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**Figure 1.** The cis- and trans-isomers of Mo(CO)4[P(OPh)3]2.

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**Figure 2.** Symmetry tree used for point group determination.

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**Figure 3.** CO vibrational stretches in *cis*-Mo(CO)4[P(OPh)3]2.

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**Figure 4.** Synthesis of Mo(CO)4[P(OPh)3]2­.

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**Figure 5.** Hydroformylation by the metal carbonyl complex HCo(CO)3.