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# Magnetic properties of cobalt(II) nitrate complex with 12-membered tetraaza[N<sub>4</sub>] macrocyclic ligand

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## Substance

Dinitrato(1,3,7,9-tetraaza-4,6-10,12-tetraphenyl-2,8-dithiacyclododecane) cobalt(II); [Co(L)(NO<sub>3</sub>)<sub>2</sub>]

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## Gross Formula

C<sub>32</sub>H<sub>24</sub>CoN<sub>6</sub>O<sub>6</sub>S<sub>2</sub>

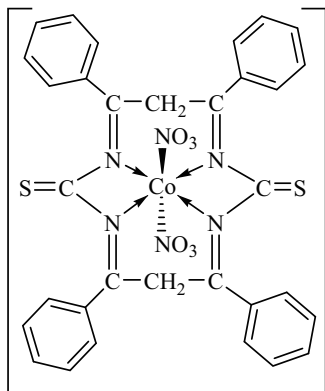
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## Properties

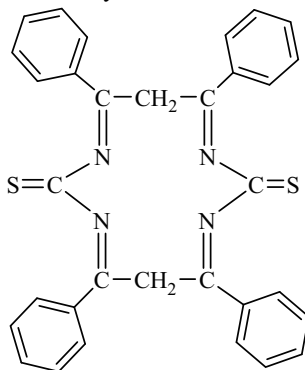
Molar magnetic moment

## Structure

[Co(L)(NO<sub>3</sub>)<sub>2</sub>];



L = 1,3,7,9-tetraaza-4,6-10,12-tetraphenyl-2,8-dithiacyclododecane



## Data

$T$ [K]	$\chi_g$ [10 <sup>-6</sup> emu/g]	$\chi_M$ [10 <sup>-6</sup> emu/mol]	$p_m$ or $\mu_{eff}$ [ $\mu_B$ ]	$\Theta_p$ [K]	Method	Remarks
RT	—	—	5.01	—	Gouy	octahedral geometry

$T$ : Temperature

$\chi_g$ : Specific susceptibility

$\chi_M$ : Molar susceptibility

$p_m, \mu_{eff}$ : Effective magnetic moment per molecule

$\Theta_p$ : Paramagnetic Curie constant (Weiss constant)

## Symbols and Abbreviations

Short form	Full form
$T$	temperature
$\chi_g$	magnetic susceptibility per gram (specific susceptibility)
$\chi_M$	magnetic susceptibility per mole (molar susceptibility)
$p_m$	effective magnetic moment per molecule
$\mu_{eff}$	effective magnetic moment
$\Theta_p$	paramagnetic Curie constant (Weiss constant)
Gouy	Gouy method or Pascal method

## Reference

S. Chandra, A. Gautam, M. Tyagi, Transition Met. Chem. **32**, 1079 (2007)