Proposed Nomenclature for Indexing Boron–Phosphorus Organic Compounds

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Received June 17, 1964

In the process of establishing an information retrieval system for chemical compounds, which will employ a manual-computer correlation indexing system, we have been using the following nomenclature for boron–phosphorus organic compounds:

1. Basic structures and radicals

BH_3, borane	$-BH_2$, boryl
PH_3, phosphine	$-PH_2$, phosphino
H_2P-BH_2, phosphinoborane	

and, in general

R_2P-BH_2, dialkylphosphinoborane

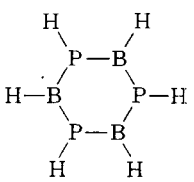
and the addition compound

$H_3P:BH_3$, borane–phosphine

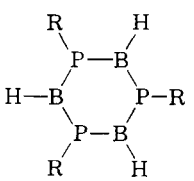
2. Linear addition compounds of the form $(H_2P-BH_2)_n$

$n = 2$	phosphinoborane dimer
$n = 3$	phosphinoborane trimer
$n \geqq 4$	phosphinoborane polymer

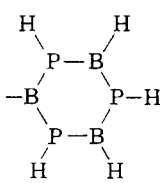
3. Cyclic compounds and radicals



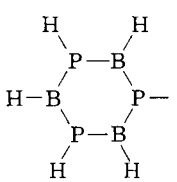
borophine



trialkylborophine

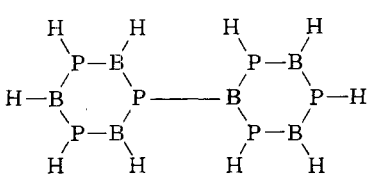


B-borophinyl

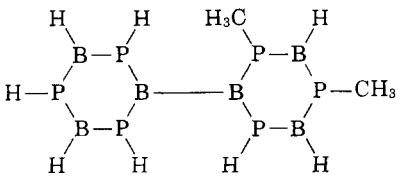


P-borophinyl

The compound

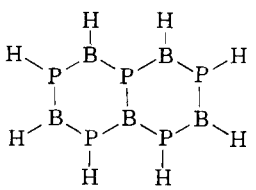


will be called biborophinyl. The prefixes BB- and PP- are used when the two borophinyls are connected through two boron atoms and two phosphorus atoms, respectively. Thus the compound

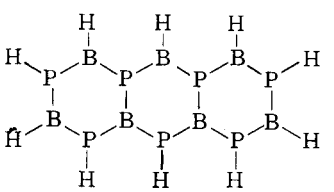


is named dimethyl-BB-biborophinyl.

For *ortho*-fused ring systems of the linear form the terms borophinoborophine (I), diborophinoborophine (II), etc. are used.



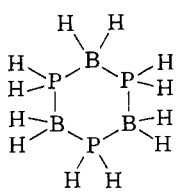
(I)



(II)

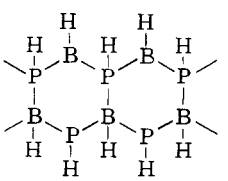
4. Cyclic addition compounds of the general form $(H_2P-BH_2)_n$

a. Cyclic addition compounds $(H_2P-BH_2)_3$ are called borophanes and the corresponding radicals, B- and P-borophanyl, respectively.



borophane

ortho-Fused ring systems of the linear form are named borophanoborophane, diborophanoborophane, and polyborophanoborophane.



b. Cyclic addition compounds of the form $(H_2P-BH_2)_n$ where $n \geqq 4$ are called phosphinoborane cyclopolymers.