

# THE CRYSTAL STRUCTURE OF $[\text{Re}_2\text{OCl}_{10}]^{3-}$ ANION WITH (*R*)-(-)-3-HYDROXYQUINUCLIDIUM AND OXONIUM CATIONS

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In the reaction of  $[\text{NH}_4]_4[\text{Re}_2\text{OCl}_{10}]$  with  $\text{H}_2\text{O}_2$  in diluted hydrochloric acid and addition of (*R*)-(-)-3-hydroxyquinuclidinium (quin) three new salts of  $[\text{Re}_2\text{OCl}_{10}]^{3-}$  can be isolated  $(\text{quin})_3[\text{Re}_2\text{OCl}_{10}] \cdot \text{H}_2\text{O}$  (two polymorphs) and  $(\text{quin})_2(\text{H}_7\text{O}_3)[\text{Re}_2\text{OCl}_{10}]$ .

Here we present the crystal and molecular structure of  $[\text{Re}_2\text{OCl}_{10}]^{3-}$  salt containing both (*R*)-(-)-3-hydroxyquinuclidinium (quin) and oxonium cations  $(\text{quin})_2(\text{H}_7\text{O}_3)[\text{Re}_2\text{OCl}_{10}]$ . In this structure  $[\text{Re}_2\text{OCl}_{10}]^{3-}$  anions exist in a typical eclipsed conformation of an approximate  $D_{4h}$  symmetry. The dimeric anion, consists of two distorted, vertex-sharing  $\text{ReOCl}_5$  octahedrons. The Re-O and Re-Cl distances are comparable to values published for  $\text{Cs}_3[\text{Re}_2\text{OCl}_{10}]$ .<sup>1</sup>

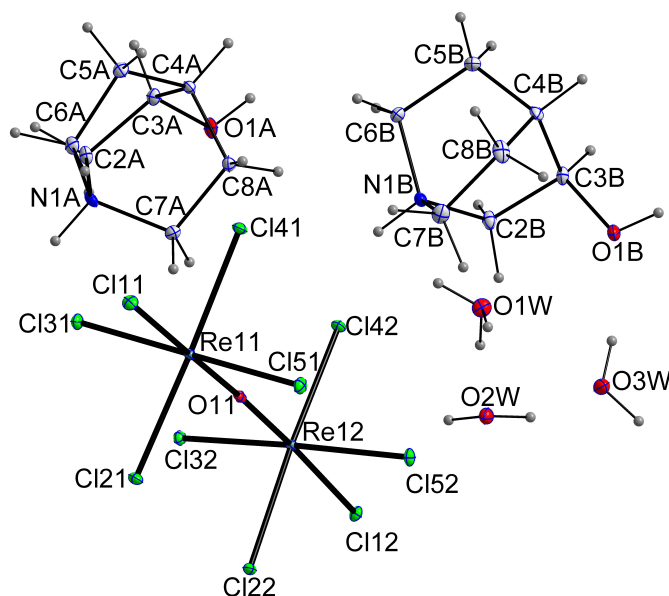


Figure 1. Molecular structure of  $(\text{quin})_2(\text{H}_7\text{O}_3)[\text{Re}_2\text{OCl}_{10}]$ .

1. T. Lis, T. Jeżowska-Trzebiatowska, *Acta Cryst. B* **32**, 867 (1976)