Supporting Information for

Diphenylamido Precursors to Bisalkoxide Molybdenum Olefin Metathesis Catalysts

by

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For $Mo(NAr)(CHCMe_2Ph)(NPh_2)_2$

Crystallographic Details

Low temperature diffraction data were collected on a Siemens Platform three-circle diffractometer coupled to a Bruker-AXS Smart Apex CCD detector with graphite-monochromated MoK_ radiation (_ = 0.71073 Å), performing ϕ- and _-scans. The structure was solved by direct methods using SHELXS[1] and refined against F^2 on all data by full-matrix least squares with SHELXL-97[2]. All non-hydrogen atoms were refined anisotropically. All hydrogen atoms were included into the model at geometrically calculated positions and refined using a riding model. The isotropic displacement parameters of all hydrogen atoms were fixed to 1.2 times the U value of the atoms they are linked to (1.5 times for methyl groups). Crystal and structural refinement data are listed in Table 1.

The crystal was non-merohedrally twinned. Two independent orientation matrices for the unit cell were found using the program CELL_NOW[3], and data reduction taking into account the twinning was performed with SAINT[4]. The program TWINABS[5] was used to perform absorption correction and to set up the HKLF5 format file for structure refinement. The twin ratio was refined freely and converged at a value of 0.256(9).

1. Sheldrick, G. M. *Acta Cryst.* **1990**, *A46*, 467.
2. Sheldrick, G. M (**1997**). SHELXL 97, University of Göttingen, Germany.
3. Sheldrick, G. M (**2003**). CELL_NOW, University of Göttingen, Germany.
4. Bruker (**2005**). SAINT, Bruker-AXS Inc., Madison, Wisconsin, USA.
5. Sheldrick, G. M (**2002**). TWINABS, University of Göttingen, Germany.

