

TUNGSTEN

Events, Trends, and Issues: World demand for tungsten was very strong through mid-1998, but was expected to be weaker during the second half of the year. World consumption remained higher than world mine production, with the shortfall being met from releases of stockpiled tungsten materials from Russia, Kazakhstan, and Eastern Europe. Prices of tungsten concentrates and ammonium paratungstate continued to decrease in 1998 and were expected to result in a further decrease in mine production from market economy countries. China remained the dominant supplier of tungsten to world markets.

Late in the year, the U.S. Congress authorized the sale of tungsten materials from the National Defense Stockpile. Tungsten was last sold by the U.S. Government in 1989.

World Mine Production, Reserves, and Reserve Base:

| | Mine production | | Reserves ⁷ | Reserve base ⁷ |
|------------------------------|-----------------|-------------------|-----------------------|---------------------------|
| | 1997 | 1998 ^e | | |
| United States | W | W | 140,000 | 200,000 |
| Australia | — | — | 1,000 | 63,000 |
| Austria | 1,400 | 1,400 | 10,000 | 15,000 |
| Bolivia | 500 | 500 | 53,000 | 100,000 |
| Brazil | 170 | 150 | 20,000 | 20,000 |
| Burma | 280 | 280 | 15,000 | 34,000 |
| Canada | — | — | 260,000 | 490,000 |
| China | 25,000 | 25,500 | 870,000 | 1,200,000 |
| France | — | — | 20,000 | 20,000 |
| Kazakhstan | 200 | 200 | NA | 38,000 |
| Korea, North | 900 | 900 | NA | 35,000 |
| Korea, Republic of | — | — | 58,000 | 77,000 |
| Portugal | 1,036 | 900 | 25,000 | 25,000 |
| Russia | 3,000 | 3,000 | 250,000 | 420,000 |
| Tajikistan | 50 | 50 | NA | 23,000 |
| Thailand | 25 | 25 | 30,000 | 30,000 |
| Turkmenistan | — | — | NA | 10,000 |
| Uzbekistan | 250 | 250 | NA | 20,000 |
| Other countries | 618 | 378 | 280,000 | 360,000 |
| World total (may be rounded) | 33,400 | 33,500 | 2,000,000 | 3,200,000 |

World Resources: More than 90% of the world's estimated tungsten resources are outside the United States. Nearly 40% of these resources are in China, 15% are in Canada, and 13% are in Russia.

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. However, an electrodeless, nontungsten lamp is available for commercial and industrial use.

Collected By 
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^e Estimated. NA Not available. W Withheld to avoid disclosing company proprietary data. ¹ Excludes 3 months of withheld data.

² A metric ton unit (mtu) of tungsten trioxide (WO₃) contains 7.93 kilograms of tungsten.

³ Defined as imports - exports + adjustments for Government and industry stock changes.

⁴ Special tariff rates apply for Canada and Mexico. ⁵ See Appendix B.

⁶ See Appendix C for definitions. ⁷ See Appendix D for definitions.