### Accepted Manuscript

Research paper

Thermal and photochemical pathways of a 10-vertex Rhodium Metallaborane

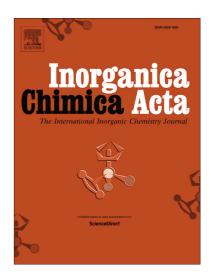
Pei Ma, Ralf Littger, James T. Spencer

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

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

## **ACCEPTED MANUSCRIPT**

## Thermal and photochemical pathways of a 10-vertex Rhodium Metallaborane

Pei Ma<sup>1</sup>, 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  $\underline{\mathbf{1}}$  [6- $(\eta^5$ -C<sub>5</sub>Me<sub>5</sub>)-nido-6-RhB<sub>9</sub>H<sub>13</sub>] is reported. Under thermal conditions, compound  $\underline{\mathbf{1}}$  was converted to [hypercloso- $(\eta^5$ -C<sub>5</sub>Me<sub>5</sub>)RhB<sub>9</sub>H<sub>9</sub>] ( $\underline{\mathbf{2}}$ ) through the loss of two dihydrogen molecules in toluene. In contrast, under UV irradiation, compound  $\underline{\mathbf{1}}$  undergoes reactions in benzene to give the previously known compound [nido-5- $\eta^5$ -C<sub>5</sub>Me<sub>5</sub>)RhB<sub>9</sub>H<sub>13</sub>] ( $\underline{\mathbf{3}}$ ). The hypercloso compound  $\underline{\mathbf{2}}$  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

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

<sup>\*</sup>Corresponding author

<sup>&</sup>lt;sup>1</sup>Current address: Foundation Medicine Inc, 150 Second St, Cambridge, MA 02141, USA

#### Download English Version:

# https://daneshyari.com/en/article/7750553

Download Persian Version:

https://daneshyari.com/article/7750553

<u>Daneshyari.com</u>