An Anionic Zero-Valent Nickel Carbonyl Complex Supported by a Tri-phosphine Borate Ligand: An Ni–C≡O–Li Isocarbonyl

SUPPORTING INFORMATION

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TABLE OF CONTENTS

Crystal Structure of [Ni(triphos)(CN-xylyl)] (1)

Tables

Table 1. Selected bond distances and angles of calculated and experimental results. .. 3

Table 2. Crystal data and structure refinement for **1**. 5

Table 3. Atomic coordinates (x 10^4) and equivalent isotropic displacement parameters (Å^{2}x 10^3) 7

Table 4. Bond lengths [Å] and angles [°] for **1**. 11

Table 5. Anisotropic displacement parameters (Å^{2}x 10^3) for **1**. The anisotropic.. 21

Table 6. Hydrogen coordinates (x 10^4) and isotropic displacement parameters (Å^{2}x 10^3)..... 25

Table 1. Selected bond distances and angles of calculated and experimental results.

	Bond lengths and angles	
	Exp.	Cal.
Ni-C(1)	1.702(2)	1.752
C(1)-O(1)	1.175(3)	1.187
Ni-P(1)	2.1949(6)	2.271
Ni-P(2)	2.1913(6)	2.257
Ni-P(3)	2.1974(6)	2.255
P(1)-C(2)	1.823(2)	1.861
P(2)-C(3)	1.827(2)	1.855
P(3)-C(4)	1.816(2)	1.855
P(1)-C(17)	1.835(2)	1.876
P(1)-C(11)	1.849(2)	1.875
P(2)-C(29)	1.842(2)	1.871
P(2)-C(23)	1.847(2)	1.872
P(3)-C(41)	1.835(2)	1.872
P(3)-C(35)	1.847(2)	1.874
Ni-C(1)-O(1)	175.7(2)	176.84
C(1)-Ni-P(1)	121.37(8)	125.06
C(1)-Ni-P(2)	127.28(8)	120.59
C(1)-Ni-P(3)	117.51(8)	124.99
P(1)-Ni-P(2)	93.88(2)	91.87
P(1)-Ni-P(3)	94.60(2)	92.64

P(2)-Ni-P(3)	94.58(2)	92.56
C(5)-B(1)-C(4)	108.51(17)	110.64
C(5)-B(1)-C(3)	105.64(17)	105.10
C(5)-B(1)-C(2)	110.59(17)	108.79
B(1)-C(3)-P(2)	113.34(15)	113.34
B(1)-C(2)-P(1)	112.64(14)	114.75
B(1)-C(4)-P(3)	112.48(14)	113.70

Table 2. Crystal data and structure refinement for **1**.

Identification code	con37	
Empirical formula	C58 H65 B Li Ni O4 P3	
Formula weight	995.47	
Temperature	100(2) K	
Wavelength	0.71073 Å	
Crystal system	Monoclinic	
Space group	P2(1)/n	
Unit cell dimensions	a = 18.0683(11) Å	α = 90°.
	b = 12.9880(8) Å	β = 109.9440(10)°.
	c = 23.7281(15) Å	γ = 90°.
Volume	5234.3(6) $Å^3$	
Z	4	
Density (calculated)	1.263 Mg/m^3	
Absorption coefficient	0.508 mm^{-1}	
F(000)	2104	
Crystal size	0.26 x 0.22 x 0.12 mm^3	
Theta range for data collection	1.74 to 27.50°.	
Index ranges	-23<=h<=23,	-16<=k<=15, -30<=l<=25
Reflections collected	28745	

Independent reflections	11466 [R(int) = 0.0308]
Completeness to theta = 27.50°	95.3 %
Absorption correction	Semi-empirical from equivalents
Max. and min. transmission	1.000 and 0.922
Refinement method	Full-matrix least-squares on F^2
Data / restraints / parameters	11466 / 0 / 613
Goodness-of-fit on F^2	1.031
Final R indices [I>2sigma(I)]	R1 = 0.0467, wR2 = 0.1109
R indices (all data)	R1 = 0.0608, wR2 = 0.1167
Largest diff. peak and hole	1.240 and -0.402 e.$Å^{-3}$

