

Letters to the Editor

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9

THE NEAR ULTRAVIOLET ABSORPTION SPECTRA OF THE THREE ISOMERIC METHYL PHENETOLES

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(Received, May 2, 1960)

The near ultraviolet absorption spectra of ortho-, meta-, and para-methyl phenetoles were investigated in the vapour, liquid and solid phases

Ortho-methyl phenetole

In absorption in vapour about 20 bands were measured and the intense band at 2751 \AA (36332 cm^{-1}) was taken as the (0, 0) band. The spectrum could be interpreted on the basis of four fundamental frequencies in the upper state (534, 734, 956 and 1275 cm^{-1}) and one fundamental in the ground state (428 cm^{-1}).

In absorption in solid state three bands were obtained and the intense band at 2787 \AA (35870 cm^{-1}) was taken as the (0, 0) band. The spectrum could be interpreted on the basis of two upper state fundamentals (830 and 1952 cm^{-1})

Meta-methyl phenetole.

In absorption spectrum of vapour about 23 bands were measured and the intense band at 2775.7 \AA (36016 cm^{-1}) was taken as the (0, 0) band. The spectrum could be interpreted on the basis of five fundamental frequencies in the upper state (683, 741, 912, 1102 and 1279 cm^{-1}).

In absorption in liquid state three bands were obtained and the intense band at 2807 \AA (35615 cm^{-1}) was taken as the (0, 0) band. The spectrum could be interpreted on the basis of one upper state fundamental 897 cm^{-1} .

In absorption in solid state three bands were obtained and the intense band at 2805 \AA (35640 cm^{-1}) was taken as the (0, 0) band. The spectrum could be interpreted on the basis of one upper state fundamental 886 cm^{-1} .

Para-methyl phenetole

In absorption spectrum of the vapour about 35 bands were measured and the intense band at 2826.9 Å (35364 cm⁻¹) was taken as the (0, 0) band. The spectrum could be interpreted on the basis of six fundamental frequencies in the upper state (563, 635, 801, 989, 1120 and 1263 cm⁻¹) and one fundamental in the ground state (235 cm⁻¹).

In absorption in liquid state two bands were obtained and the intense band at 2873 Å (34797 cm⁻¹) was taken, as the (0, 0) band. The other band was interpreted as the upper state fundamental 830 cm⁻¹.

In absorption spectrum of the solid eleven bands were obtained and the intense band at 2880 Å (34712 cm⁻¹) was taken as the (0, 0) band. The spectrum was interpreted on the basis of three upper state fundamentals (452, 814 and 1197 cm⁻¹).

The details will be published shortly

10

STRUCTURE OF NAPHTHAZARIN, C₁₀H₄O₂(CH)₂

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(Received, April 18, 1960)

Naphthazarin exists in three different modifications. The results of X-ray study on all these different forms have been summed up by Borgen (1956) and by Golder and Zhdanov (1958). A preliminary X-ray investigation on modification II, in the notations of Borgen, was made by Srivastava (1958) and later by Billy (1958) also. Billy has given the rough atomic positions which she estimated from three dimensional Patterson's synthesis and the projections obtained with the help of von Eller's photosummator.

In the present communication the molecular structure of naphthazarin has been determined by means of two-dimensional F_0 -synthesis along [010]. The crystallographic data are :

$$a = 7.90 \text{ \AA}, \quad b = 7.30 \text{ \AA}, \quad c = 16.91 \text{ \AA} \quad \text{and} \quad \beta = 124^\circ 38'$$

The crystal belongs to space group No. $14P_{21/c} - (C_{2h}^6)_{2h}$ and contains four molecules in a unit cell.

The molecular orientation was known from the study of magnetic anisotropies in the crystal by Banerji (1938). He further suggests that the intersections of the four molecular planes with (010) cannot all be along the same direction,