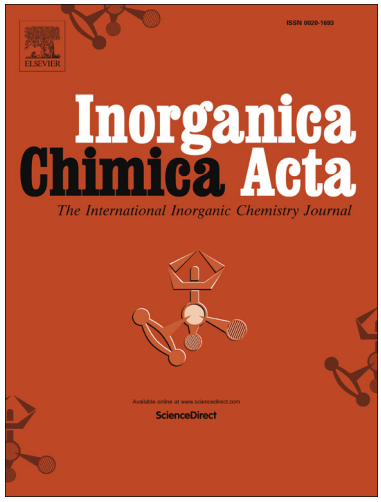

Research paper

Synthesis, Structure and Thermal Stability of a Crown Ether Complexed K/Cl Carbenoid

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Synthesis, Structure and Thermal Stability of a Crown Ether Complexed K/Cl Carbenoid

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Abstract

The crown ether adduct **1-K·(crown)** of a potassium chlorine carbenoid was synthesized, isolated and structurally characterized. X-ray diffraction analysis revealed a separated ion pair, in which two carbenoid molecules form a dimeric structure through coordination of one potassium atom, while the second potassium atom is solely coordinated by 18-crown-6. VT-NMR spectroscopic studies showed that the crown ether addition results in an increased stability and a higher decomposition temperature compared to the crown ether free system. This stabilization can be explained by the missing K–Cl interaction in the structure of **1-K·(crown),** which hampers the KCl elimination und thus its decomposition.

Keywords

Carbenoid – Potassium – Structure stability relationship – Structure elucidation – Carbanion

Graphical abstract