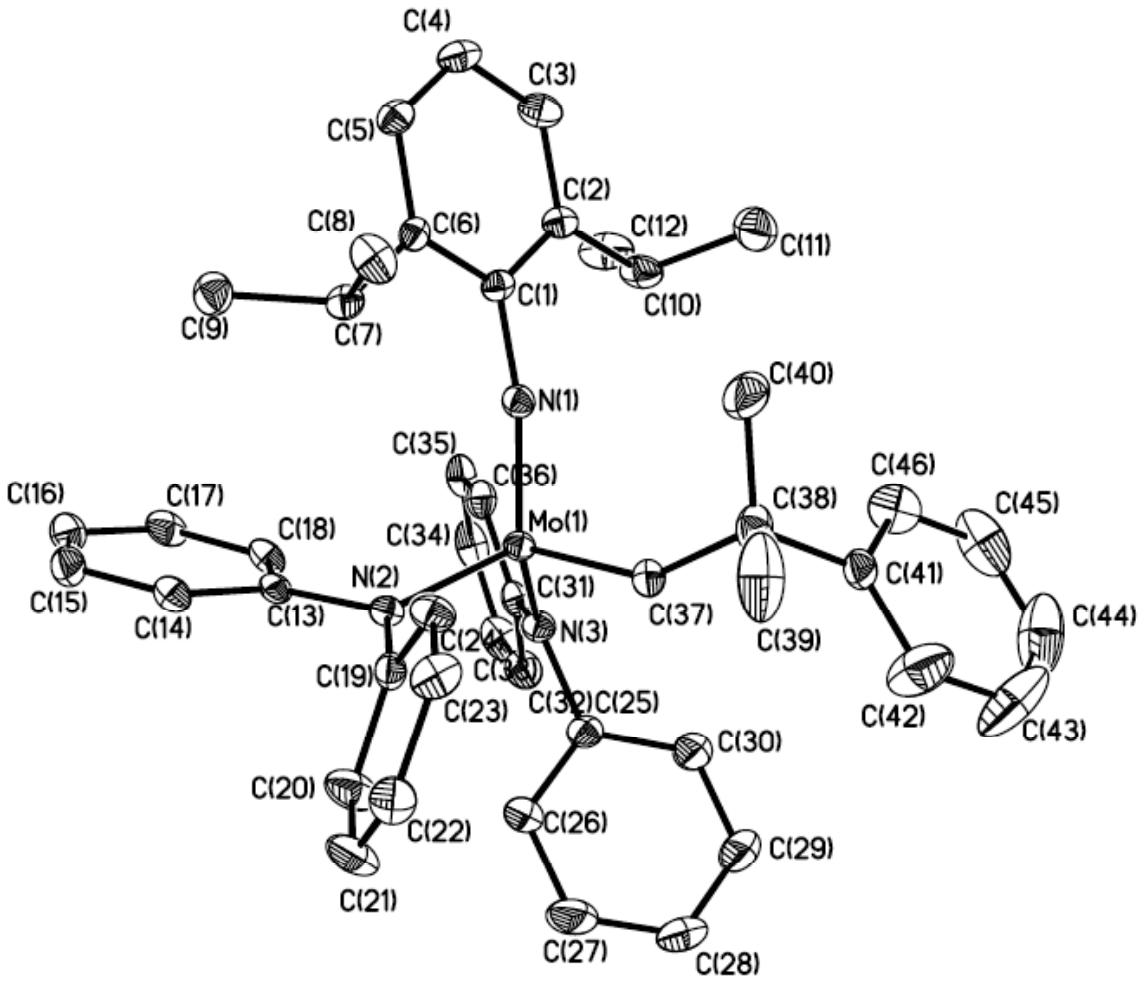

Figure 1. Fully labeled thermal ellipsoid drawing (50%) of Mo(NAr)($CHCMe_2Ph$)(NPh_2)$_2$.

Table 1. Crystal data and structure refinement for $Mo(NAr)(CHCMe_2Ph)(NPh_2)_2$.

Empirical formula	$C_{46}H_{49}N_3Mo$	
Formula weight	739.82	
Temperature	100(2) K	
Wavelength	0.71073 Å	
Crystal system	Triclinic	
Space group	$P\bar{1}$	
Unit cell dimensions	a = 9.279(3) Å	α = 79.848(6) °
	b = 20.158(7) Å	β = 89.997(6) °
	c = 20.739(8) Å	γ = 83.507(6) °
Volume	3793(2) $Å^3$	
Z	4	
Density (calculated)	1.296 Mg/m^3	
Absorption coefficient	0.382 mm^{-1}	
F(000)	1552	
Crystal size	0.20 x 0.15 x 0.05 mm^3	
Theta range for data collection	1.00 to 28.49°	
Index ranges	$-12 \le h \le 12$, $-26 \le k \le 27$, $0 \le l \le 27$	
Reflections collected	23612	
Independent reflections	23612 [non-merohedral twin]	
Completeness to theta = 28.49°	97.2 %	
Absorption correction	Semi-empirical from equivalents	
Max. and min. transmission	0.9812 and 0.9276	
Refinement method	Full-matrix least-squares on F^2	
Data / restraints / parameters	23612 / 0 / 914	
Goodness-of-fit on F^2	1.020	
Final R indices [I>2sigma(I)]	R1 = 0.0486, wR2 = 0.1032	
R indices (all data)	R1 = 0.0726, wR2 = 0.1119	
Largest diff. peak and hole	0.946 and -0.517 e. $Å^{-3}$	

Table 2. Atomic coordinates (x 10^4) and equivalent isotropic displacement parameters ($Å^2$x 10^3) for Mo(NAr)($CHCMe_2Ph$)(NPh_2)$_2$. U(eq) is defined as one third of the trace of the orthogonalized U^{ij} tensor.

