

## The mixed-valence rhenium(IV,V) complexes.

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### Czasopismo

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### Strony

1663-1676

### Kolekcja

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Artykuł

### Streszczenie

Reaction of  $K_4[Re_2OCl_{10}]$  with oxidizing agents in hydrochloric acid produced binuclear compounds:  $Cs_3[Re_2OCl_{10}]$  1,  $(Ph_4As)_3[Re_2OCl_{10}]$  2,  $(ChinH)_3[Re_2OCl_{10}]$  3. These complexes had been characterized by kinetic and magnetic investigations. The low-temperature magnetic susceptibility measurements have revealed, that  $Cs_3[Re_2OCl_{10}]$  complex is antiferromagnets, with Néel temperature at 10 K. The temperature dependence of the magnetic moment for 2 and 3 complexes indicates the existence of a magnetically isolated exchange-coupled dimer. In the electronic spectra, the intensive band at  $20150\text{ cm}^{-1}$  is associated with the presence of the two different oxidation states. In agreement with the evidence from the oxidation of oxochlororhenate ion and the disproportionation in solution, it is proposed that the compound should be considered as a  $Re(IV)-Re(V)$  mixed-valence system.

### Słowa kluczowe

bimetallic complexes, rhenium(IV), mixed-valence system