Pentafluoro[(4-methyl-1,4-bisazoniacyclohex-1-yl)methyl]germanate Hydrate: Synthesis and Crystal Structure of a Zwitterionic λ^6*Ge*-Germanate with a *Ge*F_5C Framework

Reinhold Tacke*, Joachim Heermann, Melanie Pülm

Institut für Anorganische Chemie, Universität Würzburg, Am Hubland, D-97074 Würzburg

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The zwitterionic (molecular) λ^6*Ge*-germanate pentafluoro[(4-methyl-1,4-bisazoniacyclohex-1-yl)methyl]germanate (**5**) was synthesized by reaction of 1-methyl-4-[(trimethoxygermyl)methyl]piperazine (**8**) with HF (molar ratio 1:5) in a mixture of water and ethanol at 0 °C and isolated as the hydrate **5** · H_2O. The zwitterion **5** is characterized by the presence of a hexacoordinate (formally twofold negatively charged) germanium atom and two tetracoordinate (formally positively charged) nitrogen atoms. Compound **5** · H_2O was structurally characterized by single-crystal X-ray diffraction. Crystal data are as follows: $C_6H_{17}F_5GeN_2O$, triclinic space group *P*1 (no. 2), *a* = 7.5228(11) Å, *b* = 12.174(2) Å, *c* = 12.3041(14) Å, α = 73.74(2)°, β = 82.44(2)°, γ = 74.762(10)°, *V* = 1041.7(2) Å^3, *T* = 173(2) K, *Z* = 4, *R*1 = 0.0227. There are one pair each of crystallographically independent zwitterions **5** and water molecules in the asymmetric unit, the structures of the zwitterions being very similar. Their coordination polyhedra around the germanium atoms are slightly distorted octahedra.

* Reprint requests to Prof. Dr. R. Tacke; E-mail: anor095@rzhub.uni-wuerzburg.de