	x	y	z	U(eq)
Mo(1)	6199(1)	7517(1)	1290(1)	13(1)
N(1)	7363(3)	6793(1)	1601(1)	16(1)
N(2)	4913(3)	7409(1)	545(1)	15(1)
N(3)	5034(3)	7959(1)	1948(1)	16(1)
C(1)	8162(3)	6150(2)	1769(2)	14(1)
C(2)	8995(3)	6000(2)	2358(2)	16(1)
C(3)	9790(4)	5365(2)	2511(2)	22(1)
C(4)	9758(4)	4879(2)	2110(2)	22(1)
C(5)	8933(3)	5034(2)	1538(2)	18(1)
C(6)	8146(3)	5670(2)	1344(2)	15(1)
C(7)	7338(4)	5832(2)	689(2)	17(1)
C(8)	8419(4)	5833(2)	123(2)	25(1)
C(9)	6213(4)	5337(2)	642(2)	24(1)
C(10)	9024(4)	6491(2)	2835(2)	23(1)
C(11)	10534(4)	6700(2)	2919(2)	35(1)
C(12)	8462(4)	6176(2)	3505(2)	32(1)
C(13)	3948(3)	6901(2)	655(2)	15(1)
C(14)	3386(3)	6619(2)	152(2)	18(1)
C(15)	2491(4)	6106(2)	295(2)	23(1)
C(16)	2149(4)	5855(2)	932(2)	24(1)
C(17)	2692(3)	6130(2)	1431(2)	22(1)
C(18)	3560(3)	6654(2)	1299(2)	19(1)
C(19)	5004(3)	7738(2)	-123(2)	16(1)
C(20)	3815(4)	8164(2)	-432(2)	29(1)
C(21)	3897(4)	8472(2)	-1077(2)	30(1)
C(22)	5129(4)	8362(2)	-1429(2)	24(1)
C(23)	6316(4)	7953(2)	-1124(2)	23(1)
C(24)	6250(4)	7639(2)	-474(2)	20(1)
C(25)	4657(4)	8665(2)	1697(2)	19(1)
C(26)	3635(4)	8864(2)	1193(2)	29(1)

C(27)	3369(5)	9541(2)	899(2)	48(1)
C(28)	4096(5)	10025(2)	1117(2)	49(1)
C(29)	5068(5)	9832(2)	1634(2)	42(1)
C(30)	5361(4)	9160(2)	1922(2)	31(1)
C(31)	4548(3)	7702(2)	2575(2)	17(1)
C(32)	3586(4)	8095(2)	2917(2)	25(1)
C(33)	3134(4)	7829(2)	3531(2)	30(1)
C(34)	3604(4)	7173(2)	3828(2)	29(1)
C(35)	4540(4)	6776(2)	3493(2)	24(1)
C(36)	5002(4)	7033(2)	2873(2)	20(1)
C(37)	7444(3)	8139(2)	903(2)	19(1)
C(38)	9001(4)	8267(2)	760(2)	25(1)
C(39)	9133(5)	8523(2)	14(2)	49(1)
C(40)	10017(4)	7614(2)	944(2)	45(1)
C(41)	9353(4)	8817(2)	1153(2)	22(1)
C(42)	9157(5)	9496(2)	885(2)	49(1)
C(43)	9493(7)	9982(2)	1261(3)	70(2)
C(44)	9992(6)	9791(3)	1885(3)	60(2)
C(45)	10167(5)	9131(3)	2150(2)	45(1)
C(46)	9842(4)	8647(2)	1793(2)	33(1)
Mo(2)	2437(1)	2462(1)	3716(1)	13(1)
N(4)	3243(3)	3190(1)	3403(1)	14(1)
N(5)	1571(3)	1984(1)	3062(1)	17(1)
N(6)	1076(3)	2577(1)	4455(1)	16(1)
C(47)	3750(3)	3824(2)	3222(2)	14(1)
C(48)	4502(3)	3967(2)	2626(2)	18(1)
C(49)	4991(4)	4606(2)	2465(2)	20(1)
C(50)	4719(4)	5093(2)	2853(2)	20(1)
C(51)	3969(4)	4948(2)	3429(2)	20(1)
C(52)	3493(3)	4316(2)	3629(2)	15(1)
C(53)	2758(3)	4172(2)	4287(2)	15(1)
C(54)	1400(3)	4663(2)	4330(2)	22(1)
C(55)	3830(4)	4180(2)	4846(2)	23(1)
C(56)	4771(4)	3464(2)	2164(2)	22(1)
C(57)	4069(4)	3766(2)	1493(2)	31(1)
C(58)	6389(4)	3254(2)	2092(2)	33(1)

