

BOOK REVIEWS

BERRY (L. G.), Editor. *Selected powder diffraction data for minerals. Data book.* Swarthmore, Pennsylvania (Joint Committee on Powder Diffraction Standards), 1974. xlv+833 pp.

———. *Search manual.* Ibid., xiii+262 pp. Price (both volumes together) \$250.00 (to be ordered from the Joint Committee on Powder Diffraction Standards, 1601 Park Lane, Swarthmore, Pennsylvania 19801, U.S.A.); special terms available to academic institutions.

In the Data Book are reproduced some 2500 powder diffraction data cards, representing all the mineral species found in sets 1 to 23 of the Powder Diffraction File; it includes an index by mineral names. This book will be a permanent part of the mineral subfile and will be supplemented by additional volumes, at regular intervals, covering the new mineral data included in subsequent sets of the Powder Diffraction File.

The Search Manual provides for quick access to entries in the Data Book and contains an alphabetical mineral name index, an alphabetical KWIC chemical index, and a three-entry, eight-line numerical Hanawalt index. The alphabetical indexes contain formulae, the d -spacings of the three strongest lines, and the Powder Diffraction File number. In the numerical Hanawalt index spacings and intensities of the eight most intense lines of each mineral are given, but only the three strongest lines are permuted; the remaining five are listed by decreasing intensity. To minimize variations caused by experimental error in the measurement of d -spacing, both in the reference and unknown patterns, the entries are classified into groups, and overlap by an amount corresponding with reasonable maximum errors in routine diffraction work. To minimize variations resulting from errors in intensity, caused either by differences in technique or by preferred orientation, three entries are given for each reference pattern; these entries use three of the six possible combinations of the three most intense lines. The patterns were obtained either from natural minerals or their synthetic equivalent (always indicated); synthetic end-member compositions of solid solution series are also included, e.g. for pyrope and Tschermak's molecule. Patterns are not included for phases that occur only under special P - T conditions and are unquenchable, e.g. high-temperature quartz, or which have mineral-like names but are not yet known to occur in nature, e.g. keatite.

This collection of data thus should contain all the available patterns obtained by a user employing normal powder diffraction methods on a natural sample. It has been produced in co-operation with several societies, including the Mineralogical Society, and will be an invaluable asset to all mineralogy laboratories and to individuals and organizations engaged in X-ray powder diffraction work; the printing and layout are crisp and clear. Experimental petrologists may need to have available the wider compilation provided in the full Powder Diffraction File, but this separate listing of all available mineral data, omitting those for all the myriad other crystalline compounds, will be welcomed by mineralogists everywhere.

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