

grades, bulk or big bags, were \$50 to \$60 per ton for up to 9.8 inch (250 millimeter) lump, \$65 to \$80 per ton for 150 mesh, \$70 to \$85 per ton for 200 mesh, and \$75 to \$90 per ton for 325 mesh (Kendall, 2001). Quoted prices should be used only as a guideline because actual prices depend on the terms of the contract between the seller and the buyer.

Foreign Trade

Comprehensive foreign trade data were not available for wollastonite. However, imports probably declined from those of 2000 owing to the slow U.S. economy. Imports were estimated to be in the 4,000- to 6,000-metric-ton (t) range in 2001, with China, India, and Mexico being the major sources. Imports from China and Mexico probably were in the form of lower value wollastonite grades. A small amount of wollastonite also was imported from Finland. Exports were thought to be less than 3,000 t in 2001.

World Review

Worldwide production of wollastonite was estimated to be between 580,000 and 630,000 t in 2001. As with many industrial minerals, the structure of the wollastonite mining industry is such that it is difficult to accurately determine production. Production in China was estimated to be between 300,000 and 320,000 t. Lishu Wollastonite Mining Industry Co. was the largest producer in China, with 10 mines and plants in Liaoning Province. The company had a production capacity of 80,000 t/yr. Other major producers and their capacities were Xinyu South Wollastonite Industry Co. Ltd. (50,000 t/yr lump and 20,000 t/yr powder), Sanyi Mining Development Co. Ltd. (40,000 t/yr lump and 20,000 t/yr powder), Lianxian Wollastonite Mine (30,000 t/yr), Anhui Pioneer Mining Co. Ltd. (20,000 t/yr lump and 6,000 t/yr powder), Changxing Wollastonite Mine Co. Ltd. (25,000 t/yr total lump and ground), and Dayu Mineral Materials Co. Ltd. (20,000 t/yr total lump and ground). Exports from China were estimated to be 150,000 t/yr (Kendall, 2001).

In 2001, production for Finland, India, and Mexico was estimated to be 20,000 t (reported as 22,300 t in 1996), 100,000 t (reported as 95,700 t in 1998), and 30,000 t (reported as 30,800 t in 2000), respectively. Small tonnages probably also were produced in Morocco, Namibia (estimated to be 450 t in 2001 and reported as 441 t in 2000), North Korea, Pakistan, and Turkey (less than 5,000 t/yr). Chile, with a reported production of 270 t in 1996, and South Africa, with a reported production as 200 t in 1999, have not mined wollastonite since those times.

Following several attempts to produce wollastonite, Orleans Resources Inc. has awarded Les Services Environnementaux Delsan-A.I.M. the contract for dismantling the infrastructure of the Lac St.-Jean, Quebec, Canada, wollastonite operation, selling the equipment, and restoring the mine site. Orleans Resources will retain ownership of the 25-million-metric-ton (Mt) ore reserves (Orleans Resources Inc., 2001).

Bob Vasily & Associates Inc. continued with its plans to develop its Seeley's Bay, Ontario, Canada, wollastonite deposit. Reserves are estimated to be 9.6 Mt with the ore averaging 42% wollastonite. Resources are estimated to be 30 Mt. The company still needed to obtain the required permits for mining but hoped to begin stripping operations during 2002. A dry

processing circuit will be used to process the wollastonite on start-up, but the company has plans for the installation of a wet processing mill in the future. The company will initially sell to concrete and agricultural markets (North American Minerals News, 2001).

Outlook

The growth in world production and sales of wollastonite has moderated since 1996, averaging about 2.1% per year. This contrasts sharply with the 24% growth between 1970 to 1995 and even the 18% growth between 1990 and 1995. Slow growth probably will be the trend for the future because the wollastonite industry appears to be approaching mature industry status.

The slow recovery of the U.S. economy probably will continue to hamper sales in the United States, causing a stagnation or possibly a slight decline. Domestic demand for automobiles remains strong, so sales for friction and automotive plastics markets should remain at current levels. Growth in ceramics and paint markets probably will remain slow. The most promising market continues to be plastics, with sales anticipated to increase slowly in the coming years.

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