TUNGSTEN

(Data in metric tons of tungsten content, unless noted)

Domestic Production and Use: In 1995, one mine in California produced tungsten concentrate. The mine operated at an annual rate well below capacity. End uses of tungsten included metalworking, mining, and construction machinery and equipment, 77%; electrical and electronic machinery and equipment and transportation, 10%; lamps and lighting, 9%; chemicals, 3%; and other, 1%. The total estimated value of primary tungsten materials consumed in 1995 was $390 million.

Salient Statistics—United States:	1991	1992	1993	1994	1995[e]
Production, mine shipments	W	W	W	W	W
Imports for consumption, concentrate	7,800	2,500	1,700	3,000	5,500
Exports, concentrate	21	38	63	44	—
Government stockpile shipments, concentrate	—	—	—	—	—
Consumption: Reported, concentrate	[1]5,300	4,300	[2]2,900	[2]3,600	7,000
Apparent, all forms	[3]11,800	7,100	7,100	10,900	15,900
Price, concentrate, dollars per mtu WO_3,[4] average:					
U.S. spot market, Metals Week	61	56	43	45	60
European market	59	58	35	42	83
Stocks, producer and consumer, yearend concentrate	1,800	750	640	800	850
Employment, mine and mill	57	47	33	20	20
Net import reliance[5] as a percent of apparent consumption	91	86	82	81	87

Recycling: During 1995, the quantity of scrap reprocessed into intermediates was about 2,100 tons, representing approximately 13% of apparent consumption of tungsten in all forms.

Import Sources (1991-94): China, 38%; Germany, 9%; Bolivia, 8%; Peru, 6%; and other, 39%.

Tariff: Item	Number	Most favored nation (MFN) 12/31/95	Non-MFN[6] 12/31/95
Ore and concentrate	2611.00.0000	37.5¢/kg W cont.	$1.10/kg W cont.
Ferrotungsten	7202.80.0000	5.6% ad val.	35.0% ad val.
Tungsten powders	8101.10.0000	10.5% ad val.	58.0% ad val.
Ammonium tungstate	2841.80.0010	10.0% ad val.	49.5% ad val.
Tungsten carbide	2849.90.3000	10.5% ad val.	55.5% ad val.

Depletion Allowance: 22% (Domestic), 14% (Foreign).

Government Stockpile: The inventory shown below includes the following quantities of nonstockpile-grade tungsten (tons): ore and concentrate, 10,060; ferrotungsten, 533; metal powder, 151; and carbide powder, 51.

	Stockpile Status—9-30-95			
Material	Uncommitted inventory	Committed inventory	Authorized for disposal	Disposals Jan.-Sept. 95
Ore and concentrate	34,600	—	—	—
Metal powder	900	—	—	—
Ferrotungsten	900	—	—	—
Carbide powder	900	—	—	—

Events, Trends, and Issues: Apparent consumption of tungsten products increased by about 6% during 1995 compared with that of 1994, as a result of continued growth in the U.S. economy that began in late 1993. Demand for cemented carbide end-use products was particularly strong compared with that of 1994, whereas demand in most other end-use sectors remained at a level near that of the previous year. However, demand for ferrotungsten was substantially lower.

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Availability of tungsten materials from China, the major supplier to the world market, became progressively more limited during 1995. China National Minerals and Metals Import and Export Corp. (Minmetals) confirmed the temporary May 1995 closure of 21 mines it controlled, indicating that China was waiting until the international price of tungsten concentrate reached a predetermined level ($70 per metric ton unit of tungsten) before resuming production. China reportedly resumed production on September 10, 1995, with concentrates still priced below the $70 level. For the first time, China showed imports of concentrates, more than 400 tons in 1994 and more than 700 tons of concentrates in 1995.

Generalized System of Preferences (GSP) trade status was granted to an additional republic in the former U.S.S.R. Romania received GSP status, effective in March 1995, joining Russia, which was granted this status in October 1993, and Kazakstan and Ukraine in March 1994. Under GSP, imports from Romania will be permitted to enter the United States duty free rather than be assessed the duty that presently exists under Most-favored-nation trade status. Tungsten materials affected by the GSP status include concentrates, ferrotungsten, carbide powder blends, and certain forms of waste and scrap. There were no imports of tungsten materials from Romania, Kazakstan, and Ukraine following their receipt of GSP status. However, appreciable quantities of tungsten materials were imported from Russia during 1995, principally in the form of oxides and concentrates.

World Mine Production, Reserves, and Reserve Base:

	Mine production		Reserves[7]	Reserve base[7]
	1994	1995[e]		
United States	W	W	140,000	200,000
Australia	—	—	5,000	130,000
Austria	—	—	10,000	15,000
Bolivia	500	400	53,000	100,000
Brazil	250	100	20,000	20,000
Burma	600	100	15,000	34,000
Canada	—	—	260,000	490,000
China	17,000	10,000	960,000	1,300,000
France	—	—	20,000	20,000
Kazakstan	100	4,000	—	38,000
Korea, South	200	—	58,000	77,000
Portugal	200	100	26,000	26,000
Russia	4,000	4,000	250,000	420,000
Tajikistan	100	100	—	23,000
Thailand	100	100	30,000	30,000
Turkmenistan	—	—	—	10,000
Other countries	3,000	1,000	280,000	370,000
World total (may be rounded)	26,000	20,000	2,100,000	3,300,000

World Resources: More than 90% of the world's estimated tungsten resources are outside the United States, with about 45% in China. In addition to China and the United States, countries with significant resource potential are Australia, Austria, Bolivia, Brazil, Burma, Canada, Kazakstan, North and South Korea, Peru, Portugal, Russia, Spain, Tajikistan, Thailand, Turkey, and Turkmenistan.

Substitutes: Cemented tungsten carbide remained a primary cutting-tool insert material because of its versatility in meeting technical requirements in many turning and milling operations. However, ceramics, ceramic-metallic composites, and other materials continued to be developed and utilized as substitutes to meet the changing needs of the world market. Increased quantities of carbide cutting-tool inserts were coated with nitrides, oxides, and carbides to extend the life of the inserts. Tungsten remained the preferred and essentially unsubstitutable material for filaments, electrodes, and contacts in lamp and lighting applications. A new electrodeless, non-tungsten lamp was introduced to the market, however, for commercial and industrial use.

[e]Estimated. W Withheld to avoid disclosing company proprietary data.

[1]Excludes 2 months of withheld data.

[2]Excludes 3 months of withheld data.

[3]Delay in recording material imported at yearend 1990 believed to have caused significant statistical distortion. Consumption estimated to be about 10,100 metric tons for each year.

[4]A metric ton unit (mtu) of tungsten trioxide (WO_3) contains 7.93 kilograms of tungsten.

[5]Defined as imports - exports + adjustments for Government and industry stock changes.

[6]See Appendix B.

[7]See Appendix C for definitions.