C(59)	946(3)	2233(2)	2436(2)	17(1)
C(60)	1012(3)	2912(2)	2142(2)	17(1)
C(61)	406(3)	3161(2)	1524(2)	22(1)
C(62)	-286(4)	2750(2)	1183(2)	25(1)
C(63)	-369(4)	2086(2)	1474(2)	27(1)
C(64)	223(4)	1824(2)	2090(2)	23(1)
C(65)	1592(4)	1268(2)	3303(2)	23(1)
C(66)	601(4)	1040(2)	3763(2)	36(1)
C(67)	687(6)	351(2)	4022(2)	61(2)
C(68)	1756(7)	-95(2)	3838(3)	69(2)
C(69)	2716(6)	129(2)	3381(3)	65(2)
C(70)	2648(5)	808(2)	3114(2)	40(1)
C(71)	1344(3)	2262(2)	5125(2)	16(1)
C(72)	2507(3)	2405(2)	5480(2)	20(1)
C(73)	2736(4)	2113(2)	6130(2)	21(1)
C(74)	1817(4)	1672(2)	6439(2)	23(1)
C(75)	673(4)	1513(2)	6083(2)	28(1)
C(76)	430(4)	1806(2)	5435(2)	23(1)
C(77)	-120(3)	3083(2)	4335(2)	16(1)
C(78)	-626(3)	3322(2)	3689(2)	19(1)
C(79)	-1729(4)	3846(2)	3547(2)	23(1)
C(80)	-2391(4)	4139(2)	4047(2)	23(1)
C(81)	-1930(4)	3899(2)	4684(2)	21(1)
C(82)	-798(3)	3379(2)	4833(2)	18(1)
C(83)	3974(3)	1862(2)	4136(1)	15(1)
C(84)	5590(3)	1746(2)	4290(2)	22(1)
C(85)	6283(4)	2413(2)	4086(2)	31(1)
C(86)	5825(4)	1515(2)	5036(2)	34(1)
C(87)	6198(3)	1190(2)	3912(2)	22(1)
C(88)	6320(4)	505(2)	4198(2)	39(1)
C(89)	6817(5)	1(2)	3850(2)	43(1)
C(90)	7214(4)	169(2)	3206(2)	35(1)
C(91)	7115(4)	840(2)	2920(2)	34(1)
C(92)	6595(4)	1344(2)	3267(2)	30(1)

Table 3. Bond lengths [Å] and angles [°] for $Mo(NAr)(CHCMe_2Ph)(NPh_2)_2$.

Mo(1)-N(1)	1.739(3)	C(11)-H(11C)	0.9800
Mo(1)-C(37)	1.877(3)	C(12)-H(12A)	0.9800
Mo(1)-N(3)	2.007(3)	C(12)-H(12B)	0.9800
Mo(1)-N(2)	2.009(3)	C(12)-H(12C)	0.9800
N(1)-C(1)	1.406(4)	C(13)-C(14)	1.400(4)
N(2)-C(13)	1.424(4)	C(13)-C(18)	1.403(4)
N(2)-C(19)	1.433(4)	C(14)-C(15)	1.390(4)
N(3)-C(31)	1.407(4)	C(14)-H(14)	0.9500
N(3)-C(25)	1.431(4)	C(15)-C(16)	1.381(5)
C(1)-C(2)	1.414(4)	C(15)-H(15)	0.9500
C(1)-C(6)	1.419(4)	C(16)-C(17)	1.377(5)
C(2)-C(3)	1.388(4)	C(16)-H(16)	0.9500
C(2)-C(10)	1.521(4)	C(17)-C(18)	1.388(4)
C(3)-C(4)	1.395(4)	C(17)-H(17)	0.9500
C(3)-H(3)	0.9500	C(18)-H(18)	0.9500
C(4)-C(5)	1.380(5)	C(19)-C(24)	1.381(4)
C(4)-H(4)	0.9500	C(19)-C(20)	1.399(4)
C(5)-C(6)	1.394(4)	C(20)-C(21)	1.377(5)
C(5)-H(5)	0.9500	C(20)-H(20)	0.9500
C(6)-C(7)	1.517(4)	C(21)-C(22)	1.375(5)
C(7)-C(9)	1.538(4)	C(21)-H(21)	0.9500
C(7)-C(8)	1.544(4)	C(22)-C(23)	1.380(5)
C(7)-H(7)	1.0000	C(22)-H(22)	0.9500
C(8)-H(8A)	0.9800	C(23)-C(24)	1.389(4)
C(8)-H(8B)	0.9800	C(23)-H(23)	0.9500
C(8)-H(8C)	0.9800	C(24)-H(24)	0.9500
C(9)-H(9A)	0.9800	C(25)-C(26)	1.384(5)
C(9)-H(9B)	0.9800	C(25)-C(30)	1.397(5)
C(9)-H(9C)	0.9800	C(26)-C(27)	1.388(5)
C(10)-C(11)	1.526(5)	C(26)-H(26)	0.9500
C(10)-C(12)	1.539(5)	C(27)-C(28)	1.383(6)
C(10)-H(10)	1.0000	C(27)-H(27)	0.9500
C(11)-H(11A)	0.9800	C(28)-C(29)	1.373(6)
C(11)-H(11B)	0.9800	C(28)-H(28)	0.9500

