DETERMINATION OF THE STRUCTURE OF THE NEON METHYLENE CYCLOBUTANE COMPLEX

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The pure rotational spectrum was measured and assigned for the normal and the ^{22}Ne isotopomers of the weakly bound complex, neon methylene cyclobutane. The rotational constants for the all ^{12}C isotopomer of neon methylene cyclobutane, Ne C_5H_8, are A = 3522.991(4), B = 2069.181(2), and C = 1653.733(1) MHz. The structure of Ne C_5H_8 has been determined, and the coordinates of the neon in the C_5H_8 principal axis systems are a = 0.272, b = 0.630, and c = 3.480 Å. The position of the neon atom is shifted 0.63 Åfrom the plane of symmetry of methylene cyclobutane due to the large amplitude motion of neon across the ring.