

structure at 25°C. Further, the gradational nature of the properties of the Arco de Oro phase and its similarity to galena rule out the possibility that it represents a discrete ternary phase stable only at low temperatures.

It is suggested, therefore, that the Arco de Oro phase should be regarded as a metastable solid solution which has been preserved for a considerable period owing to the sluggish reaction rates in the presently extremely arid environment of the Atacama Desert. The occurrence of this and similar compositionally intermediate phases in supergene sulfide ores in this region (*e.g.*, Clark and Sillitoe, 1970) should encourage caution in the interpretation of supergene mineral assemblages in terms of experimentally-derived phase equilibria.

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THE REMOVAL OF POTASSIUM SILICOFLUORIDE FORMED IN
THE DETERMINATION OF COESITE AND STISHOVITE¹

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In the search for coesite and stishovite in shocked samples from craters such as the Ries Kessel in Bavaria, analytical difficulties are en-

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countered because the rock contains potassium-bearing minerals, (microcline, mica, etc.) that, upon decomposition by hydrofluoric acid, yield potassium silicofluoride (K_2SiF_6). This compound occurs in nature as the rare mineral hieratite. It crystallizes in the isometric system, and has an index of refraction of 1.339, that is slightly higher than the index of water, 1.333.

Potassium silicofluoride is very slightly soluble in water; 100 parts of water at 17.5°C dissolve 0.12 part and at boiling temperature only 0.95 part (Mellor, 1925). This compound must be removed in order that coesite and stishovite, if present, be identified, and in the case of stishovite, quantitatively determined.

Samples of shocked rock from many craters were analyzed for coesite and stishovite in this laboratory. The potassium silicofluoride that formed was laboriously removed by as many as twenty treatments with dilute hydrochloric acid at steam bath temperature. This required approximately one month to accomplish for each sample.

The problem was belatedly solved when concentrated sulfuric acid was added, at room temperature, to potassium silicofluoride that had been dried on the steam bath. The reaction is as intense at that which occurs when finely ground calcite is treated with dilute hydrochloric acid. The gas, silicon tetrafluoride, is evolved and potassium sulfate is formed. In less than one minute the reaction is completed. After diluting with water, the coesite and stishovite, if present in the sample, can be filtered, washed, and weighed.

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A SLIDE HOLDER FOR THE MAKING OF POLISHED THIN SECTIONS IN VIBRATORY POLISHERS

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Increasing use of polished thin sections in light microscopy has prompted the development of a suitable micro-slide holder for use on commercially available vibratory polishing machines such as the Syntron. Although time per section is increased under this method, an overall saving will result because each machine can simultaneously polish up to three 3"×1" slides, thereby freeing the technician for other work.