C(29)-C(30)	1.379(5)	Mo(2)-N(4)	1.745(2)
C(29)-H(29)	0.9500	Mo(2)-C(83)	1.870(3)
C(30)-H(30)	0.9500	Mo(2)-N(6)	2.013(2)
C(31)-C(36)	1.399(4)	Mo(2)-N(5)	2.014(3)
C(31)-C(32)	1.402(4)	N(4)-C(47)	1.401(4)
C(32)-C(33)	1.377(5)	N(5)-C(59)	1.407(4)
C(32)-H(32)	0.9500	N(5)-C(65)	1.440(4)
C(33)-C(34)	1.380(5)	N(6)-C(77)	1.410(4)
C(33)-H(33)	0.9500	N(6)-C(71)	1.432(4)
C(34)-C(35)	1.384(5)	C(47)-C(52)	1.413(4)
C(34)-H(34)	0.9500	C(47)-C(48)	1.421(4)
C(35)-C(36)	1.386(4)	C(48)-C(49)	1.398(4)
C(35)-H(35)	0.9500	C(48)-C(56)	1.514(4)
C(36)-H(36)	0.9500	C(49)-C(50)	1.378(4)
C(37)-C(38)	1.516(4)	C(49)-H(49)	0.9500
C(37)-H(37)	0.9500	C(50)-C(51)	1.385(4)
C(38)-C(40)	1.520(5)	C(50)-H(50)	0.9500
C(38)-C(41)	1.548(5)	C(51)-C(52)	1.389(4)
C(38)-C(39)	1.552(5)	C(51)-H(51)	0.9500
C(39)-H(39A)	0.9800	C(52)-C(53)	1.522(4)
C(39)-H(39B)	0.9800	C(53)-C(54)	1.525(4)
C(39)-H(39C)	0.9800	C(53)-C(55)	1.532(4)
C(40)-H(40A)	0.9800	C(53)-H(53)	1.0000
C(40)-H(40B)	0.9800	C(54)-H(54A)	0.9800
C(40)-H(40C)	0.9800	C(54)-H(54B)	0.9800
C(41)-C(46)	1.376(5)	C(54)-H(54C)	0.9800
C(41)-C(42)	1.376(5)	C(55)-H(55A)	0.9800
C(42)-C(43)	1.416(6)	C(55)-H(55B)	0.9800
C(42)-H(42)	0.9500	C(55)-H(55C)	0.9800
C(43)-C(44)	1.350(7)	C(56)-C(58)	1.528(5)
C(43)-H(43)	0.9500	C(56)-C(57)	1.531(5)
C(44)-C(45)	1.340(7)	C(56)-H(56)	1.0000
C(44)-H(44)	0.9500	C(57)-H(57A)	0.9800
C(45)-C(46)	1.382(6)	C(57)-H(57B)	0.9800
C(45)-H(45)	0.9500	C(57)-H(57C)	0.9800
C(46)-H(46)	0.9500	C(58)-H(58A)	0.9800

