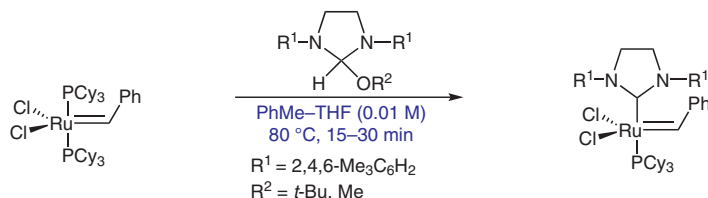


M. SCHOLL, S. DING, C. W. LEE, R. H. GRUBBS* (CALIFORNIA INSTITUTE OF TECHNOLOGY, USA)

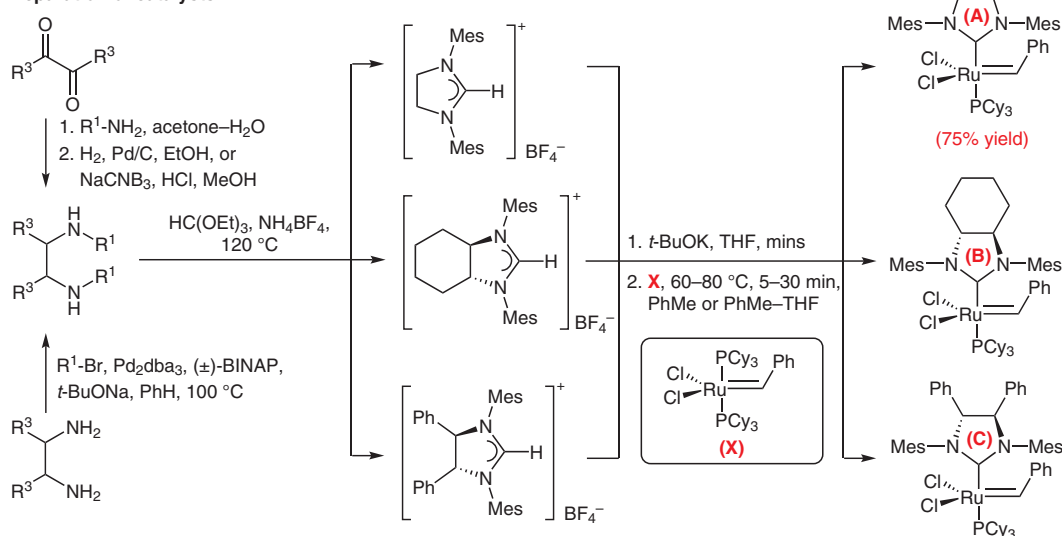
Synthesis and Activity of a New Generation of Ruthenium-Based Olefin Metathesis Catalysts Coordinated with 1,3-Dimesityl-4,5-dihydroimidazol-2-ylidene Ligands

Org. Lett. **1999**, *1*, 953–956.

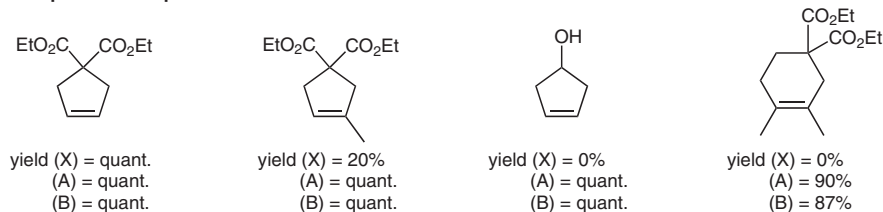
Grubbs Catalyst 2nd Generation: Synthesis and Activity of Ruthenium-Based Olefin Metathesis Catalysts



Preparation of catalysts:



Selected examples of RCM products:



Significance: Grubbs and co-workers reported a direct approach towards the preparation of the 4,5-dihydroimidazol-2-ylidene-substituted ruthenium-based catalysts. Compared to their predecessor, these 2nd generation catalysts display higher reactivity, better stability, and improved functional group tolerance.

Comment: Conveniently, these 2nd generation catalysts are air- and water-tolerant and can be handled without great loss in activity. Given the increased RCM activities observed with (A) and (B), the authors studied RCM at lower catalyst loadings and found 0.05 mol% to be an optimal lower limit in both cases.

Review: O. M. Ogba, N. C. Warner, D. J. O'Leary, R. H. Grubbs *Chem. Soc. Rev.* **2018**, *47*, 4510–4544.

SYNFACTS Contributors: Mark Lautens, Randy Sanichar
Synfacts 2020, 16(05), 0563 Published online: 20.04.2020
DOI: 10.1055/s-0040-1707550; Reg-No.: L04420SF

© 2020, Thieme. All rights reserved.
Georg Thieme Verlag KG, Rüdigerstraße 14, 70469 Stuttgart, Germany

Category

Metals in Synthesis

Key words

Grubbs catalysts
olefin metathesis
ruthenium catalysis
ring-closing
metathesis

Synfact
Classic

This document was downloaded for personal use only. Unauthorized distribution is strictly prohibited.