

## CONFORMATIONAL ANALYSIS OF MUSTARD GAS HYDROLYSIS PRODUCTS

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In an effort to use Fourier transform microwave spectroscopy as a detection technique for chemical compounds related to chemical weapons (CW) technology, we have investigated the rotational spectra of ethyl sulfide, thiodiglycol and the intermediate compound 2hydroxyethyl ethyl sulfide. In addition to their importance in CW analysis, they present interesting spectroscopic problems since we have identified three, three, and two conformational isomers, respectively for the above compounds in the gas phase. Details of the rotational analysis using a new interactive assignment program will be given. In addition, a comparison will be made between the observed and *ab initio*calculated conformational structures.