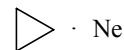
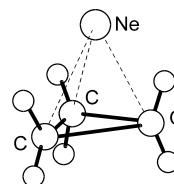


402
MW $\text{C}_3\text{H}_6\text{Ne}$ **Cyclopropane – neon (1/1)**
(weakly bound complex) C_{3v}
(effective symmetry class)
(large-amplitude motion)

Isotopic species	$r_0(R_{\text{cm}})$ [\AA] ^{a)}
$\text{C}_3\text{H}_6 \cdot ^{20}\text{Ne}$	3.67258(300)
$\text{C}_3\text{H}_6 \cdot ^{22}\text{Ne}$	3.66886(300)
$\text{C}_3\text{H}_5\text{D} \cdot ^{20}\text{Ne}$ ^{b)}	3.66144(300)
$\text{C}_3\text{H}_5\text{D} \cdot ^{22}\text{Ne}$ ^{b)}	3.65770(300)
$\text{DC}_3\text{H}_5 \cdot ^{20}\text{Ne}$ ^{c)}	3.66598(300)
$\text{DC}_3\text{H}_5 \cdot ^{22}\text{Ne}$ ^{c)}	3.66225(300)
$^{13}\text{CC}_2\text{H}_6 \cdot ^{20}\text{Ne}$	3.67075(300)



The observed spectra are in accord with those of prolate symmetric top molecules, where Ne is positioned on the C_3 axis of the cyclopropane subunit above its symmetry plane. The observed centrifugal distortion constants indicate that the complex is comparatively rigid in the radial coordinate. Transitions of two isomers were observed for complexes that contain monodeuterated cyclopropane. The intensities of transitions of the D-bonded species were considerably higher than those of the H-bonded isomers indicating that the angular motion of Ne is much less restricted. All transitions of ^{22}Ne and ^{13}C -isotopomers appeared as doublets by a tunnelling motion of the cyclopropane unit within the complex.

^{a)} Uncertainties were not estimated in the original paper.

^{b)} D-bonded complex.

^{c)} H-bonded complex.

Xu, Y., Jäger, W.: J. Chem. Phys. **106** (1997) 7968.