

Preparation and Molecular Structure of 1,3-Diphenyltriazene Copper (I) Complex

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Abstract: 1,3-Diphenyltriazene (HDPT) reacts with NaH in THF and generates the sodium salt (NaDPT). Further reaction of $[\text{Cu}(\text{TMEDA})]_2[\text{CuCl}_2]$ with one equivalent of this ligand in THF leads to the formation of a dimeric Cu (I) complex, $[\text{Cu}(\text{DPT})]_2$. The molecular structure has been determined by using single-crystal X-ray diffraction method. The orange complex crystallizes in monoclinic space group $C2/c$ with four molecules per unit cell. The unit cell dimensions are $a=26.184(12)$, $b=5.564(2)$, and $c=15.695(5)$ Å with $\beta=116.51(3)^\circ$. The final R value is 0.054 for 2050 reflections measured. Coordination number around each copper is two (nearly linear). The Cu-Cu distance is $2.447(2)$ Å.