

Letters to the Editor

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ABSORPTION SPECTRA OF *O*-, *M*-and *P*-HYDROXY-BENZALDEHYDES

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The near ultraviolet absorption spectra of ortho, meta and para hydroxy benzaldehydes have been studied in the vapour phase. Earlier workers (Morton and Stubbs, 1940) studied mainly the absorption spectra of their solutions in various solvents and reported band data for the vapour spectra also, but no vibrational analysis was made.

In the present work, two systems of bands have been observed in each of the ortho and meta isomers (only one system of bands was reported earlier (Morton and Stubbs, 1940) and one system in the para isomer, in the regions indicated below :

Ortho :—3630—3270A (System I)
 2670—2330 A (System II)
Meta :— 3125—2890A (System I)
 2500—2395A (System II)
Para :— 2915—2660A

The band data also have been extended and a systematic vibrational analysis has been made.

Ortho : In System I about fifty bands are measured. The 0, 0 band is chosen at 3537.6A (28260 cm^{-1}). The bands are interpreted on the basis of three (269, 426 and 558 cm^{-1}) ground state fundamentals and seven (263, 410, 523, 671, 937, 1013 and 1201 cm^{-1}) upper state fundamentals.

In System II about One hundred and thirty bands are measured (only thirty-three were reported earlier) . The 0, 0 band is chosen at 2524.6A (39598 cm^{-1}).

The bands are interpreted on the basis of seven (263, 437, 562, 776, 1032, 1232 and 1689 cm^{-1}) ground state fundamentals and eight (245, 440, 518, 763, 943, 1161, 1198 and 1503 cm^{-1}) upper state fundamentals.

Meta : In System I about twenty-five bands are measured. The 0,0 band is chosen at 3092A (32332 cm^{-1}). The bands are interpreted on the basis of one (249 cm^{-1}) ground state fundamental and three (189, 392 and 947 cm^{-1}) upper state fundamentals.

In System II about thirty bands are measured (only nine were reported earlier). The 0,0 band is chosen at 2478Å (40343 cm^{-1}). The bands are interpreted on the basis of one (243 cm^{-1}) ground state fundamental and six (213, 428, 494, 628, 814 and 967 cm^{-1}) upper state fundamentals

Para : In this case only one system was found. About thirty bands are measured (only eleven were reported earlier). The 0,0 band is chosen at 2836A (35251 cm^{-1}). The bands are interpreted on the basis of three (394, 635 and 861 cm^{-1}) ground state fundamentals and eight (174, 326, 529, 787, 996, 1142, 1181 and 1267 cm^{-1}) upper state fundamentals.

The upper state and lower state fundamentals observed in the three isomers have been correlated with the Raman data reported by Kohlrausch (1938).

Details will be published shortly

REFERENCES

- Kohlrausch, K. W. F., 1938, *Zests. Physik. Chem.*, **38**, 119
Morton, R. A. and Stubbs, A. L. 1940, *J. Chem. Soc.*, 1347.