

## 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  $^{22}\text{Ne}$  isotopomers of the weakly bound complex, neon methylene cyclobutane. The rotational constants for the all  $^{12}\text{C}$  isotopomer of neon methylene cyclobutane,  $\text{Ne C}_5\text{H}_8$ , are  $A = 3522.991(4)$ ,  $B = 2069.181(2)$ , and  $C = 1653.733(1)$  MHz. The structure of  $\text{Ne C}_5\text{H}_8$  has been determined, and the coordinates of the neon in the  $\text{C}_5\text{H}_8$  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 Å from the plane of symmetry of methylene cyclobutane due to the large amplitude motion of neon across the ring.