

Synthesis and properties of chiral rhenium pentatetraenylidene complexes of the formula $[(\eta^5\text{-C}_5\text{Me}_5)\text{Re}(\text{NO})(\text{PPh}_3)(\text{C}=\text{C}=\text{C}=\text{C}=\text{C}\text{Ar}_2)]^+\text{BF}_4^-$ ($\text{C}\text{Ar}_2=9\text{-fluorenylidene}$).

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Streszczenie

The sequential reaction of $(\eta^5\text{-C}_5\text{Me}_5)\text{Re}(\text{NO})(\text{PPh}_3)(\text{C}_3\text{CC}_3\text{CH})$ with *n*-BuLi (one equivalent), 9-fluorenone ($\text{O}=\text{C}\text{Ar}_2$; 1.5 equivalents), and $\text{Me}_3\text{O}^+\text{BF}_4^-$ (3.0 equivalents) gives thermally labile $(\eta^5\text{-C}_5\text{Me}_5)\text{Re}(\text{NO})(\text{PPh}_3)(\text{C}_3\text{CC}_3\text{CC}(\text{OMe})\text{Ar}_2)$ (**2a**) as an orange-red powder in 69% yield. Analogous reactions with 2,7-dichloro- and 2,7-dibromofluorenone give the corresponding complexes **2b,c** (68–71%). Treatment of **2a–c** with $\text{BF}_3\cdot\text{OEt}_2$ (one equivalent) gave the title complexes (**3a–c**) as labile dark blue powders (79–83%) that exhibited diagnostic cumulenenic IR bands ν_{CCC} (1993–1987, 1902–1894 cm^{-1}) and $\text{Re}|\text{C}^{13}\text{C}$ -NMR signals (256.9 ppm, $J_{\text{CP}}=10.8$ Hz), and richly featured UV-vis spectra. Attempts to prepare stabile derivatives of **3a–c** (additions of phosphines, amines, TCNE; anion metatheses) invariably gave a multitude of products.

Słowa kluczowe

Rhenium, Cumulenes, atom, 3-Dibutadiynyl, Fluorenyl,
Pentatetraenylidene

Adres publiczny

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