

NEW BOOKS

INFRARED BAND HANDBOOK, Supplements 1 & 2, H. A. Szymanski (Plenum Press, New York, N. Y., 259 p., 1964, \$15).

Like the original volume [see review, *JAOCS* 41, 32 (1964)], this handbook consists entirely of tables, 20 to a page. The main portion of the Supplements (228 pages) contains, like the original, a uniform presentation of infrared absorption band data, arranged in order of decreasing wavenumber. In the center of each of these tables a molecular structure is reproduced. In the upper left-hand corner, the frequency in cm^{-1} of the specific absorption band is given, followed by a code to indicate how the spectrum was obtained (i.e., as a liquid, vapor, solution, KBr disk, etc.). There is also a coded reference to the dispersive element used, if other than a NaCl prism. In the lower right-hand corner of each table, a reference is given to the original source of the data reproduced. The lower left-hand corner of the table is reserved for an indication of the structural group to which the vibration has been assigned. Unfortunately, this information, which could add considerably to the value of the Handbook, appears only in a very small number of the tables. There are no infrared spectra reproduced.

Several readers, familiar with the earlier volume, may find with disappointment that the supplements do not add to the rather insufficient number of compounds, approximately 1,000, included in the survey of the rock salt region, from 3610–621 cm^{-1} in the original volume. The Supplements extend these data into the KBr or far infrared region from 600–200 cm^{-1} (with some three or four dozen scattered absorptions beyond these limits, down to 41 cm^{-1}). There are no additional listings in the NaCl, 3610–621 cm^{-1} region.

The original volume includes only some 8500 absorptions from the NaCl region, only about 1,000 indexed compounds selected from at least 100,000 available in spectral collections and in the literature. Coverage of the KBr, or far infrared region, in Supplements 1 & 2 is relatively more representative. The 4500 to 4600 absorptions and some 1200–1400 indexed compounds represent, of course, a considerably greater portion of the available information in this 600–200 cm^{-1} region, in comparison to the relatively rather meager contribution of the original volume to the available NaCl spectra. We cannot completely agree with the publisher that when coupled with the *Infrared Band Handbook*, the Supplements form the single best ready-reference for rapidly identifying a compound from its infrared spectrum (there are too many compounds exhibiting identical or very similar absorption bands). We feel too that the aforementioned lack of indication in the great majority of the tables as to the structural group giving rise to the specific absorption band curtails opportunities to use the Handbook and Supplements either to relate an absorption band to the corresponding structure of the compound or to find new correlations of absorption bands with structures and compounds. We believe, however, that the infrared spectroscopist or the analytical chemist who is attempting to extend his measurements of infrared absorption into the far infrared with new accessories or the more versatile instruments will probably find Supplements 1 and 2 of relatively greater value than the original volume: first, because it represents a relatively greater coverage of the available information; and secondly, because information in these lower frequencies is not as readily available in other collections. Workers, still confining their measurements to the more commonly used NaCl region, will, undoubtedly, continue to await an expansion of the Handbook to a more representative coverage in this region.

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