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Title:

The Cocondensation Reaction of Difluorosilene with Diborane: New Polyfluoropolysilanes.

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Corporate Author:

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Burg, Anton B**Report Date:**

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Abstract:

The cocondensation reaction of SiF_2 with B_2H_6 at a -196°C surface gives a product which, by low-temperature evaporation in vacuo, yields nonvolatiles and diborane derivatives of the 1,1-fluorosilylated type, possibly of the heterocyclic class 1,1-(SiF_2)(n) B_2H_4 . These decompose very easily at low temperatures (possibly autocatalytically) to form nonvolatiles and polyfluoropolysilanes; such products also come from the original cocondensation reaction. They include the known compounds SiF_4 , HSiF_3 , $(\text{SiF}_3)_2\text{O}$, Si_2F_6 , HSi_2F_5 , and Si_3F_8 , and the new compounds H_3SiSiF_3 ,

H₂Si(SiF₃)₂, probably HSi(SiF₃)₃ and Si(SiF₃)₄ (neither very stable), a somewhat unstable H(SiF₂)₂SiF₃, and other volatiles which are more difficult to identify. (Author)

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