09. STRUCTURES OF ORGANIC, ORGANOMETALLIC AND COORDINATION COMPOUNDS

09.3-18 SYNTHESIS AND MOLECULAR STRUCTURES OF RELATED TRI-NUCLEAR RHODIUM COMPLEXES

M. Green, J.A.K. Howard, A. Bray, D. Johnson, and F.G.A. Stone, Department of Inorganic Chemistry, The University, Bristol, BS8 1TS, England.

Reaction of the unsaturated, 32 valence electron species \([\text{Rh}(\pi-C_2\text{H}_2)(n-C_5\text{Mes})_2]_3\) with \([\text{Rh}(\mu-C_2\text{H}_2)(n-C_5\text{Mes})_2]_3\) gives the trimetal compound \([\text{Rh}(\mu-C_2\text{H}_2)(n-C_5\text{Mes})_2]_3\) (I) containing \(\mu\)-bridging carbonyls on either face of an \(\text{Rh}_3\) triangle (\(\text{Rh}-\text{Rh}\) distances 2.553, 2.572, 2.639 Å). Acetylene reacts with (I) at room temperature displacing determination of compounds I-III and compare the geometry of the \(\text{Rh}_3\) moiety in each one.


09.3-19 ORDER PHENOMENA IN EPF\(_{1+1/2}\) (N,N'-DIHYDRO-N,N'-DIETHYLPHENAZINUM IODIDE). By E. Rossshirt, H. Boysen, A. Frey, and H. Jagodzinski, Institut für Kristallographie der Universität, München, W-Germany.

X-ray diffraction patterns of the organometallic compound EP\(_{1+1/2}\) reveal long-range-, short-range and disorder phenomena due to different interactions between and within two sublattices which are incommensurate with one another. One of them, chain-like inclinations of polyiodide anions has a 1-d liquid-like character. At room temperature two superperiods along the chains with a doubled and a sixfold period, respectively, are superposed. Both are of different origin. The modulation with a doubled cell is due to a displacement of the iodine perpendicular to the wavevector. A modulation with a fourfold superperiod exists along the stacking direction of the EP molecules. These superordering may be at least in part of common origin. The longitudinal modulations become more pronounced at low temperatures (190 K). Lateral correlations are both of short- and long-range type and concern the actual iodine positions. S.R.A. correlations exist between the \(\text{I}\)-chains within \(\{110\}\) planes. Satellite reflections within the diffuse layers indicate, in addition, correlations along the \(\{100\}\) via interatomic distances between the organic stacks and the \(\text{I}\)-chains. The description in frame of uncorrelated sublattices becomes worse at lower temperatures. In comparison with the results of Endres, Pouget, and Comes (J. Phys. Chem. Sol. 43 (1982) 739) we conclude that EP\(_{1+1/2}\) may exist in different states of order as far as superrstructures are concerned.

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