

Synthese und Charakterisierung des Fulleren-Kokristallisats



Synthesis and Characterisation of the Fullerene Co-Crystal $\text{C}_{60} * \text{SiH}(\text{C}_6\text{H}_5)_3$

G. Waidmann, M. Jansen

Institut für Anorganische Chemie der Rheinischen Friedrich-Wilhelms-Universität Bonn,
Gerhard-Domagkstraße 1, D-53121 Bonn

Z. Naturforsch. **53 b**, 161–164 (1998); eingegangen am 14. November 1997

Fullerene C_{60} , Synthesis, Crystal Structure

A new fullerene co-crystal $\text{C}_{60} * \text{SiH}(\text{C}_6\text{H}_5)_3$ has been synthesized by crystallisation from a melt of $\text{SiH}(\text{C}_6\text{H}_5)_3$ and C_{60} in sealed duran tubes at 80°C . X-ray investigations led to triclinic symmetry, space group $\text{P}\bar{1}$, $a = 10.086(1)$, $b = 14.431(2)$, $c = 14.911(2)$ Å, $\alpha = 79.13(1)$, $\beta = 74.943(9)$, $\gamma = 88.33(1)^\circ$, $V = 2058.0(4)$ Å³, $Z = 2$. The crystal structure consists of isolated fullerene and silane molecules. At -80°C , C_{60} is still rotationally disordered. Temperature dependent Guinier powder diagrams do not show any phase transformation between 25 and -165°C . The compound is stable in air.

* Sonderdruckanforderungen an Prof. Dr. M. Jansen.