

s7.m25.p3 **Enclathration of amine solvents by resorcinarene.** G. Ramon, M. R. Caira, L. R. Nassimbeni, *Chemistry Department, University of Cape Town, Rondebosch 7701, South Africa.* A. W. Coleman, IBCP, CNRS-UMR 5086, 7 passage du Vercors, 69367 Lyon, France. E-mail: ramon@science.uct.ac.za

Keywords: Inclusion complex; Structure; Kinetics

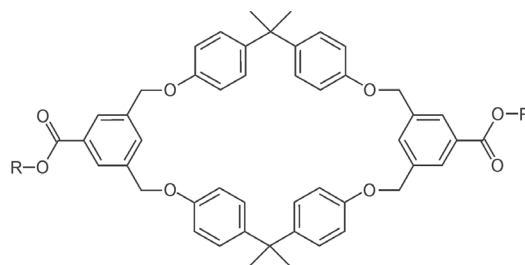
The resorcinarene 1⁴,1⁶,5⁴,5⁶-tetrahydroxy-2,4,6,8-tetramethyl-3⁴,3⁶,7⁴,7⁶-tetra(p-toluene sulfonyl-oxy)-1,3,5,7(1,3)-tetrabenzenacyclooctaphane hereafter referred to as CITS is the host of our new study on inclusion chemistry. We have formed several host-guest compounds with various volatile amines, namely: Ethylamine (bp: 17°C), Propylamine (bp: 33-34°C) and Isopropylamine (bp: 48°C). The low boiling points of these solvents allowed us to work on kinetics of enclathration of the host with guest vapour.

We have formed the complex CITS-5Propylamine. Thermal analysis (Thermal Gravimetry and Differential Scanning Calorimetry) have been carried out and the results were correlated with the crystal structure. The inclusion compound crystallize in the monoclinic crystal system in the space group P2₁/n and has Z=2 and H:G=5. One guest contained in the cavity of the resorcinarene is disordered about the 2-fold axis; the four other guests are outside the cavity and hydrogen bonded to the host molecule via the hydroxyl groups.

The kinetics of enclathration of the host with guest vapour has been studied using an automated magnetic suspension balance and the experiments were carried out under isothermal conditions. The results were modeled as following first order kinetics.

s7.m25.p4 **Exo-Functional Cyclophane Hosts. Crystal Structures of two Respective Inclusion Compounds.** W. Seichter^a, I. Csöreg^b, R. Golbs^a, E. Weber^a, ^aTU Bergakademie Freiberg, D-09596 Freiberg/Sachsen, Germany and ^bStructural Chemistry, Stockholm University, S-106 91 Stockholm, Sweden. E-mail: wilhelm.seichter@chemie.tu-freiberg.de

Keywords: Cyclophane; Inclusion compound; DMSO chains



	guest	host : guest	
1:	R = H	DMSO	1 : 4
2:	R = CH ₃	Benzene	1 : 2

The dicarboxylic acid 1 forms a 1:4 inclusion compound with dimethyl sulfoxide. The crystals belong to the group P-1 with cell dimensions $a = 10.154$, $b = 14.816$, $c = 20.337$ Å; $\alpha = 100.67$, $\beta = 95.66$, $\gamma = 106.32^\circ$. The guest molecules exhibit different modes of intermolecular interactions. The channel-like cavities are occupied by infinite chains of DMSO molecules, which are held together by weak C-H...O hydrogen bonds. The remaining guest molecules are connected to the carboxylic groups of the host thus giving linear supramolecular strands. A similar stacking behaviour of the host molecules is found in the 1:2 inclusion compound of 2 with benzene. It crystallizes in the monoclinic space group with cell dimensions $a = 10.441$, $b = 29.143$, $c = 8.250$ Å; $\beta = 98.30^\circ$. One guest molecule is located in the cavity of the macrocycle. Its orientation within the equatorial plane of the host suggests weak arene-arene contacts. The second benzene molecule is enclathrated in the space left by four host molecules.