

N-HETEROCYCLIC CARBENE METALLACYCLE CATALYSTS AND METHODS

Abstract

5 The present invention generally relates to materials and methods for catalytic reactions, including transition metal-catalyzed cross-coupling reactions. The materials may be stable metal complexes that do not require special handling or processing conditions. In some cases, materials of the invention advantageously may be synthesized in one synthetic step without the need for isolation of intermediate compounds. Also,
10 materials of the invention may be synthesized from inexpensive and readily available starting materials, under relatively mild reaction conditions that do not require the exclusion of air, water, and the like. In some embodiments, the material is a N-heterocyclic carbene metallacycle complex. Such materials and methods may be useful in the production of fine chemicals, advanced materials and specialty polymers.

15

FIGURE 1A