

# 1,10-diaza-18-crown-ether, modified by phosphonate pendant arms - Synthesis, structure, and picrate extraction properties

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## Abstract

Reaction of O,O'-diisopropyl-3-methyl-1,2-butadienylphosphonate with 1,10-diaza-18-crown-6 in the presence of a catalytic amount of iPrONa leads to the new crown-ether derivative, containing phosphonate pendant arms (L). The structure of the compound obtained was investigated by single crystal X-ray diffraction analysis, IR,  $^1\text{H}$  and  $^{31}\text{P}\{^1\text{H}\}$  NMR spectroscopy, and microanalysis. In the crystal structure the side arms of L are in an anti disposition relative to the macrocyclic cavity. It was established that phosphorylation of 1,10-diaza-18-crown-6 by allenylphosphonate results in an increase of extraction of NaPic and KPic, whereas LiPic and  $\text{NH}_4\text{Pic}$  are extracted practically in the same level. © 2008 Wiley-VCH Verlag GmbH & Co. KGaA.

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## Keywords

Allenylphosphonate, Crown-ether, Crystal structure, Macrocycles, Picrate extraction