CONDENSATION OF HEXAFLUOROPROPANE-2,2-DIOL INTO A HYDROGEN-BONDED, 16-MEMBERED MACROCYCLIC LIGAND COMPLEXING COPPER(II)

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We have previously reported [1] on the ability of the stable gem-diol $(CF_3)_2C(OH)_2$, ('hexafluoroacetone hydrate') to coordinate to a variety of transition metal ions. With neutral coligands, such as amines of phosphines, two types of complex are found, containing either the 4-membered ring (a) or the 6-membered ring (b). The latter appears to be formed by template condensation of two diol ligands on the metal ion.

We have now found that, in the absence of coligand, four diol molecules may be coordinated to Cu^{2+} to give an anionic complex. Structural determination shows the metal to be at the centre of a 16-membered ring linked by four H-bonds, as in (c). This structure is very similar to that found in the absence of metal, where two H-bonded protons occupy central positions [2].

(a)
$$CF_3$$
 F_3C CF_3 CF_3 CF_3 CF_3 CF_3 (c) CF_3 CF_3

- 1 R. Hynes, N.C. Payne, and C.J.Willis, Abstracts XXVI ICCC, Oporto, August 1988.
- 2 H. W. Roesky <u>et al.</u>, <u>Chem. Ber. 118</u>, 2659 (1985).