Table 3. Atomic coordinates (x 10^4) and equivalent isotropic displacement parameters ($Å^2$x 10^3) for **1**. U(eq) is defined as one third of the trace of the orthogonalized U^{ij} tensor.

	x	y	z	U(eq)
Ni(1)	70(1)	4965(1)	2473(1)	15(1)
P(1)	-978(1)	5544(1)	2641(1)	15(1)
P(2)	-173(1)	5837(1)	1639(1)	15(1)
P(3)	-504(1)	3550(1)	2026(1)	15(1)
O(1)	1538(1)	4702(2)	3440(1)	40(1)
O(2)	2295(1)	6600(1)	4162(1)	37(1)
O(3)	3255(1)	4496(2)	4123(1)	40(1)
O(4)	1951(1)	4679(2)	4813(1)	42(1)
B(1)	-1750(1)	4972(2)	1396(1)	16(1)
Li(1)	2312(2)	5121(3)	4187(2)	32(1)
C(1)	949(1)	4842(2)	3039(1)	23(1)
C(2)	-1776(1)	5771(2)	1936(1)	16(1)
C(3)	-1093(1)	5382(2)	1088(1)	17(1)
C(4)	-1553(1)	3780(2)	1673(1)	16(1)
C(5)	-2597(1)	4959(2)	852(1)	16(1)
C(6)	-3204(1)	5670(2)	802(1)	19(1)
C(7)	-3914(1)	5658(2)	323(1)	22(1)

C(8)	-4048(1)	4930(2)	-125(1)	24(1)
C(9)	-3465(1)	4218(2)	-95(1)	22(1)
C(10)	-2756(1)	4240(2)	385(1)	19(1)
C(11)	-1405(1)	4696(2)	3076(1)	17(1)
C(12)	-2184(1)	4769(2)	3048(1)	26(1)
C(13)	-2484(1)	4130(2)	3382(1)	31(1)
C(14)	-2004(2)	3417(2)	3764(1)	32(1)
C(15)	-1224(2)	3341(2)	3807(1)	33(1)
C(16)	-930(1)	3974(2)	3461(1)	25(1)
C(17)	-907(1)	6710(2)	3094(1)	16(1)
C(18)	-1497(1)	7457(2)	2964(1)	19(1)
C(19)	-1423(1)	8296(2)	3341(1)	22(1)
C(20)	-769(1)	8405(2)	3850(1)	24(1)
C(21)	-172(1)	7678(2)	3978(1)	24(1)
C(22)	-241(1)	6843(2)	3600(1)	21(1)
C(23)	-291(1)	7248(2)	1655(1)	19(1)
C(24)	-626(1)	7833(2)	1138(1)	24(1)
C(25)	-660(1)	8899(2)	1173(1)	31(1)
C(26)	-362(1)	9388(2)	1719(1)	34(1)
C(27)	-27(2)	8819(2)	2230(1)	34(1)
C(28)	6(1)	7754(2)	2199(1)	24(1)
C(29)	594(1)	5825(2)	1289(1)	17(1)

C(30)	434(1)	5862(2)	675(1)	21(1)
C(31)	1045(1)	5839(2)	441(1)	28(1)
C(32)	1818(1)	5786(2)	821(1)	29(1)
C(33)	1982(1)	5765(2)	1433(1)	29(1)
C(34)	1376(1)	5779(2)	1665(1)	24(1)
C(35)	-225(1)	2970(2)	1416(1)	19(1)
C(36)	-701(1)	2234(2)	1030(1)	25(1)
C(37)	-501(2)	1822(2)	565(1)	34(1)
C(38)	179(2)	2144(2)	475(1)	40(1)
C(39)	661(2)	2853(2)	855(1)	40(1)
C(40)	464(1)	3260(2)	1329(1)	28(1)
C(41)	-371(1)	2406(2)	2504(1)	16(1)
C(42)	-984(1)	1821(2)	2559(1)	23(1)
C(43)	-825(1)	980(2)	2948(1)	27(1)
C(44)	-62(1)	711(2)	3273(1)	25(1)
C(45)	556(1)	1282(2)	3217(1)	26(1)
C(46)	400(1)	2128(2)	2837(1)	23(1)
C(47)	2060(2)	7223(2)	3620(1)	41(1)
C(48)	1866(2)	8271(2)	3804(2)	45(1)
C(49)	2324(2)	8323(2)	4469(1)	43(1)
C(50)	2285(2)	7232(2)	4664(1)	41(1)
C(51)	3186(2)	3472(2)	3869(1)	46(1)

