Acta Crystallographica Section E
Structure Reports Online
ISSN 1600-5368

Bis(1*H*-benzimidazole-κN^3)bis(4-methylbenzoato-$\kappa^2 O,O'$)cobalt(II)

Wen-Dong Song,* Chang-Sheng Gu, Xiao-Min Hao and Jian-Bin Yan

College of Science, Guang Dong Ocean University, Zhanjiang 524088, People's Republic of China
Correspondence e-mail: songwd60@126.com

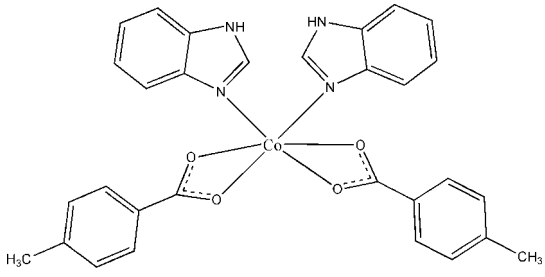
Received 7 December 2007; accepted 29 February 2008

Key indicators: single-crystal X-ray study; T = 296 K; mean σ(C–C) = 0.005 Å; R factor = 0.050; wR factor = 0.125; data-to-parameter ratio = 18.1.

In the title mononuclear complex, $[Co(C_8H_7O_2)_2(C_7H_6N_2)_2]$, the Co^{II} atom is coordinated by four carboxylate O atoms from two 4-methylbenzoate ligands and two N atoms from two benzimidazole ligands in an octahedral coordination geometry. The molecules are assembled *via* intermolecular N—H···O hydrogen-bonding interactions into a three-dimensional network.

Related literature

For literature on related structures, see: Song *et al.* (2007).



Experimental

Crystal data

$[Co(C_8H_7O_2)_2(C_7H_6N_2)_2]$
M_r = 565.48
Monoclinic, $P2_1/n$
a = 13.3209 (4) Å
b = 14.5129 (4) Å
c = 15.2656 (4) Å
β = 107.020 (1)°
V = 2821.97 (14) Å^3
Z = 4
Mo $K\alpha$ radiation
μ = 0.65 mm^{-1}
T = 296 (2) K
0.35 × 0.32 × 0.26 mm

Data collection

Bruker APEXII area-detector diffractometer
Absorption correction: multi-scan (*SADABS*; Sheldrick, 1996)
T_{min} = 0.805, T_{max} = 0.849
36127 measured reflections
6400 independent reflections
4431 reflections with $I > 2\sigma(I)$
R_{int} = 0.062

Refinement

$R[F^2 > 2\sigma(F^2)]$ = 0.050
$wR(F^2)$ = 0.125
S = 1.05
6400 reflections
354 parameters
H-atom parameters constrained
$\Delta\rho_{max}$ = 0.60 e Å^{-3}
$\Delta\rho_{min}$ = −0.33 e Å^{-3}

Table 1
Hydrogen-bond geometry (Å, °).

D—H···A	D—H	H···A	D···A	D—H···A
N2—H2···O4^{i}	0.86	1.90	2.757 (3)	173
N4—H4A···O2^{ii}	0.86	1.91	2.760 (3)	170

Symmetry codes: (i) $x-\frac{1}{2}, -y+\frac{3}{2}, z-\frac{1}{2}$; (ii) $-x+\frac{3}{2}, y+\frac{1}{2}, -z+\frac{1}{2}$.

Data collection: *APEX2* (Bruker, 2004); cell refinement: *SAINT* (Bruker, 2004); data reduction: *SAINT*; program(s) used to solve structure: *SHELXS97* (Sheldrick, 2008); program(s) used to refine structure: *SHELXL97* (Sheldrick, 2008); molecular graphics: *SHELXTL-XP* (Sheldrick, 2008); software used to prepare material for publication: *SHELXTL-XP*.

The authors acknowledge Guang Dong Ocean University for supporting this work.

Supplementary data and figures for this paper are available from the IUCr electronic archives (Reference: NG2407).

References

Bruker (2004). *APEX2* and *SAINT*. Bruker AXS Inc., Madison, Wisconsin, USA.
Sheldrick, G. M. (1996). *SADABS*. University of Göttingen, Germany.
Sheldrick, G. M. (2008). *Acta Cryst.* A**64**, 112–122.
Song, W.-D., Gu, C.-S., Hao, X.-M. & Liu, J.-W. (2007). *Acta Cryst.* E**63**, m1023–m1024.