C(58)-H(58B)	0.9800	C(77)-C(78)	1.403(4)
C(58)-H(58C)	0.9800	C(78)-C(79)	1.377(4)
C(59)-C(60)	1.405(4)	C(78)-H(78)	0.9500
C(59)-C(64)	1.406(4)	C(79)-C(80)	1.391(5)
C(60)-C(61)	1.386(4)	C(79)-H(79)	0.9500
C(60)-H(60)	0.9500	C(80)-C(81)	1.376(5)
C(61)-C(62)	1.387(5)	C(80)-H(80)	0.9500
C(61)-H(61)	0.9500	C(81)-C(82)	1.391(4)
C(62)-C(63)	1.380(5)	C(81)-H(81)	0.9500
C(62)-H(62)	0.9500	C(82)-H(82)	0.9500
C(63)-C(64)	1.383(5)	C(83)-C(84)	1.516(4)
C(63)-H(63)	0.9500	C(83)-H(83)	0.9500
C(64)-H(64)	0.9500	C(84)-C(87)	1.535(5)
C(65)-C(70)	1.377(5)	C(84)-C(86)	1.543(5)
C(65)-C(66)	1.381(5)	C(84)-C(85)	1.548(5)
C(66)-C(67)	1.391(6)	C(85)-H(85A)	0.9800
C(66)-H(66)	0.9500	C(85)-H(85B)	0.9800
C(67)-C(68)	1.362(8)	C(85)-H(85C)	0.9800
C(67)-H(67)	0.9500	C(86)-H(86A)	0.9800
C(68)-C(69)	1.354(8)	C(86)-H(86B)	0.9800
C(68)-H(68)	0.9500	C(86)-H(86C)	0.9800
C(69)-C(70)	1.378(6)	C(87)-C(92)	1.379(5)
C(69)-H(69)	0.9500	C(87)-C(88)	1.395(5)
C(70)-H(70)	0.9500	C(88)-C(89)	1.385(5)
C(71)-C(72)	1.390(4)	C(88)-H(88)	0.9500
C(71)-C(76)	1.395(4)	C(89)-C(90)	1.379(6)
C(72)-C(73)	1.380(4)	C(89)-H(89)	0.9500
C(72)-H(72)	0.9500	C(90)-C(91)	1.370(5)
C(73)-C(74)	1.378(4)	C(90)-H(90)	0.9500
C(73)-H(73)	0.9500	C(91)-C(92)	1.389(5)
C(74)-C(75)	1.391(5)	C(91)-H(91)	0.9500
C(74)-H(74)	0.9500	C(92)-H(92)	0.9500
C(75)-C(76)	1.377(4)	N(1)-Mo(1)-C(37)	103.98(13)
C(75)-H(75)	0.9500	N(1)-Mo(1)-N(3)	116.34(11)
C(76)-H(76)	0.9500	C(37)-Mo(1)-N(3)	106.86(12)
C(77)-C(82)	1.398(4)	N(1)-Mo(1)-N(2)	114.03(11)

C(37)-Mo(1)-N(2)	104.07(12)	C(7)-C(8)-H(8C)	109.5
N(3)-Mo(1)-N(2)	110.32(10)	H(8A)-C(8)-H(8C)	109.5
C(1)-N(1)-Mo(1)	169.0(2)	H(8B)-C(8)-H(8C)	109.5
C(13)-N(2)-C(19)	115.2(2)	C(7)-C(9)-H(9A)	109.5
C(13)-N(2)-Mo(1)	118.61(19)	C(7)-C(9)-H(9B)	109.5
C(19)-N(2)-Mo(1)	125.61(19)	H(9A)-C(9)-H(9B)	109.5
C(31)-N(3)-C(25)	117.6(3)	C(7)-C(9)-H(9C)	109.5
C(31)-N(3)-Mo(1)	132.3(2)	H(9A)-C(9)-H(9C)	109.5
C(25)-N(3)-Mo(1)	110.1(2)	H(9B)-C(9)-H(9C)	109.5
N(1)-C(1)-C(2)	118.6(3)	C(2)-C(10)-C(11)	112.5(3)
N(1)-C(1)-C(6)	120.1(3)	C(2)-C(10)-C(12)	110.1(3)
C(2)-C(1)-C(6)	121.2(3)	C(11)-C(10)-C(12)	109.9(3)
C(3)-C(2)-C(1)	117.8(3)	C(2)-C(10)-H(10)	108.1
C(3)-C(2)-C(10)	119.0(3)	C(11)-C(10)-H(10)	108.1
C(1)-C(2)-C(10)	123.2(3)	C(12)-C(10)-H(10)	108.1
C(2)-C(3)-C(4)	121.9(3)	C(10)-C(11)-H(11A)	109.5
C(2)-C(3)-H(3)	119.0	C(10)-C(11)-H(11B)	109.5
C(4)-C(3)-H(3)	119.0	H(11A)-C(11)-H(11B)	109.5
C(5)-C(4)-C(3)	119.3(3)	C(10)-C(11)-H(11C)	109.5
C(5)-C(4)-H(4)	120.3	H(11A)-C(11)-H(11C)	109.5
C(3)-C(4)-H(4)	120.3	H(11B)-C(11)-H(11C)	109.5
C(4)-C(5)-C(6)	121.7(3)	C(10)-C(12)-H(12A)	109.5
C(4)-C(5)-H(5)	119.1	C(10)-C(12)-H(12B)	109.5
C(6)-C(5)-H(5)	119.1	H(12A)-C(12)-H(12B)	109.5
C(5)-C(6)-C(1)	117.9(3)	C(10)-C(12)-H(12C)	109.5
C(5)-C(6)-C(7)	119.7(3)	H(12A)-C(12)-H(12C)	109.5
C(1)-C(6)-C(7)	122.3(3)	H(12B)-C(12)-H(12C)	109.5
C(6)-C(7)-C(9)	111.8(3)	C(14)-C(13)-C(18)	117.7(3)
C(6)-C(7)-C(8)	110.3(3)	C(14)-C(13)-N(2)	123.3(3)
C(9)-C(7)-C(8)	110.7(3)	C(18)-C(13)-N(2)	119.0(3)
C(6)-C(7)-H(7)	107.9	C(15)-C(14)-C(13)	120.4(3)
C(9)-C(7)-H(7)	107.9	C(15)-C(14)-H(14)	119.8
C(8)-C(7)-H(7)	107.9	C(13)-C(14)-H(14)	119.8
C(7)-C(8)-H(8A)	109.5	C(16)-C(15)-C(14)	121.3(3)
C(7)-C(8)-H(8B)	109.5	C(16)-C(15)-H(15)	119.3
H(8A)-C(8)-H(8B)	109.5	C(14)-C(15)-H(15)	119.3

