The Mizoroki-Heck Reaction
Martin Oestreich (Editor)

DESCRIPTION

Exploring the importance of Richard F. Heck’s carbon coupling reaction, this book highlights the subject of the 2010 Nobel Prize in Chemistry for palladium-catalyzed cross couplings in organic synthesis, and includes a foreword from Nobel Prize winner Richard F. Heck.

The Mizoroki-Heck reaction is a palladium-catalyzed carbon–carbon bond forming process which is widely used in organic and organometallic synthesis. It has seen increasing use in the past decade as chemists look for strategies enabling the controlled construction of complex carbon skeletons. The Mizoroki-Heck Reaction is the first dedicated volume on this important reaction, including topics on:

- mechanisms of the Mizoroki-Heck reaction
- intermolecular Mizoroki-Heck reactions
- focus on regioselectivity and product outcome in organic synthesis
- waste-minimized Mizoroki-Heck reactions
- intramolecular Mizoroki-Heck reactions
- formation of heterocycles
- chelation-controlled Mizoroki-Heck reactions
• the Mizoroki-Heck reaction in domino processes

• oxidative heck-type reactions (Fujiwara-Moritani reactions)

• Mizoroki-Heck reactions with metals other than palladium

• ligand design for intermolecular asymmetric Mizoroki-Heck reactions

• intramolecular enantioselective Mizoroki-Heck reactions

• desymmetrizing Mizoroki-Heck reactions

• applications in combinatorial and solid phase syntheses, and the development of modern solvent systems and reaction techniques

• the asymmetric intramolecular Mizoroki-Heck reaction in natural product total synthesis

Several chapters are devoted to asymmetric Heck reactions with particular focus on the construction of otherwise difficult-to-obtain sterically congested tertiary and quaternary carbons. Industrial and academic applications are highlighted in the final section. The Mizoroki-Heck Reaction will find a place on the bookshelves of any organic or organometallic chemist.

“I am convinced that this book will rapidly become the most important reference text for research chemists in academia and industry who seek orientation in the rapidly growing and – for the layman – confusing field described as the “Mizoroki–Heck reaction‘.” (Synthesis, March 2010)

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ABOUT THE AUTHOR

Martin Oestreich (born in 1971 in Pforzheim/Germany) is currently Professor of Organic Chemistry at the Technische Universität Berlin. He received his diploma degree with Paul Knochel (Marburg, 1996) and his doctoral degree with Dieter Hoppe (Münster, 1999). After a two-year postdoctoral stint with Larry E. Overman (Irvine, 1999-2001), he completed his habilitation with Reinhard Brückner (Freiburg, 2001-2005) and was appointed as Professor of Organic Chemistry at the Westfälische Wilhelms-Universität Münster (2006-2011). He also held visiting positions at Cardiff University in Wales (2005) and at The Australian National University in Canberra (2010).

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