

410
MW $\text{C}_3\text{H}_6\text{S}_2$

1,3-Dithiolane

 C_{2v}
(effective symmetry class)

The ground and first pseudorotation excited states have rotational lines of similar intensity for which the effects of *a*- and *c*-type Coriolis coupling interactions have been observed in the high-*J* spectra. From the analysis of these rotation-vibration interaction effects, the vibrational energy spacing between these states has been determined to be 185.4522(11) GHz. The most obvious interpretation of this doubling is that there exists a small barrier to pseudorotation through which the molecule interconverts between equivalent ring conformations. Symmetry arguments based on the existence *a*- and *c*-type angular momentum operators connecting the coupled vibrational states allow us to conclude that this small barrier occurs at the C_2 twisted configuration and that each of the observed vibrational state consists of a pair of nearly degenerate pseudorotation states due to the existence of highest barriers hindering pseudorotation at the C_s bent ring configurations.

López, J.C., Blanco, S., Lesarri, A., Alonso, J.L., Laane, J., Villareal, J.R.: 16th Coll. High Res. Mol. Spectrosc., Dijon, France (1999) L10.