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[*N*,*N*′-Bis(salicylidene)-1,2-diphenyl-(*RS*,*SR*)-1,2-ethanediaminato]-nickel(II)

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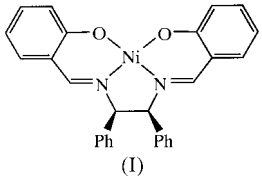
In crystals of the title compound, $[Ni(C_{28}H_{22}N_2O_2)]$, the coordination geometry around the Ni atom is square planar with a slight tetrahedral distortion. The five-membered *N*,*N*′-chelate ring adopts a distorted *gauche* conformation with the two phenyl groups in axial and equatorial orientations.

Comment

The thermal dehydrogenation reaction of [Ni(3-EtOsal-*meso*-stien)] with $[VO(salen)]NO_3$ in the solid state has been



(I)

investigated by Hoshina *et al.* (2000), where H_2(3-EtOsal-*meso*-stien) is *N*,*N*′-bis(3-ethoxysalicylidene)-1,2-diphenyl-1,2-ethanediamine. The crystal structure of [Ni(sal-*meso*-stien)], (I), is presented here, where sal-*meso*-stien is *N*,*N*′-bis(salicylidene)-1,2-diphenyl-1,2-ethanediamine.

Experimental

The title complex, [Ni(sal-*meso*-stien)], was prepared by the reaction of a hot methanol solution (30 ml) of nickel(II) acetate tetrahydrate (0.249 g, 1 mmol) with the Schiff base ligand H_2(sal-*meso*-stien) (0.421 g, 1 mmol). The resulting red–brown precipitate was collected by filtration and washed with ether (yield 90%). The red crystals of [Ni(sal-*meso*-stien)] were grown by slow evaporation of an acetonitrile solution.

Crystal data

$[Ni(C_{28}H_{22}N_2O_2)]$	D_x = 1.402 Mg m^{-3}
M_r = 477.19	Mo $K\alpha$ radiation
Monoclinic, $P2_1/n$	Cell parameters from 25 reflections
a = 12.517 (2) Å	θ = 14.2–14.9°
b = 11.500 (3) Å	μ = 0.887 mm^{-1}
c = 16.413 (2) Å	T = 297 K
β = 106.893 (9)°	Prismatic, red
V = 2260.7 (6) Å^3	0.5 × 0.4 × 0.3 mm
Z = 4	

Data collection

Rigaku AFC-5 diffractometer	R_{int} = 0.026
θ–2θ scans	θ_{max} = 27.5°
Absorption correction: ψ scan (North *et al.*, 1968)	$h = 0 \rightarrow 16$
T_{min} = 0.658, T_{max} = 0.766	$k = 0 \rightarrow 14$
5415 measured reflections	$l = -21 \rightarrow 21$
5182 independent reflections	3 standard reflections every 100 reflections
3469 reflections with $I > 2\sigma(I)$	intensity decay: none

Refinement

Refinement on F^2	$w = 1/[\sigma^2(F_o^2) + (0.0502P)^2 + 0.2639P]$ where $P = (F_o^2 + 2F_c^2)/3$
$R(F)$ = 0.044	$(\Delta/\sigma)_{max}$ = 0.001
$wR(F^2)$ = 0.109	$\Delta\rho_{max}$ = 0.47 e Å^{-3}
S = 1.03	$\Delta\rho_{min}$ = −0.28 e Å^{-3}
3469 reflections	
298 parameters	
H-atom parameters not refined	

Table 1
Selected geometric parameters (Å, °).

Ni—O2	1.846 (2)	Ni—N4	1.848 (2)
Ni—O3	1.840 (2)	Ni—N5	1.855 (2)
O2—Ni—O3	84.49 (8)	O3—Ni—N4	174.53 (10)
O2—Ni—N4	94.70 (9)	O3—Ni—N5	94.85 (9)
O2—Ni—N5	171.6 (1)	N4—Ni—N5	86.74 (10)

All H-atom positions were calculated geometrically and fixed with $U_{iso}(H) = 1.2U_{eq}$(parent atom).

Data collection and cell refinement: *MSC/AFC Diffractometer Control Software*; data reduction: *TEXSAN* (Molecular Structure Corporation, 1999); program(s) used to solve structure: *SIR*92 (Altomare *et al.*, 1994); program(s) used to refine structure: *SHELXL*97 (Sheldrick, 1997); software used to prepare material for publication: *TEXSAN*.

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