Crystal and Molecular Structures of the Sulfurization and Selenation Products of Bis[bis(trimethylsilyl)amino]germanium(II). Crystal Structure of (Triphenylphosphine)gold(I) Bis(trimethylsilyl)amide

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Treatment of bis[bis(trimethylsilyl)amino]germanium(II) with elemental sulfur or selenium affords high yields of the corresponding monosulfide $[(Me_3Si)_2N]_2GeS$ and selenide $[(Me_3Si)_2N]_2GeSe$, respectively. The crystalline products have now been shown to be cyclic dimers with $(GeS/Se)_2$ four-membered rings by X-ray single crystal structure analysis. The crystal structure of (triphenylphosphine)gold(I) bis(trimethylsilyl)amide $(Ph_3P)Au\text{-}N(SiMe_3)_2$ has also been determined. The molecule is a monomer with a tricoordinate nitrogen atom in a planar configuration $[Si_2NAu]$. The compound does not undergo insertion of the bis[bis(trimethylsilyl)amino]germylene.