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Thermal and photochemical pathways of a 10-vertex Rhodium Metallaborane

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Abstract

The thermal and photochemical pathway of compound **1** [6-(η^5 -C₅Me₅)-*nido*-6-RhB₉H₁₃] is reported. Under thermal conditions, compound **1** was converted to [*hypercloso*-(η^5 -C₅Me₅)RhB₉H₉] (**2**) through the loss of two dihydrogen molecules in toluene. In contrast, under UV irradiation, compound **1** undergoes reactions in benzene to give the previously known compound [*nido*-5- η^5 -C₅Me₅)RhB₉H₁₃] (**3**). The *hypercloso* compound **2** is the first Rhodium containing *hypercloso*-metalladecaborane, while the photochemically induced isomerization is unprecedented. The compounds were identified using spectroscopic methods.

Keywords:

metallaborane, photochemistry, hypercloso, isomerization, Rhodium

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