

## ADDITIONS AND CORRECTIONS

## Addendum to Structure and Reactivity of Early–Late Heterobimetallic Complexes

Philippe Kalck\*

Laboratoire de Catalyse, Chimie Fine et Polymères, Ecole Nationale Supérieure de Chimie de Toulouse, 118 route de Narbonne, 31077 Toulouse Cedex 4, France

Nigel Wheatley

Anorganisch-Chemisches Institut der Universität Zürich, Winterthurststrasse 190, 8057 Zürich, Switzerland

Robert G. Bergman

Department of Chemistry, University of California, Berkeley, California 94720-1460

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We wish to present a revision of part of the discussion on p 3414 of the cited review, concerning alkene hydrogenation reactions catalyzed by heterobimetallic tantalum/iridium complexes. The catalytic activity of  $\text{Cp}_2\text{Ta}(\mu\text{-CH}_2)_2\text{Ir}(\text{CO})(\text{Cl})$  for the hydrogenation of alkenes is reported correctly. As described by Butts and Bergman in ref 195 of the review, addition of the related complex  $\text{Cp}_2\text{Ta}(\mu\text{-CH}_2)_2\text{Ir}(\eta^5\text{-C}_5\text{Me}_5)(\text{H})$  to a solution containing  $\text{H}_2$  and ethylene also leads to hydrogenation. This reaction is poisoned by added trimethylphosphine. However, the mechanism proposed on p 3414, which<sup>Ⓜ</sup> was suggested by the authors of the review as an alternative way to explain this rate inhibition, is not correct. This mechanism can only account for the rate inhibition if a substantial concentration of a  $\text{PMe}_3$  adduct builds up and, in fact, completely transforms the starting hydride.

The authors of ref 195 state clearly that this does not occur. Therefore, the conclusion in the original paper, that a small amount of the [Ta–Ir] complex generates under the reaction conditions a small amount of an unidentified, phosphine-scavengable hydrogenation catalyst, is still viable.

We suggest that this is due to reaction of the starting complex with an unidentified impurity in the system. The reader is invited to consider that of the complexes discussed in the review, the only case in which an early metal is indispensable for the catalytic activity is the reaction catalyzed by  $\text{Cp}_2\text{Ta}(\mu\text{-CH}_2)_2\text{Ir}(\text{CO})(\text{Cl})$ . For the hydride, the catalytic cycle outlined in Scheme 5 of the review remains speculative, since it is not supported by the experiments described in ref 195, although a mixed [Ta–Ir] species could be suspected, since by crystallization  $\text{PMe}_3$  can be eliminated and the catalytic activity of the unknown species restored.

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