

(Triphenylarsine)gold(I) Complexes: Synthesis of an Oxonium Salt and Redistribution of the Arsine Ligands

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The reaction of $[(\text{Ph}_3\text{As})\text{AuCl}]$ with Ag_2O in the presence of NaBF_4 in tetrahydrofuran affords three products, identified as $[(\text{Ph}_3\text{As})_4\text{Au}]\text{BF}_4$ (40.3%), $[(\text{Ph}_3\text{As})_2\text{Au}]\text{BF}_4$ (16.4%) and $\{[(\text{Ph}_3\text{As})\text{Au}]_3\text{O}\}\text{BF}_4$ (17.3%). The properties of the main product agree well with recent literature data. The other two compounds are new and have been identified by their analytical, spectroscopic, and crystallographic data. The structures are isomorphous with those of the analogous Ph_3P complexes. Variations in the stabilities are discussed in terms of kinetic and thermodynamic effects.

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