C(17)-C(16)-C(15)	118.7(3)	C(29)-C(28)-C(27)	119.6(4)
C(17)-C(16)-H(16)	120.7	C(29)-C(28)-H(28)	120.2
C(15)-C(16)-H(16)	120.7	C(27)-C(28)-H(28)	120.2
C(16)-C(17)-C(18)	121.1(3)	C(28)-C(29)-C(30)	120.6(4)
C(16)-C(17)-H(17)	119.5	C(28)-C(29)-H(29)	119.7
C(18)-C(17)-H(17)	119.5	C(30)-C(29)-H(29)	119.7
C(17)-C(18)-C(13)	120.8(3)	C(29)-C(30)-C(25)	120.3(4)
C(17)-C(18)-H(18)	119.6	C(29)-C(30)-H(30)	119.9
C(13)-C(18)-H(18)	119.6	C(25)-C(30)-H(30)	119.9
C(24)-C(19)-C(20)	118.8(3)	C(36)-C(31)-C(32)	117.9(3)
C(24)-C(19)-N(2)	121.1(3)	C(36)-C(31)-N(3)	120.2(3)
C(20)-C(19)-N(2)	120.1(3)	C(32)-C(31)-N(3)	122.0(3)
C(21)-C(20)-C(19)	120.1(3)	C(33)-C(32)-C(31)	120.5(3)
C(21)-C(20)-H(20)	120.0	C(33)-C(32)-H(32)	119.8
C(19)-C(20)-H(20)	120.0	C(31)-C(32)-H(32)	119.8
C(22)-C(21)-C(20)	121.1(3)	C(32)-C(33)-C(34)	121.5(3)
C(22)-C(21)-H(21)	119.5	C(32)-C(33)-H(33)	119.2
C(20)-C(21)-H(21)	119.5	C(34)-C(33)-H(33)	119.2
C(21)-C(22)-C(23)	119.2(3)	C(33)-C(34)-C(35)	118.6(3)
C(21)-C(22)-H(22)	120.4	C(33)-C(34)-H(34)	120.7
C(23)-C(22)-H(22)	120.4	C(35)-C(34)-H(34)	120.7
C(22)-C(23)-C(24)	120.4(3)	C(34)-C(35)-C(36)	120.8(3)
C(22)-C(23)-H(23)	119.8	C(34)-C(35)-H(35)	119.6
C(24)-C(23)-H(23)	119.8	C(36)-C(35)-H(35)	119.6
C(19)-C(24)-C(23)	120.5(3)	C(35)-C(36)-C(31)	120.7(3)
C(19)-C(24)-H(24)	119.7	C(35)-C(36)-H(36)	119.6
C(23)-C(24)-H(24)	119.7	C(31)-C(36)-H(36)	119.6
C(26)-C(25)-C(30)	118.9(3)	C(38)-C(37)-Mo(1)	146.2(3)
C(26)-C(25)-N(3)	119.7(3)	C(38)-C(37)-H(37)	106.9
C(30)-C(25)-N(3)	121.3(3)	Mo(1)-C(37)-H(37)	106.9
C(25)-C(26)-C(27)	120.2(3)	C(37)-C(38)-C(40)	110.5(3)
C(25)-C(26)-H(26)	119.9	C(37)-C(38)-C(41)	107.0(3)
C(27)-C(26)-H(26)	119.9	C(40)-C(38)-C(41)	112.2(3)
C(28)-C(27)-C(26)	120.3(4)	C(37)-C(38)-C(39)	108.8(3)
C(28)-C(27)-H(27)	119.9	C(40)-C(38)-C(39)	107.8(3)
C(26)-C(27)-H(27)	119.9	C(41)-C(38)-C(39)	110.5(3)