C(52)	3147(2)	3603(3)	3222(2)	59(1)
C(53)	3275(2)	4743(3)	3158(2)	61(1)
C(54)	3642(2)	5086(2)	3793(2)	57(1)
C(55)	2315(2)	3990(2)	5305(1)	43(1)
C(56)	1686(2)	3624(2)	5533(1)	46(1)
C(57)	937(2)	3825(3)	5020(2)	67(1)
C(58)	1122(2)	4767(3)	4741(2)	54(1)

Table 4. Bond lengths [Å] and angles [°] for **1**.

Ni(1)-C(1)	1.702(2)
Ni(1)-P(2)	2.1913(6)
Ni(1)-P(1)	2.1949(6)
Ni(1)-P(3)	2.1974(6)
P(1)-C(2)	1.823(2)
P(1)-C(17)	1.835(2)
P(1)-C(11)	1.849(2)
P(2)-C(3)	1.827(2)
P(2)-C(29)	1.842(2)
P(2)-C(23)	1.847(2)
P(3)-C(4)	1.816(2)
P(3)-C(41)	1.835(2)
P(3)-C(35)	1.847(2)
O(1)-C(1)	1.175(3)
O(1)-Li(1)	1.924(5)
O(2)-C(50)	1.453(3)
O(2)-C(47)	1.453(3)
O(2)-Li(1)	1.921(5)
O(3)-C(54)	1.436(4)
O(3)-C(51)	1.448(3)

O(3)-Li(1)	1.939(5)
O(4)-C(55)	1.438(3)
O(4)-C(58)	1.453(3)
O(4)-Li(1)	1.905(5)
B(1)-C(5)	1.632(3)
B(1)-C(2)	1.661(3)
B(1)-C(4)	1.672(3)
B(1)-C(3)	1.680(3)
C(5)-C(10)	1.400(3)
C(5)-C(6)	1.407(3)
C(6)-C(7)	1.394(3)
C(7)-C(8)	1.381(3)
C(8)-C(9)	1.386(3)
C(9)-C(10)	1.394(3)
C(11)-C(16)	1.384(3)
C(11)-C(12)	1.389(3)
C(12)-C(13)	1.379(3)
C(13)-C(14)	1.376(4)
C(14)-C(15)	1.382(4)
C(15)-C(16)	1.389(3)
C(17)-C(22)	1.391(3)
C(17)-C(18)	1.397(3)

C(18)-C(19)	1.388(3)
C(19)-C(20)	1.379(3)
C(20)-C(21)	1.386(3)
C(21)-C(22)	1.386(3)
C(23)-C(28)	1.383(3)
C(23)-C(24)	1.395(3)
C(24)-C(25)	1.389(3)
C(25)-C(26)	1.377(4)
C(26)-C(27)	1.371(4)
C(27)-C(28)	1.387(3)
C(29)-C(30)	1.386(3)
C(29)-C(34)	1.392(3)
C(30)-C(31)	1.395(3)
C(31)-C(32)	1.382(3)
C(32)-C(33)	1.380(4)
C(33)-C(34)	1.382(3)
C(35)-C(40)	1.383(3)
C(35)-C(36)	1.399(3)
C(36)-C(37)	1.380(3)
C(37)-C(38)	1.381(4)
C(38)-C(39)	1.373(4)
C(39)-C(40)	1.395(4)

