MILLIMETER-WAVE SPECTRUM OF SILENE: H_2CSiH_2

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Silene has been produced in the gas phase by vacuum flash pyrolysis of 5,6-bis(trifluoromethyl)-2-silabicyclo[2.2.2]octa-5,7-diene (SBO) at 600°C[a]. Its rotational spectrum corresponding to a slightly asymmetric top was observed in a liquid nitrogen cooled cell when argon was used as carrier gas.
The assignment of H_2CSiH_2 lines has been made by comparing experimental molecular constants with ab initio predicted values from Breidung and Thiel[b]. The observation of several lines belonging to the ^{2}9Si isotopic species in natural abundance confirmed unambiguously this identification.
This work led to the first high resolution spectroscopic results for silene. Study of different isotopomers is in progress and will give an experimental structure of this compound.

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[a]G. Maier, G. Mihm, H. P. Reisenauer, Chem. Ber. 117, 2351 (1984)

[b]S. Bailleux, M. Bogey, J. Breidung, H. Bürger, R. Fajgar, Y. Liu, J. Pola, M. Senzlober and W. Thiel, J. Am. Chem. Soc., submitted (1996)