

THE STRUCTURAL DETERMINATION AND COMPARISON OF 1-ETHYLSILACYCLOPENTANE AND 1-ETHYL-1-FLUROSILACYCLOPENTANE

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The rotational spectrum of 1-ethylsilacyclopentane (IESCP) and 1-ethyl-1-fluorosilacyclopentane (1E1FSCP) were collected and assigned in the 5.0 - 19.0 GHz region of the electromagnetic spectrum. In collaboration with Dr. Gamil Guirgis of the College of Charleston, the title molecules were synthesized in Charleston, SC and rotational spectra were recorded on a chirped-pulse Fourier transform microwave (CP-FTMW) spectrometer at the Missouri

University of Science and Technology in Rolla, MO. The substitution of a fluorine atom in place of the hydrogen on the silicon atom inside the five member ring has an influence on the types of transitions being observed. Differences in the two structures and their comparisons to theoretical calculations will be discussed.

