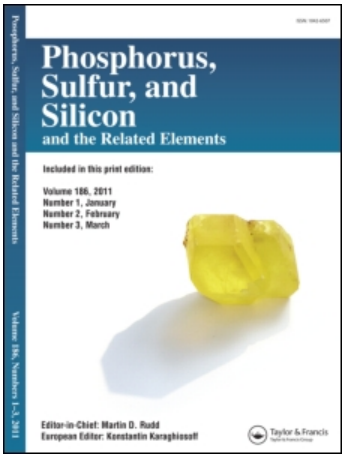


## Phosphorus, Sulfur, and Silicon and the Related Elements

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# Monomeric and Dimeric (Aminomethylidene)phosphines and -Arsines

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# Monomeric and Dimeric (Aminomethylidene)phosphines and -Arsines

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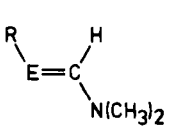
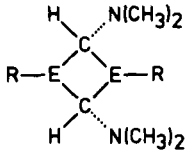
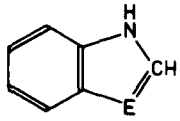
In (dimethylaminomethylidene)phosphines (1) [1] and -arsines (2) the internal



E= P 1; E= As 2



E= P 3; E= As 4



E= P 5; E= As 6

R= $C(CH_3)_3$ a; $CH_3$ b; $C_6H_5$ c

rotation of the dimethylamino group is hindered by a barrier of 50 to 55 $kJmol^{-1}$ - analogous to the corresponding amidines. In order to evaluate the influence of this conjugative effect upon the P=C and (P)-C-N bond lengths, single crystal x-ray structure determinations of 1a and 2a have been carried out. For comparison, the cyclic (aminomethylidene)phosphine 1H-1,3-benzazaphosphole 5 [2] as well as the dimeric compounds 3a, 3b, and 3c [3] have been analyzed, too, while the arsenic derivative 6 was studied by others [4]. The diarsetanes 4 could not yet be isolated. The structural results indicate the E=C bonds in 1a, 2a, 5, and 6 to be scarcely elongated, the (E)-C-N bonds, however, to be shortened considerably with respect to the dimers.

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