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 [(Me₃Si)₂N]₂GeS and selenide [(Me₃Si)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 (Ph₃P)Au-N(SiMe₃)₂ has also been determined. The molecule is a monomer with a tricoordinate nitrogen atom in a planar configuration [Si₂N=Au]. The compound does not undergo insertion of the bis[bis(trimethylsilyl)amino]germylene.