Magnetic properties of neutral cubane cluster of cobalt(II) with acetate, dicyanamide and di-2-pyridyl-hemiacetal ligands

Substance

Cobalt(II) cluster with acetate, dicyanamide and di-2-pyridyl-hemiacetal ligands; $[Co_4(O_2CMe)_2\{N(CN)_2\}_2(L)_4].10H_2O$

Gross Formula

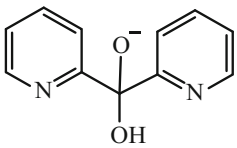
$C_{52}H_{62}Co_4N_{14}O_{22}$

Properties

Product of molar magnetic susceptibility with temperature and exchange energy

Structure

$[Co_4(O_2CMe)_2\{N(CN)_2\}_2(L)_4].10H_2O$; L = monoamion of the diol form of di-2-pyridyl ketone



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Data

T [K]	χ_g [10^{-6} emu/g]	$\chi_M T$ [cm^3 K mol^{-1}]	p_m or μ_{eff} [μ_B]	Θ_P [K]	Method	Remarks
300	–	11.85	–	–	SQUID	Tetranuclear cluster
45	–	12.35				
6..0	–	13.67				
2.0	–	11.58				

T: Temperature
χ_g: Specific susceptibility
χ_M: Molar susceptibility
p_m, μ_{eff}: Effective magnetic moment per molecule
Θ_P: Paramagnetic Curie constant (Weiss constant)

Additional Remark

(i) Weak ferromagnetic behavior observed

Reference

G.S. Papaefstathiou, A. Escuer, F.A. Mautner, C. Raptopoulou, A. Terzis, S.P. Perlepes, R. Vicente, Eur. J. Inorg. Chem. 879 (2005)