

Synthesis of phosphorylated piperazines

Khusainova N., Pogodina E., Berdnikov E., Galkina I., Galkin V.

Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

Heating 3-methyl-1,2-butadienyl phosphonates with piperazine leads to the formation of 2-piperazinyl-butenyl phosphonates containing the enamine functionality. From the reaction of piperazine with four equivalents of 1,2-butadienyl phosphonate a bis(phosphonate) is obtained, in which the piperazine bridge links two phosphorylbutene fragments. © 2013 Copyright Taylor and Francis Group, LLC.

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Keywords

3-methyl-buta-1,2-dienyl phosphonates, addition, Allenes, enamines, piperazine