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COVER

Cover illustration by freelance artist Bonnie Wiebmer. MINING ENGINEERING's 1983 Annual Review begins on page 437.

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ment work has begun and core data indicated that the deposit contains about 50-60 Mt (55-66 million st) of sodium salts.

A synthetic soda ash plant in the Soviet Union was temporarily closed because of byproduct emission problems. This event started a chain reaction where some soda ash production from Comecon countries was diverted to the Soviet Union. This created a global supply imbalance that enabled the US to increase exports to countries previously supplied by Comecon sources. It is uncertain how long this situation will continue, possibly through 1984.

Some foreign soda ash producers took measures to improve their competitiveness against natural soda ash from the US. Rhone-Poulenc installed mechanical vapor recompression units at its La Madeleine site in France to reduce energy consumption. Akzo Zout Chemie, in the Netherlands, developed a "super heavy" soda ash that allegedly can reduce glass manufacturing costs.

On the domestic scene, the Soda Ash Export Trading Association was reorganized at year-end under the Webb-Pomerene Act. The new organization, known as the American Natural Soda Ash Corp. (ANSAC), is comprised of all six soda ash producers. ANSAC promotes export sales for the industry and attempts to strengthen the industry position in negotiations with foreign governments or private buyers.

The domestic price of soda ash remained at \$93/t (\$84 per st) throughout most of the year. In October, however, FMC Corp. initiated a \$15 temporary voluntary allowance (TVA) that lowered the f.o.b. price to \$76/t (\$69 per st). Other producers soon followed the FMC price move and the TVA held through year-end. ■

Sodium Sulfate

B. C. Anderson, Ozark-Mahoning

Estimated natural production of sodium sulfate in the US for 1983 should be about 426 kt (470,000 st), about the same as 1982. Consumption decreased drastically last year. Natural production for three years preceding 1982 were 552 kt (608,000 st) in 1981; 529 kt (583,000 st) in 1980; and 484 kt (533,121 st) in 1979. Figures for 1982 were not available to avoid disclosing company proprietary data.

In July, Morton Chemical Co. permanently closed its production facilities at Weeks Island, LA. The plant had a capacity of 108 kt (120,000 st) of salt cake and 163 kt (180,000 st) of hydrochloric acid.

Climax Chemical Co., in September, brought on-stream its Grantville, UT, plant. It has a rated capacity of 63.5 kt (70,000 st) of salt cake and 100 kt (110,000 st) of hydrochloric acid.

Prices remained stable in the high-grade markets last year, but declined severely in the pulp and paper markets. Many pulp and paper mills switched totally or partially from salt cake to caustic soda and emulsified sulfur. Caustic soda prices steadily declined in 1983. The economics and convenience of handling liquids were reasons for the switch. It is estimated that 136 to 159 kt (150,000 to 175,000 st) of salt cake was displaced annually. This situation is likely to prevail in 1984.

The detergent market for sodium sulfate has shown a growth pattern for 1984. This is a result of both reformulation change and continuing improved economic conditions. ■

Staurolite

W. B. Larson, DuPont

Staurolite, an iron-aluminum-silicate, low in free silica, is mined from heavy mineral beach sand deposits in north central Florida. Production from Du Pont's Starke mine and Associated Minerals Consolidated's Green Cove mine accounted for substantially all staurolite used during 1983 in the US.

Staurolite is used in a number of unrelated applications. In the early 1970s, it was promoted as an intermediate-quality foundry mold and core sand. Its relatively low softening point, however, generally restricted its use to non-ferrous casting applications.

At about the same time, staurolite was evaluated as an abrasive for "sand blasting." This use has become the major application for staurolite. Its natural hardness and high specific gravity combine to make it a tough, fast-cleaning, abrasive with much lower dusting than silica sand and many slag-type abrasives.

Minor quantities of staurolite continue to be used as a source of iron and aluminum for portland cement manufacture. ■

Strontium

J. E. Ferrell, US Bureau of Mines

The US strontium industry experienced a major shakeup during 1983. FMC Corp., the leading producer of strontium chemicals for many years, announced plans to terminate its strontium and barium business by closing its only strontium-barium plant at Modesto, CA, by mid-1984. The remaining major US strontium compounds producer, Chemical Products Corp., Cartersville, GA, plans to expand its strontium carbonate production capacity in 1984 to meet domestic demand.

Changes have also occurred in the world strontium marketplace. Japan surpassed the US as the leading consumer of strontium compounds. On a strontium carbonate equivalent basis, Japan consumed 31.6 kt (35,000 st) in 1982, compared with 20 kt (22,000 st) consumed by the US. In both countries, the major product growth area has been ferrite magnets for stereo equipment, loudspeakers, automobile windshield wiper motors, and home appliance motors. It was reported that there has been a substantial shift by Japanese stereo equipment makers to substitute barium carbonate ferrite magnets for higher-priced strontium types. On the other hand, US ferrite producers estimate that about 75% of domestic ferrite magnets use strontium carbonate while the remainder use barium carbonate.

The US and Japan do not mine celestite, the commercial strontium mineral form. The US has not mined celestite since 1959. Mexico supplies most of the US import demand, while Spain now meets most of the Japanese celestite import demand. In 1982, the Bureau of Mines reported that Spain produced 35 kt (38,600 st) of celestite compared with 32 kt (35,000 st) produced in Mexico. US celestite imports from Mexico in 1983 are estimated to be 37 kt (41,000 st). The UK, Turkey, and Algeria are other leading producers.

Estimated domestic consumption of strontium was 14.5 kt (16,000 st), valued at \$15.9 million. Uses of primary strontium compounds in 1982 were: glass manufacture for television picture tube faceplates, 62%; pyrotechnics and signals, 15%; ferrite permanent magnets, 7%; pigments and fillers, 4%; electrolytic production of zinc, 3%; and unidentified, 9%. ■

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