Kristallstrukturen komplexer Metalate mit dem sterisch anspruchsvollen 1,3,5-Tri(*tert*-butyl)tropylium-Kation

X-Ray Crystal Structures of Complex Metallates Containing the Sterically Demanding 1,3,5-Tri(*tert*-butyl)tropylium Cation

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The X-ray crystal structures of anionic transition metal complexes containing the sterically demanding 1,3,5-tri-*tert*-butyltropylium cation, $[1,3,5\text{-}C_7H_4tBu_3]^+$, as the compensating ion are presented. Bis(1,3,5-tri-*tert*-butyltropylium) hexachlorodiferrate(II), $[1,3,5\text{-}C_7H_4tBu_3]_2[Fe_2Cl_6]$ (**4**), was obtained from the reaction of the 1,3,5-tri-*tert*-butyltropylium hydrogendichloride, $[1,3,5\text{-}C_7H_4tBu_3][HCl_2]$ (**3**), with $FeCl_2$, whereas the 1,3,5-tri-*tert*-butyltropylium tetrabromooxomolybdate(V) $[1,3,5\text{-}C_7H_4tBu_3][trans\text{-}Mo(O)Br_4(CH_3CN)]$ (**7**) was isolated from the reaction of the cycloheptatrienyl complex $[(\eta^7\text{-}1,3,5\text{-}C_7H_4tBu_3)Mo(CO)_2Br]$ (**6**) with elemental bromine. The crystal structures of **3**, **4**, **7** and **7** · CH_3CN show in each case well separated anions and cations and the absence of any covalent anion-cation interactions. However, close inspection of the crystal packing reveals that the 1,3,5-tri-*tert*-butyltropylium cation can act as a CH-proton donor towards the counter-ion leading to the formation of weak C-H···Cl-M and C-H···O=M hydrogen bonds in **4** and in **7** and **7** · CH_3CN, respectively.

Key words: Tropylium Cation, Cycloheptatrienyl Complexes, Hydrogen Bonds, Crystal Structure Determination