C(41)-C(42)	1.385(3)
C(41)-C(46)	1.395(3)
C(42)-C(43)	1.395(3)
C(43)-C(44)	1.375(3)
C(44)-C(45)	1.384(3)
C(45)-C(46)	1.388(3)
C(47)-C(48)	1.506(4)
C(48)-C(49)	1.513(4)
C(49)-C(50)	1.500(4)
C(51)-C(52)	1.522(4)
C(52)-C(53)	1.514(5)
C(53)-C(54)	1.492(5)
C(55)-C(56)	1.494(4)
C(56)-C(57)	1.501(4)
C(57)-C(58)	1.483(4)

C(1)-Ni(1)-P(2)	127.28(8)
C(1)-Ni(1)-P(1)	121.37(8)
P(2)-Ni(1)-P(1)	93.88(2)
C(1)-Ni(1)-P(3)	117.51(8)
P(2)-Ni(1)-P(3)	94.58(2)
P(1)-Ni(1)-P(3)	94.60(2)

C(2)-P(1)-C(17)	106.22(10)
C(2)-P(1)-C(11)	104.98(10)
C(17)-P(1)-C(11)	97.13(10)
C(2)-P(1)-Ni(1)	110.50(7)
C(17)-P(1)-Ni(1)	119.75(7)
C(11)-P(1)-Ni(1)	116.56(7)
C(3)-P(2)-C(29)	108.31(10)
C(3)-P(2)-C(23)	104.61(10)
C(29)-P(2)-C(23)	97.34(9)
C(3)-P(2)-Ni(1)	109.41(7)
C(29)-P(2)-Ni(1)	116.98(7)
C(23)-P(2)-Ni(1)	118.89(8)
C(4)-P(3)-C(41)	108.32(10)
C(4)-P(3)-C(35)	103.04(10)
C(41)-P(3)-C(35)	98.08(10)
C(4)-P(3)-Ni(1)	109.37(7)
C(41)-P(3)-Ni(1)	115.98(7)
C(35)-P(3)-Ni(1)	120.65(7)
C(1)-O(1)-Li(1)	151.1(2)
C(50)-O(2)-C(47)	109.2(2)
C(50)-O(2)-Li(1)	122.9(2)
C(47)-O(2)-Li(1)	125.5(2)

C(54)-O(3)-C(51)	104.6(2)
C(54)-O(3)-Li(1)	115.1(2)
C(51)-O(3)-Li(1)	117.7(2)
C(55)-O(4)-C(58)	108.3(2)
C(55)-O(4)-Li(1)	129.5(2)
C(58)-O(4)-Li(1)	119.9(2)
C(5)-B(1)-C(2)	110.59(17)
C(5)-B(1)-C(4)	108.51(17)
C(2)-B(1)-C(4)	109.57(18)
C(5)-B(1)-C(3)	105.64(17)
C(2)-B(1)-C(3)	110.35(17)
C(4)-B(1)-C(3)	112.11(17)
O(4)-Li(1)-O(2)	108.6(2)
O(4)-Li(1)-O(1)	107.3(2)
O(2)-Li(1)-O(1)	104.8(2)
O(4)-Li(1)-O(3)	118.6(2)
O(2)-Li(1)-O(3)	114.9(2)
O(1)-Li(1)-O(3)	101.1(2)
O(1)-C(1)-Ni(1)	175.7(2)
B(1)-C(2)-P(1)	112.64(14)
B(1)-C(3)-P(2)	113.34(15)
B(1)-C(4)-P(3)	112.48(14)

C(10)-C(5)-C(6)	115.29(19)
C(10)-C(5)-B(1)	121.14(18)
C(6)-C(5)-B(1)	123.5(2)
C(7)-C(6)-C(5)	122.3(2)
C(8)-C(7)-C(6)	120.5(2)
C(7)-C(8)-C(9)	119.1(2)
C(8)-C(9)-C(10)	119.9(2)
C(9)-C(10)-C(5)	122.9(2)
C(16)-C(11)-C(12)	117.9(2)
C(16)-C(11)-P(1)	119.23(16)
C(12)-C(11)-P(1)	122.82(18)
C(13)-C(12)-C(11)	121.5(2)
C(14)-C(13)-C(12)	120.1(2)
C(13)-C(14)-C(15)	119.6(2)
C(14)-C(15)-C(16)	120.1(2)
C(11)-C(16)-C(15)	120.9(2)
C(22)-C(17)-C(18)	118.3(2)
C(22)-C(17)-P(1)	118.37(16)
C(18)-C(17)-P(1)	123.27(16)
C(19)-C(18)-C(17)	120.3(2)
C(20)-C(19)-C(18)	120.7(2)
C(19)-C(20)-C(21)	119.6(2)

