

4790 0025

(176) Item 28



MINERAL INDUSTRY SURVEYS

U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
WASHINGTON, D. C. 20240



Rogers C. B. Morton, Secretary

Thomas V. Falkie, Director

For information call Richard F. Stevens, Jr.
Telephone: 703-557-0500

Annual, Preliminary

TUNGSTEN IN 1974

In 1974 domestic production of tungsten ore and concentrate, as measured by mine shipments, rose 9% compared with 1973 to 7.7 million pounds of tungsten, according to the Bureau of Mines, U.S. Department of the Interior. Reported consumption of tungsten concentrate increased 5% to 16.2 million pounds of tungsten. In addition, over 7 million pounds of concentrate were "toll" converted to ammonium paratungstate (APT) and shipped to intermediate processors. During the year, 14.9 million pounds of tungsten in APT was produced by four processors and a total of 15.4 million pounds of APT consumed by U.S. users.

Imports of tungsten for consumption increased 10% and totaled 11.6 million pounds of contained tungsten, the highest annual import level since 1957. During 1974, these concentrate imports were valued at \$39 million (about \$53.35 per short ton unit of tungsten, excluding the U.S. duty of \$3.97/stu applicable to non-Communist countries, and the statutory duty of \$7.93/stu). The major sources of concentrate imports were: Bolivia, 18%; Canada, 16%; Portugal and Thailand, 14% each; Peru, 12%; Mexico, Republic of Korea, and People's Republic of China, 3% each; and Brazil and Burma, 2% each. The remaining concentrates were imported, in decreasing order, primarily from Malaysia, Republic of South Africa (including Territory of South-West Africa), France, Spain, Zaire, Australia, and West Germany.

Exports of tungsten concentrate, from material purchased from the U.S. Government stockpile, increased by a factor of 9 and totaled approximately 1.4 million pounds of contained tungsten. Of this amount, about 38% was exported to West Germany, 16% to the Netherlands, and 10% to East Germany. The balance was shipped to France, Japan, Sweden, the United Kingdom, and Canada.

While minor intermittent concentrate production and/or shipments were reported from about 39 mines in seven Western States (Arizona, California, Colorado, Idaho, Montana, Nevada, and Utah), two large mines continued to account for over 90% of the 1974 domestic production. Operating continuously, these two mines produced tungsten as either a coproduct or byproduct of other mineral values, primarily molybdenum. These operations were the Pine Creek mine and mill of the Mining

and Metals Division, Union Carbide Corp., located northwest of Bishop, Calif. and the Climax mine and mill of the Climax Molybdenum Co., a division of American Metal Climax, Inc. (AMAX), at Climax, Colo., about 100 miles west of Denver.

Late in 1974, Union Carbide Corp. (UCC) announced plans to reopen the Tempiute tungsten property in southern Nevada near Alamo. Part of this deposit is leased from Teledyne Wah Chang. When in full scale operation, by about mid-1976, about 2 million pounds of tungsten in concentrate will be produced annually. The concentrate will be trucked to UCC's Pine Creek facility to be converted to APT.

Annual consumption of tungsten products increased 10% to about 19.7 million pounds of tungsten during 1974. Major end use was as follows: Tungsten carbide cutting and wear resistant materials (including welding and hard facing rods and materials), 65%; tungsten metal mill products, 15%; tool steels, 10%; alloy, stainless, and heat resisting steels, 5%, superalloys, 2%, chemicals and ceramics, 1%, and other, 2%.

The European price of tungsten ore and concentrate in 1974, as quoted in the Metal Bulletin (London) and reported in Metals Week, increased dramatically and more than doubled from the previous year, ranging from a low of 21.00 pounds sterling (£) per metric ton unit in January to a high of 50.25 £/mtu in October (about \$41.53 to \$106.09/stu depending upon the prevailing rate of exchange). Throughout the year, the average European price of tungsten concentrate was 38.65 £/mtu (about \$83.63/stu).

During the year, the General Services Administration (GSA) released 5.3 million pounds of excess tungsten concentrate on the basis of monthly sealed bids. In addition, 0.8 million pounds of excess tungsten concentrate was awarded by GSA for use in two defense contracts. Over 0.2 million pounds of intermediate tungsten products were sold from excess GSA stocks (115 thousand pounds of ferrotungsten and 99 thousand pounds of hydrogen-reduced tungsten metal powder).

The Bureau of Mines Salt Lake City Metallurgy Research Center in Utah continued studies on developing extractive metallurgical techniques to economically recover tungsten from extremely low-grade deposits such as the Searles Lake (Calif.) brines; also from sludges, and tungsten scrap.