

IR and Raman spectra (atoms and molecules)

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IR Spectra and Structures of Isotopically Enriched S3 and S4 in Solid Argon. — Sulfur vapor is decomposed by microwave discharge and thermal methods and condensed with excess argon at 12 K. Strong IR bands observed at 680.0, 676.2, 661.6, and 642.4 cm⁻¹ are assigned to S3 and S4. Sample annealing produces a strong S2 chemiluminescence and a sharp new 674.5 cm⁻¹ band. The 674.5 cm⁻¹ feature reveals a 1/2/1/1/2/1 sextet that confirms the open (C2v) form of thiozone. The IR data indicate the presence of two different open-chain structural isomers of S4. — (BRABSON, G. D.; MIELKE, Z.; ANDREWS, L.; J. Phys. Chem. 95 (1991) 1, 79-86; Chem. Dep., Univ. Va., Charlottesville, VA 22901, USA; EN)