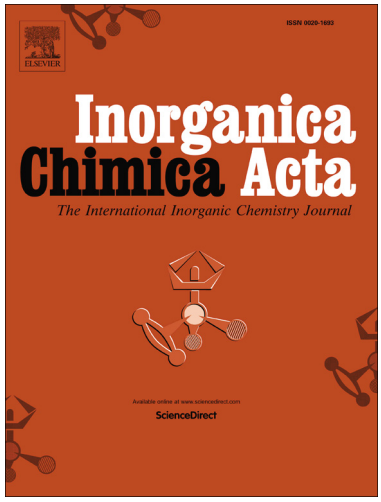

Research paper

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Pei Ma, Ralf Littger, James T. Spencer

PII: S0020-1693(18)30140-3
DOI: https://doi.org/10.1016/j.ica.2018.03.009
Reference: ICA 18154

To appear in: *Inorganica Chimica Acta*

Please cite this article as: P. Ma, R. Littger, J.T. Spencer, Thermal and photochemical pathways of a 10-vertex Rhodium Metallaborane, *Inorganica Chimica Acta* (2018), doi: https://doi.org/10.1016/j.ica.2018.03.009

Thermal and photochemical pathways of a 10-vertex Rhodium Metallaborane

Pei Ma[1], Ralf Littger, James T. Spencer*

Department of Chemistry and the Forensic and National Security Sciences Institute (FNSSI), 1-014 Centre for Science and Technology, Syracuse University, Syracuse, NY 13244, USA

Abstract

The thermal and photochemical pathway of compound **1** [6-(η^5-C_5Me_5)-*nido*-6-RhB_9H_{13}] is reported. Under thermal conditions, compound **1** was converted to [*hypercloso*-(η^5-C_5Me_5)RhB_9H_9] (**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-C_5Me_5)RhB_9H_{13}] (**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, isomization, Rhodium

*Corresponding author

Email address: jtspence@syr.edu (James T. Spencer)

[1]Current address: Foundation Medicine Inc, 150 Second St, Cambridge, MA 02141, USA