

## $\beta$ -Nitroethenylphosphonates and -carboxylates in the reactions of diene synthesis

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### Abstract

For the first time a systematic study was carried out of the chemical behavior of  $\beta$ -nitroethenylphosphonates (-carboxylates) and its bromine-containing analogs with 1,3-cyclopentadiene. The reactivity of these compounds was investigated. The basic regularities of interaction between bromine-containing nitroalkenes and cyclopentadiene were revealed. The reaction mechanism of nitroalkenes with cyclopentadiene was studied. A series of new substituted carbocyclic compounds (norbornene) with nitro and phosphonate (carboxylate) functional groups is synthesized.