Dimeric Methylzinc Bis(2-pyridylmethyl)amide – Synthesis, Molecular Structure and Reaction with Dimethylzinc

Matthias Westerhausen, Alexander N. Kneifel, Ivonne Lindner, Jelena Grčić, and Heinrich Nöth

Department Chemie, Ludwig-Maximilians-Universität München, Butenandtstr. 9, D-81377 Munich, Germany

Reprint requests to Dr. M. Westerhausen. E-mail: maw@cup.uni-muenchen.de

Z. Naturforsch. **59b,** 161 – 166 (2004); received December 1, 2003

Dedicated to Professor Ingo-Peter Lorenz on the occasion of his 60th birthday

The zincation of bis(2-pyridylmethyl)amine with dimethylzinc yields dimeric methylzinc bis(2-pyridylmethyl)amide (**1**) with a central Zn_2N_2 cycle with Zn-N distances of 204.8(5) and 209.8(4) pm. The Zn-C bond length of 197.0(5) pm lies in the characteristic region. The addition of dimethylzinc to **1** leads to an opening of the Zn_2N_2 cycle and the formation of tetramethyltrizinc bis[bis(2-pyridylmethyl)amide] (**2**). The dimethylzinc molecule coordinates to a pyridyl and an amide group, the C-Zn-C bond angle of 135.3(3) being rather large. In solution, compound **2** loses methane at room temperature and the intramolecular metalation product tris(methylzinc) bis(2-pyridylmethyl)amide 1,3-di(2-pyridyl)-2-azapropane-1,2-diide (**3**) precipitates. The newly formed Zn-C bond is extremely long at 219.7(5) pm.

Key words: Metalation, Pyridyl Substituents, Vicinal Dianion, Zinc