C(22)-C(21)-C(20)	119.9(2)
C(21)-C(22)-C(17)	121.1(2)
C(28)-C(23)-C(24)	118.4(2)
C(28)-C(23)-P(2)	118.67(18)
C(24)-C(23)-P(2)	122.77(18)
C(25)-C(24)-C(23)	120.3(2)
C(26)-C(25)-C(24)	120.4(3)
C(27)-C(26)-C(25)	119.7(2)
C(26)-C(27)-C(28)	120.3(3)
C(23)-C(28)-C(27)	120.8(2)
C(30)-C(29)-C(34)	118.50(19)
C(30)-C(29)-P(2)	123.68(16)
C(34)-C(29)-P(2)	117.81(17)
C(29)-C(30)-C(31)	120.5(2)
C(32)-C(31)-C(30)	120.2(2)
C(33)-C(32)-C(31)	119.6(2)
C(32)-C(33)-C(34)	120.3(2)
C(33)-C(34)-C(29)	121.0(2)
C(40)-C(35)-C(36)	118.2(2)
C(40)-C(35)-P(3)	120.42(18)
C(36)-C(35)-P(3)	121.43(17)
C(37)-C(36)-C(35)	121.2(2)

C(36)-C(37)-C(38)	119.8(3)
C(39)-C(38)-C(37)	119.9(3)
C(38)-C(39)-C(40)	120.4(2)
C(35)-C(40)-C(39)	120.5(2)
C(42)-C(41)-C(46)	118.8(2)
C(42)-C(41)-P(3)	124.18(17)
C(46)-C(41)-P(3)	117.02(16)
C(41)-C(42)-C(43)	120.0(2)
C(44)-C(43)-C(42)	120.8(2)
C(43)-C(44)-C(45)	119.8(2)
C(44)-C(45)-C(46)	119.6(2)
C(45)-C(46)-C(41)	121.0(2)
O(2)-C(47)-C(48)	106.0(2)
C(47)-C(48)-C(49)	104.0(2)
C(50)-C(49)-C(48)	102.4(2)
O(2)-C(50)-C(49)	105.3(2)
O(3)-C(51)-C(52)	106.5(2)
C(53)-C(52)-C(51)	104.8(3)
C(54)-C(53)-C(52)	102.7(3)
O(3)-C(54)-C(53)	105.1(2)
O(4)-C(55)-C(56)	107.3(2)
C(55)-C(56)-C(57)	103.8(2)

C(58)-C(57)-C(56)	103.1(3)
O(4)-C(58)-C(57)	105.2(2)

Symmetry transformations used to generate equivalent atoms:

Table 5. Anisotropic displacement parameters ($Å^2$x 10^3) for **1**. The anisotropic displacement factor exponent takes the form: $-2\pi^2[h^2 a^{*2}U^{11} + \ldots + 2 h k a^* b^* U^{12}]$

	U^{11}	U^{22}	U^{33}	U^{23}	U^{13}	U^{12}
Ni(1)	13(1)	16(1)	15(1)	1(1)	4(1)	0(1)
P(1)	14(1)	16(1)	13(1)	0(1)	4(1)	0(1)
P(2)	15(1)	15(1)	15(1)	-1(1)	6(1)	0(1)
P(3)	15(1)	15(1)	16(1)	1(1)	5(1)	1(1)
O(1)	28(1)	46(1)	34(1)	-5(1)	-4(1)	3(1)
O(2)	49(1)	29(1)	30(1)	-2(1)	9(1)	6(1)
O(3)	28(1)	35(1)	50(1)	-8(1)	4(1)	3(1)
O(4)	31(1)	52(1)	41(1)	19(1)	10(1)	8(1)
B(1)	15(1)	17(1)	14(1)	1(1)	5(1)	2(1)
Li(1)	27(2)	34(3)	31(3)	3(2)	2(2)	2(2)
C(1)	21(1)	26(1)	21(1)	-1(1)	7(1)	4(1)
C(2)	15(1)	18(1)	16(1)	1(1)	6(1)	1(1)
C(3)	17(1)	16(1)	15(1)	0(1)	4(1)	-1(1)
C(4)	15(1)	18(1)	15(1)	-2(1)	4(1)	0(1)
C(5)	16(1)	18(1)	16(1)	3(1)	7(1)	-3(1)
C(6)	21(1)	19(1)	17(1)	3(1)	6(1)	0(1)
C(7)	18(1)	26(1)	22(1)	7(1)	7(1)	2(1)

