ROTATIONAL SPECTROSCOPY OF TWO TELLUROL COMPOUNDS : ETHYL AND VINYL-TELLUROL

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Among the compounds containing a chalcogen, the tellurols (R-TeH) have been poorly investigated previously. Only H_2Te was studied in rotational spectroscopy[a]. This fact can be explained by high toxicity and high chemical reactivity of these compounds. However quite recently, a new method allowing easily obtention of pure samples has been reported[b]. Thanks to this approach, very high acidity of these tellurols in gas phase has been measured[c] and photoelectron spectra have been recorded[d]. It should be noted that, even if simple derivatives are known since a long time[e], no microwave spectrum of these compounds has been recorded previously. The determination of their rotational constants is however a determining step to have a quite complete knowledge of such systems and to be able to perform comparisons of their physicochemical properties with those of the corresponding thiols and selenols which have been more extensively studied.

The rotational spectra of vinyl and ethyl-tellurol have been recorded in the frequency range up to 210 GHz. For both compounds *gauche* forms have been assigned due to rather distinguishable patterns of a-type transitions. The assignments were confirmed by comparison with the results of ab initio calculations. For ethyl-tellurol the rotational transitions were observed as doublets. The splittings are probably caused by tunneling effect between two equivalent configurations ($gauche^+$, $gauche^-$). The assignment and analysis of the rotational spectra of both molecules is in progress. The latest results will be reported.

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