

Intramolecular Carbene and Carbenoid Reactions of α -(Vinyl)silyl- α -diazoacetates

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Z. Naturforsch. **59b**, 1444 – 1450 (2004); received August 24, 2004

Dedicated to Professor Hubert Schmidbaur on the occasion of his 70th birthday

Thermolysis of α -[diisopropyl-1-(methylvinyl)oxysilyl]- α -diazoacetate **5a** at 160 °C yields mainly 2,5-dihydro-1,2-oxasilole-3-carboxylate **6a** and 3-[diisopropyl(methoxy)silyl]-2(5*H*)-furan-2-one **7**. From the thermolysis reaction of α -[diisopropyl-1-(phenylvinyl)oxysilyl]- α -diazoacetate **5b**, only 1-oxa-2-sila-3-cyclopentene-3-carboxylate **6b** could be isolated in low yield. UV-irradiation of **5a,b** generates **6a,b** as the main products. The Rh₂(C₃F₇COO)₄-catalyzed decomposition of **5a** provides primarily the ketene 2-[diisopropyl(methoxy)silyl]-pent-1-ene-1,4-dione (**9**) in high yield. After work-up, 3-[diisopropyl(methoxy)silyl]-2(3*H*)-furan-2-one **10a** and 2(5*H*)-furanone **7** are obtained in relative amounts that depend on work-up conditions. Mechanistic pathways leading to the various products are proposed.

Key words: Carbenes, Diazoacetates, Dihydro-1,2-oxasiloles, Rhodium-Catalyzed Carbenoid Reactions, Silaheterocycles