C(8)	17(1)	34(2)	17(1)	6(1)	2(1)	-5(1)
C(9)	23(1)	28(1)	14(1)	-2(1)	5(1)	-5(1)
C(10)	19(1)	21(1)	18(1)	1(1)	7(1)	0(1)
C(11)	20(1)	18(1)	13(1)	-3(1)	6(1)	-4(1)
C(12)	24(1)	31(1)	23(1)	1(1)	9(1)	-1(1)
C(13)	28(1)	41(2)	30(2)	-6(1)	16(1)	-12(1)
C(14)	48(2)	26(1)	29(2)	-4(1)	23(1)	-11(1)
C(15)	46(2)	28(2)	27(2)	10(1)	17(1)	4(1)
C(16)	28(1)	24(1)	25(1)	1(1)	12(1)	1(1)
C(17)	19(1)	18(1)	13(1)	0(1)	8(1)	-2(1)
C(18)	17(1)	24(1)	18(1)	-2(1)	6(1)	-1(1)
C(19)	22(1)	21(1)	28(1)	-3(1)	13(1)	0(1)
C(20)	29(1)	23(1)	24(1)	-7(1)	15(1)	-9(1)
C(21)	23(1)	29(1)	17(1)	-5(1)	3(1)	-6(1)
C(22)	21(1)	23(1)	20(1)	0(1)	6(1)	1(1)
C(23)	18(1)	16(1)	24(1)	0(1)	12(1)	-1(1)
C(24)	24(1)	21(1)	28(1)	3(1)	9(1)	2(1)
C(25)	28(1)	23(1)	45(2)	10(1)	16(1)	7(1)
C(26)	33(1)	14(1)	60(2)	-2(1)	26(1)	-1(1)
C(27)	38(1)	25(2)	44(2)	-13(1)	23(1)	-7(1)
C(28)	27(1)	23(1)	26(1)	-3(1)	13(1)	-5(1)
C(29)	20(1)	12(1)	21(1)	-1(1)	11(1)	-1(1)

C(30)	25(1)	17(1)	22(1)	-1(1)	9(1)	-3(1)
C(31)	43(1)	24(1)	25(1)	-5(1)	21(1)	-6(1)
C(32)	34(1)	23(1)	41(2)	-1(1)	27(1)	0(1)
C(33)	23(1)	29(2)	40(2)	4(1)	14(1)	2(1)
C(34)	24(1)	25(1)	24(1)	2(1)	10(1)	3(1)
C(35)	22(1)	17(1)	18(1)	3(1)	8(1)	5(1)
C(36)	28(1)	26(1)	22(1)	-1(1)	8(1)	3(1)
C(37)	45(2)	32(2)	23(1)	-3(1)	11(1)	7(1)
C(38)	65(2)	33(2)	34(2)	4(1)	32(2)	15(1)
C(39)	46(2)	31(2)	59(2)	11(2)	41(2)	10(1)
C(40)	28(1)	17(1)	40(2)	2(1)	16(1)	3(1)
C(41)	22(1)	14(1)	13(1)	-1(1)	5(1)	-1(1)
C(42)	22(1)	21(1)	24(1)	2(1)	6(1)	0(1)
C(43)	32(1)	22(1)	30(2)	3(1)	13(1)	-5(1)
C(44)	39(1)	20(1)	17(1)	4(1)	9(1)	3(1)
C(45)	27(1)	26(1)	20(1)	4(1)	2(1)	5(1)
C(46)	21(1)	21(1)	23(1)	3(1)	4(1)	-1(1)
C(47)	52(2)	33(2)	35(2)	0(1)	10(1)	-4(1)
C(48)	43(2)	27(2)	71(2)	8(2)	28(2)	2(1)
C(49)	44(2)	34(2)	64(2)	-19(2)	35(2)	-5(1)
C(50)	42(2)	42(2)	38(2)	-11(1)	13(1)	0(1)
C(51)	51(2)	23(2)	59(2)	0(2)	13(2)	8(1)

