

Carbene Adducts of Dimethylcadmium

Anthony J. Arduengo, III^a, Jens R. Goerlich^a, Fredric Davidson^b,
and William J. Marshall^b

^a Institut für Anorganische und Analytische Chemie, der Technischen Universität
Carolo-Wilhelmina, D-38106 Braunschweig, Germany

^b DuPont Science and Engineering Laboratory, Experimental Station,
Wilmington Delaware 19880, USA

Reprint requests to Prof. Dr. A. J. Arduengo

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The first examples of carbene-cadmium complexes are reported from the reactions of a variety of imidazol-2-ylidenes or imidazolin-2-ylidenes with dimethylcadmium. Four new carbene complexes are characterized by NMR spectroscopy (¹H, ¹³C and ¹¹³Cd). The cadmium centers are strongly shifted downfield (100 - 150 ppm) by interaction with the carbenes. X-ray structures are reported for three carbene-cadmium 1:1 adducts. The cadmium centers exhibit distorted trigonal-planar geometries in which the carbene ligands have an average 18.2 pm longer bond distance to cadmium compared to the methyl groups. The planes of cadmium coordination are twisted with respect to the plane of the imidazole ring. The more basic imidazolin-2-ylidene is shown to displace imidazol-2-ylidenes from the cadmium center.