**Deca-Arylsamarocene: An Unusually Inert Sm(II) Sandwich Complex**

Niels J. C. van Velzen† and Sjoerd Harder

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**Reading Guide**

1. Read the **Introduction**. You should be able to
   1. identify the structure of Cp\*2Sm
   2. identify the structure of deca-aryl samarocenes
   3. appreciate the known reactivity of Cp\*2Sm
   4. describe some of the reasoning behind the inert properties of samarocene complexes with bulky ligands
2. Read the **Synthesis of Bulky Samarocene Complexes**. You should be able to
   1. differentiate between deca-aryl samarocenes and their notation
   2. note the deca-aryl samarocene syntheses presented in Scheme 2
   3. reason the issues behind the crystal stabilities of complexes **1** and **2**
3. Read **Attempted Reactions of 1 with N2, CO, CO2, *trans-*stilbene, styrene, ethylene and P4**.You should be able to
   1. contrast the reactivity of deca-aryl samarocenes and Cp\*2Sm
4. Read **Reaction of 1 with *aza*-Heterocycles, Reaction of 1 with Ketones,** and **Reaction of 1 and 2 with O2**. You should be able to
   1. contrast the reactivity of deca-aryl samarocenes and Cp\*2Sm
   2. identify which ketone(s) complex **1** reacts with
   3. identify which *aza-*heterocycle complex **1** reacts with, and under which conditions
5. Read **Crystal Structures of 3.** You should be able to
   1. extract information about the cuminil ligand
   2. describe the comparisons between complex **3** and a tungsten sandwich complex
6. Read **Crystal Structures of 4**. You should be able to
   1. extract information about the peroxo ligand
   2. extract information about the phenazine ligand
   3. keep in mind that crystal structures show nuclei, not bonds (Figure 3a)
7. Read the **Conclusions.** You should be able to
   1. note the comparative and contrastive relation between the structures and reactivities of deca-arylsamarocenes and Cp\*2Sm