C(52)	70(2)	54(2)	60(2)	-11(2)	33(2)	2(2)
C(53)	47(2)	74(3)	72(3)	25(2)	33(2)	20(2)
C(54)	34(2)	39(2)	104(3)	-4(2)	31(2)	-2(1)
C(55)	42(2)	46(2)	37(2)	14(2)	8(1)	11(1)
C(56)	61(2)	43(2)	39(2)	6(2)	21(2)	-3(2)
C(57)	47(2)	80(3)	76(3)	34(2)	24(2)	4(2)
C(58)	37(2)	68(2)	59(2)	20(2)	19(2)	10(2)

Table 6. Hydrogen coordinates (x 10^4) and isotropic displacement parameters ($Å^2$x 10^{-3}) for **1**.

	x	y	z	U(eq)
H(2A)	-2286	5690	2001	19
H(2B)	-1744	6489	1805	19
H(3A)	-1330	5948	804	20
H(3B)	-974	4811	856	20
H(4A)	-1771	3277	1344	20
H(4B)	-1817	3667	1971	20
H(6A)	-3127	6177	1105	23
H(7A)	-4308	6154	304	26
H(8A)	-4534	4918	-450	28
H(9A)	-3548	3715	-401	26
H(10A)	-2364	3746	397	23
H(12A)	-2517	5269	2793	31
H(13A)	-3021	4183	3349	38
H(14A)	-2208	2980	3997	38
H(15A)	-889	2856	4073	39
H(16A)	-394	3910	3489	30

H(18A)	-1952	7391	2615	23
H(19A)	-1828	8800	3248	26
H(20A)	-727	8974	4110	28
H(21A)	284	7753	4325	29
H(22A)	173	6352	3688	26
H(24A)	-831	7502	759	29
H(25A)	-891	9292	819	37
H(26A)	-388	10117	1742	40
H(27A)	183	9156	2606	40
H(28A)	236	7368	2556	29
H(30A)	-96	5904	411	25
H(31A)	929	5861	20	34
H(32A)	2235	5763	662	35
H(33A)	2512	5741	1697	35
H(34A)	1495	5756	2087	28
H(36A)	-1170	2012	1089	30
H(37A)	-829	1320	308	40
H(38A)	312	1875	149	48
H(39A)	1131	3067	795	47
H(40A)	806	3741	1594	33
H(42A)	-1513	1993	2332	27
H(43A)	-1248	588	2988	33

H(44A)	40	135	3535	30
H(45A)	1084	1097	3438	31
H(46A)	825	2523	2802	27
H(47A)	1593	6919	3312	49
H(47B)	2493	7270	3455	49
H(48A)	1294	8341	3725	54
H(48B)	2035	8821	3585	54
H(49A)	2875	8540	4546	52
H(49B)	2074	8802	4674	52
H(50A)	2742	7072	5026	49
H(50B)	1796	7114	4755	49
H(51A)	2704	3129	3885	56
H(51B)	3648	3048	4095	56
H(52A)	3563	3193	3143	70
H(52B)	2628	3383	2941	70
H(53A)	3631	4864	2927	73
H(53B)	2770	5102	2958	73
H(54A)	4215	4946	3940	68
H(54B)	3557	5832	3830	68
H(55A)	2733	4352	5626	52
H(55B)	2555	3399	5167	52
H(56A)	1696	4014	5894	56

H(56B)	1747	2881	5632	56
H(57A)	807	3243	4734	80
H(57B)	491	3944	5165	80
H(58A)	795	4803	4311	65
H(58B)	1025	5392	4945	65