Kristallstrukturen, Schwingungsspektren und Normalkoordinatenanalysen von *trans*-$[OsO_2(ox)_2]^{2-}$ und *trans*-$[OsO_2(mal)_2]^{2-}$

Crystal Structures, Vibrational Spectra and Normal Coordinate Analyses of *trans*-$[OsO_2(ox)_2]^{2-}$ and *trans*-$[OsO_2(mal)_2]^{2-}$

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trans-Dioxo-bisoxalatoosmate(VI), *trans*-Dioxo-bismalonatoosmate(VI), Crystal Structure, Vibrational Spectra, Normal Coordinate Analysis

The crystal structures of *trans*-$(Ph_4P)_2[OsO_2(ox)_2]$ (monoclinic, space group $P2_1/n$, a = 12.281(2), b = 14.5440(13), c = 13.9810(12) Å, β = 100.000(8)°, Z = 2) and *trans*-$(n\text{-}Bu_4N)_2[OsO_2(mal)_2]$ (triclinic, space group P1, a = 10.365(4), b = 10.707(3), c = 11.473(5) Å, α = 73.00(2), β = 64.44(3), γ = 82.55(3)°, Z = 1) have been determined by single crystal X-ray diffraction analysis. The IR and Raman spectra of these complexes were measured at room temperature. Based on the molecular parameters of the X-ray determinations normal coordinate analyses have been performed and the vibrations assigned. The valence force constants of $[OsO_2(ox)_2]^{2-}$ are f_d(Os=O) = 6.7, f_d(Os-O) = 2.9, f_d(C-O) = 5.05, f_d(C=O) = 11.2 and f_d(C-C) = 4.7 mdyn/Å and of $[OsO_2(mal)_2]^{2-}$ f_d(Os=O) = 6.7, f_d(Os-O) = 2.9, f_d(C-O) = 4.86, f_d(C=O) = 11.1 and f_d(C-C) = 4.07 mdyn/Å.

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