

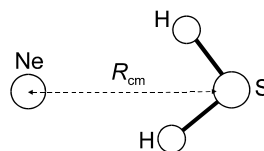
253  
MW

 $\text{H}_2\text{NeS}$ 

 Hydrogen sulfide – neon (1/1)  
(weakly bound complex)

 $\text{C}_s$   
(effective symmetry class)  
(large-amplitude motion)  
 $\text{H}_2\text{S} \cdot \text{Ne}$ 

Isotopic species	$r_0(R_{\text{cm}})$ [ $\text{\AA}$ ] <sup>a)</sup>
$^{20}\text{Ne} \cdot \text{H}_2^{32}\text{S}$ ( $I_{\text{H}}=0$ )	3.959(5)
$^{20}\text{Ne} \cdot \text{H}_2^{32}\text{S}$ ( $I_{\text{H}}=1$ )	4.046(5)
$^{20}\text{Ne} \cdot \text{D}_2^{32}\text{S}$ ( $I_{\text{D}}=0,2$ )	3.923(5)



Two progressions were observed for each of the symmetric isotopomers (with  $\text{H}_2\text{S}$  or  $\text{D}_2\text{S}$ ). This doubling is attributed to an internal rotation motion of the  $\text{H}_2\text{S}$  subunit within the complex. For  $^{20}\text{Ne} \cdot \text{H}_2^{32}\text{S}$ , the wavenumber of the intermolecular stretching motion and the force constant are  $18.4 \text{ cm}^{-1}$  and  $0.252 \text{ N m}^{-1}$  for  $I_{\text{H}}=0$  and  $27.6 \text{ cm}^{-1}$  and  $0.566 \text{ N m}^{-1}$  for  $I_{\text{H}}=1$ , respectively.

<sup>a)</sup> Uncertainties were not estimated in the original paper.

Liu, Y., Jäger, W.: Mol. Phys. **100** (2002) 611.