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## Synthesis, Characterization and Decomposition Studies of Tris(n, N-Dibenzylthiocarbamato) Indium(iii): Chemical Spray Deposition of Polycrystalline

By David G. Hehemann

Bibliogov. Paperback. Book Condition: New. This item is printed on demand. Paperback. 24 pages. Dimensions: 9.7in. x 7.4in. x 0.1in. Tris(bis(phenylmethyl)carbamodithioato-S, S), commonly referred to as tris(N, Ndibenzylthiocarbamato) indium(III),  $\text{In}(\text{S}2\text{CNBz}2)_3$ , was synthesized and characterized by single crystal X-ray crystallography. The compound crystallizes in the triclinic space group P1 bar with two molecules per unit cell. The material was further characterized using a novel analytical system employing the combined powers of thermogravimetric analysis, gas chromatographymass spectrometry and Fourier-Transform infrared spectroscopy to investigate its potential use as a precursor for the chemical vapor deposition (CVD) of thin film materials for photovoltaic applications. Upon heating, the material thermally decomposes to release  $\text{CS}_2$  and benzyl moieties in to the gas phase, resulting in bulk  $\text{In}_2\text{S}_3$ . Preliminary spray CVD experiments indicate that  $\text{In}(\text{S}2\text{CNBz}2)_3$  decomposed on a Cu substrate reacts to produce stoichiometric  $\text{CuInS}_2$  films. This item ships from La Vergne, TN. Paperback.



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