**Mercury Cyanamide / Carbodiimide Networks:**

**Synthesis and Crystal Structures of Hg\(_2\) (NCN)Cl\(_2\) and Hg\(_3\) (NCN)\(_2\)Cl\(_2\)**

Xiaohui Liu and Richard Dronskowski

Institut für Anorganische Chemie der RWTH Aachen, Prof.-Pirlet-Str. 1, D-52056 Aachen

Reprint requests to Prof. Dr. R. Dronskowski. E-mail: drons@HAL9000.ac.rwth-aachen.de

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Mercury Cyanamide / Carbodiimide Chloride, Inorganic Polymer, 2D Network

We report about the synthesis and crystal structure determination of Hg\(_2\) (NCN)Cl\(_2\) (P\(_2_1/c\) (No. 14), Z = 4, a = 806.7(1), b = 907.1(2), c = 788.0(1) pm, \(\beta = 106.446(3)^{\circ}\), 1374 independent reflections, 67 variables, \(R_1 = 0.0463\)) and Hg\(_3\) (NCN)\(_2\)Cl\(_2\) (Pc\(_a_2_1\) (No. 29), Z = 4, a = 702.0(2), b = 1078.5(2), c = 1050.3(2) pm, 1977 independent reflections, 71 variables, \(R_1 = 0.0380\)). Both compounds contain infinite Hg-NCN-Hg zigzag chains which are linked by additional Hg atoms to result in two-dimensional frameworks characterized by 20-membered rings sharing edges. The remarkably flexible structural backbone [Hg\(_3\) (NCN)\(_2\)]\(^{2+}\) hosts additional Cl\(^{-}\) anions and HgCl\(_2\) molecules in Hg\(_2\) (NCN)Cl\(_2\) but only Cl\(^{-}\) anions in Hg\(_3\) (NCN)\(_2\)Cl\(_2\), by that reaching a high packing efficiency in both cases. While Hg\(_2\) (NCN)Cl\(_2\) exclusively contains carbodiimide N=C=N\(^2\)\(^{-}\) species, Hg\(_3\) (NCN)\(_2\)Cl\(_2\) is the first structural example of an inorganic network built up from both carbodiimide N=C=N\(^2\)\(^{-}\) and cyanamide N-C\(\equiv\)N\(^2\)\(^{-}\) groups.