GINS-AP-71-0666

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## Pressure-Induced Polymerization and Decomposition of Carbon Subsulfide

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Received January 15, 1971

At pressures of about 45 kbars and temperatures in the range 165-235° or at 27 kbars and 220-280°, carbon disulfide slowly transforms into a black polymer (CS2)x which gives a broad, diffuse X-ray diffraction pattern. 1,2 The infrared spectrum of the black solid is consistent with the presence of the repeating unit



A black polymeric solid is also slowly formed by carbon subsulfide at atmospheric pressure and room temperature.3 This has the stoichiometry (C3S2)x, and an infrared investigation<sup>4</sup> has shown the presence of  $\nu(C=C)$ bands at almost the same frequencies as in the carbon suboxide polymer  $(C_3O_2)_x$ . Bands due to  $\nu(C=S)$  and  $\nu$ (C—S) are also reported to be present. Since we had available considerable quantities of liquid carbon subsulfide from our study of its use as a ligand for transition metals,5 it appeared to be of interest to examine the effect of pressure on its polymerization and decomposition.

## Experimental Section

Infrared spectra were measured with a Perkin-Elmer Model

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<sup>(3)</sup> B. V. Lengyel, Ber., 26, 2960 (1893).

<sup>(4)</sup> A. O. Diallo and J. H. Dixmier, C. R. Acad. Sci., Ser. C, 263, 375

<sup>(5)</sup> A. P. Ginsberg and W. E. Silverthorn, Chem. Commun., 823 (1969).