

SYNTHESIS AND SPECTROSCOPIC CHARACTERIZATION OF INTERSTELLAR CANDIDATE ALKYNYL THIOCYANATE: HCCSCN.

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Thiocyanates (RSCN) are not only important for their implication in functional materials and pharmaceutical chemistry, but also as potential candidates to be present in the interstellar medium (ISM). In fact, thiocyanic acid (HSCN)^{a b} and its isomer isothiocyanic acid (HNCS)^c have already been detected. It is a logical step to keep studying more complex molecules of the same family, also to shed light on the sulphur chemistry in the ISM. Microwave and millimetre-wave spectroscopy are the ultimate tools that enable the detection of molecular systems in the ISM. Here we present a challenging laboratory characterization of the simplest alkynyl thiocyanate HCCSCN in the microwave and millimetre-wave ranges. Results of this work will allow to search for HCCSCN in different regions of the ISM.

^aBrunken, S. et al. (2009) 'LABORATORY DETECTION OF THIOCYANIC ACID HSCN', *The Astrophysical Journal*. IOP Publishing, 706(2), p. 1588. doi: 10.1088/0004-637X/706/2/1588.

^bHalfen, D. T. et al. (2009) 'DETECTION OF A NEW INTERSTELLAR MOLECULE: THIOCYANIC ACID HSCN', *The Astrophysical Journal*. IOP Publishing, 702(2), p. L124. doi: 10.1088/0004-637X/702/2/L124.

^cFrerking, M. A., Linke, R. A. and Thaddeus, P. (1979) 'Interstellar isothiocyanic acid'. *United States*, 234:2. doi: 10.1086/183126.