Reaktion von $[Co(Bu^t_2PH)_2I_2]$ mit $[Ru_3(CO)_{12}]$: Synthese und Röntgenkristallstrukturanalyse von $[Ru_3(CO)_6(\mu\text{-}H)(\mu\text{-}I)_2(\mu\text{-}PBu^t_2)(Bu^t_2PH)]$

Reaction of $[Co(Bu^t_2PH)_2I_2]$ with $[Ru_3(CO)_{12}]$: Synthesis and X-Ray Crystal Structure of $[Ru_3(CO)_6(\mu\text{-}H)(\mu\text{-}I)_2(\mu\text{-}PBu^t_2)(Bu^t_2PH)]$

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Cobalt, Ruthenium, Cluster, Phosphido-Bridged, Crystal Structure

$[Co(Bu^t_2PH)_2I_2]$ (**1**) reacts with $[Ru_3(CO)_{12}]$ in refluxing toluene to give a mixture of products including the novel metal clusters $[Ru_3(CO)_6(\mu\text{-}H)(\mu\text{-}I)_2(\mu\text{-}PBu^t_2)(Bu^t_2PH)]$ (**2**) and $[Ru_3(CO)_7(\mu\text{-}H)(\mu\text{-}I)(\mu\text{-}PBu^t_2)_2]$ (**3**) besides the known complex $[Ru_3(CO)_8(\mu\text{-}H)_2(\mu_3\text{-}PBu^t)(Bu^t_2PH)]$ (**4**). No cluster expansion products could be observed. Thus the cobalt compound acts merely as a phosphine and iodine transfer reagent. The molecular structures of the metal complexes **1** and **2** were determined by single-crystal X-ray structure analyses. **1** crystallizes in the tetragonal space group $P\bar{4}2_1c$ with a = 13.230(3), b = 13.230(3), c = 14.788(3)Å, V = 2588.4(9)Å^3. **2** crystallizes in the monoclinic space group $P2_1/c$ with a = 18.161(2), b = 10.292(2), c = 18.381(2)Å, β = 108.73(10)°, V = 3253.7(8)Å^3.

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