exports of waste and scrap in December 2008 totaled 111 metric tons, tungsten content, to give a year-to-date total of 1,650 metric tons, tungsten content.

Source: U.S. Census Bureau.

TABLE 7B
U.S. EXPORTS OF TUNGSTEN, BY COUNTRY¹

(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
2008	496	621	981	1,340	888	4,320	XX
2009:							
January:							
Australia	--	--	--	1	(4)	1	1
Austria	--	--	(4)	20	(4)	20	20
Belgium	--	--	--	1	--	1	1
Brazil	--	--	1	7	2	10	10
Canada	--	--	5	7	8	20	20
Czech Republic	--	--	--	--	2	2	2
Ecuador	--	--	--	--	1	1	1
France	--	--	2	(4)	1	3	3
Germany	(4)	37	10	6	3	56	56
Hungary	--	--	--	--	1	1	1
India	--	--	1	--	(4)	1	1
Ireland	--	--	--	1	(4)	2	2
Italy	--	--	1	--	(4)	1	1
Japan	--	--	1	(4)	3	4	4
Mexico	--	--	8	(4)	3	11	11
Singapore	--	--	1	(4)	(4)	1	1
South Africa	--	--	(4)	7	(4)	7	7
Spain	--	--	--	--	1	1	1
Sweden	--	--	--	(4)	1	1	1
United Kingdom	(4)	--	1	7	4	11	11
Venezuela	--	--	--	(4)	1	1	1
Other	--	--	1	1	1	3	3
Total	(4)	37	32	58	30	158	158
Total, year to date	(4)	37	32	58	30	158	XX

XX Not applicable. -- Zero.

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

²Tungsten content estimated from reported gross weight.

³Includes unwrought tungsten, including bars and rods obtained simply by sintering, wrought tungsten, ferrotungsten, and other tungstates. Tungsten content estimated in part.

⁴Less than ½ unit.

Note: Estimated exports of waste and scrap in January 2009 totaled 97 metric tons, tungsten content.

Source: U.S. Census Bureau.

TABLE 7C
U.S. EXPORTS OF TUNGSTEN, BY COUNTRY¹

(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
2008	496	621	981	1,340	888	4,320	XX
2009:							
January	(4)	37	32	58	30	158	158
February:							
Australia	--	--	1	2	1	3	4
Austria	--	--	--	1	--	1	21
Brazil	--	--	(4)	(4)	1	2	11
Canada	--	--	4	6	2	12	32
China	--	--	2	(4)	(4)	2	2
Czech Republic	--	--	--	--	15	15	16
France	--	--	1	(4)	2	3	7
Germany	--	--	3	4	6	13	68
Hungary	--	--	--	--	2	2	2
India	--	--	1	(4)	(4)	1	2
Ireland	--	--	--	5	--	5	6
Italy	--	--	2	--	(4)	2	3
Japan	--	--	2	4	1	7	11
Malaysia	--	--	--	--	5	5	5
Mexico	--	--	1	(4)	2	3	13
Netherlands	--	--	15	--	(4)	15	15
Singapore	--	--	1	3	4	8	9
South Africa	--	--	--	(4)	1	1	9
United Kingdom	--	--	1	5	4	10	21
Other	--	--	2	2	7	12	18
Total	--	--	36	32	48	117	274
Total, year to date	(4)	37	68	90	79	274	XX

XX Not applicable. -- Zero.

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

²Tungsten content estimated from reported gross weight.

³Includes unwrought tungsten, including bars and rods obtained simply by sintering, wrought tungsten, ferrotungsten, and other tungstates. Tungsten content estimated in part.

⁴Less than ½ unit.

Note: Estimated exports of waste and scrap in February 2009 totaled 69 metric tons, tungsten content, to give a year-to-date total of 166 metric tons, tungsten content.

Source: U.S. Census Bureau.