

## FOURIER TRANSFORM INFRARED EMISSION SPECTROSCOPY OF SeH

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The infrared vibration-rotation bands of SeH have been measured in the  $X^2\Pi$  ground state using a Fourier transform spectrometer. The bands were observed in a microwave discharge of a mixture of  $H_2$  and Se in the presence of He. The rotational structure of the 1-0, 2-1, 3-2 bands of the  $X^2\Pi_{3/2}$  spin component and the 1-0 band of  $X^2\Pi_{1/2}$  spin component has been observed in the 1800-2600  $cm^{-1}$  region. The spectroscopic constants for the ground state of SeH have been determined from a fit where the spin orbit coupling constant  $A_0$  was fixed to the value obtained from the analysis of the infrared laser magnetic resonance data [Ashworth & Brown, *J. Chem. Soc. Faraday Trans. II* **86**, 1995 (1990)]. The principal ground state molecular constants obtained are:

$$\begin{aligned} \omega_e &= 2421.73029(595) \text{ cm}^{-1}, & \omega_e x_e &= 44.61684(278) \text{ cm}^{-1}, & \omega_e y_e &= 0.20979(57) \text{ cm}^{-1}, \\ B_e &= 7.898953(683) \text{ cm}^{-1}, & \alpha_e &= 0.220694(382) \text{ cm}^{-1} & \text{and} & r_e = 1.464341(63) \text{ \AA}. \end{aligned}$$

This work is the first determination of the equilibrium molecular constants of the  $X^2\Pi$  state of SeH.