C(38)-C(39)-H(39A)	109.5	C(47)-N(4)-Mo(2)	170.8(2)
C(38)-C(39)-H(39B)	109.5	C(59)-N(5)-C(65)	116.8(3)
H(39A)-C(39)-H(39B)	109.5	C(59)-N(5)-Mo(2)	131.2(2)
C(38)-C(39)-H(39C)	109.5	C(65)-N(5)-Mo(2)	112.0(2)
H(39A)-C(39)-H(39C)	109.5	C(77)-N(6)-C(71)	116.0(2)
H(39B)-C(39)-H(39C)	109.5	C(77)-N(6)-Mo(2)	118.26(19)
C(38)-C(40)-H(40A)	109.5	C(71)-N(6)-Mo(2)	124.9(2)
C(38)-C(40)-H(40B)	109.5	N(4)-C(47)-C(52)	119.7(3)
H(40A)-C(40)-H(40B)	109.5	N(4)-C(47)-C(48)	119.5(3)
C(38)-C(40)-H(40C)	109.5	C(52)-C(47)-C(48)	120.7(3)
H(40A)-C(40)-H(40C)	109.5	C(49)-C(48)-C(47)	117.6(3)
H(40B)-C(40)-H(40C)	109.5	C(49)-C(48)-C(56)	119.7(3)
C(46)-C(41)-C(42)	116.9(4)	C(47)-C(48)-C(56)	122.8(3)
C(46)-C(41)-C(38)	121.3(3)	C(50)-C(49)-C(48)	122.0(3)
C(42)-C(41)-C(38)	121.8(3)	C(50)-C(49)-H(49)	119.0
C(41)-C(42)-C(43)	120.0(4)	C(48)-C(49)-H(49)	119.0
C(41)-C(42)-H(42)	120.0	C(49)-C(50)-C(51)	119.8(3)
C(43)-C(42)-H(42)	120.0	C(49)-C(50)-H(50)	120.1
C(44)-C(43)-C(42)	121.0(5)	C(51)-C(50)-H(50)	120.1
C(44)-C(43)-H(43)	119.5	C(50)-C(51)-C(52)	121.3(3)
C(42)-C(43)-H(43)	119.5	C(50)-C(51)-H(51)	119.4
C(45)-C(44)-C(43)	119.2(4)	C(52)-C(51)-H(51)	119.4
C(45)-C(44)-H(44)	120.4	C(51)-C(52)-C(47)	118.6(3)
C(43)-C(44)-H(44)	120.4	C(51)-C(52)-C(53)	118.9(3)
C(44)-C(45)-C(46)	120.8(4)	C(47)-C(52)-C(53)	122.4(3)
C(44)-C(45)-H(45)	119.6	C(52)-C(53)-C(54)	112.6(3)
C(46)-C(45)-H(45)	119.6	C(52)-C(53)-C(55)	110.4(3)
C(41)-C(46)-C(45)	122.1(4)	C(54)-C(53)-C(55)	110.6(3)
C(41)-C(46)-H(46)	118.9	C(52)-C(53)-H(53)	107.7
C(45)-C(46)-H(46)	118.9	C(54)-C(53)-H(53)	107.7
N(4)-Mo(2)-C(83)	103.76(13)	C(55)-C(53)-H(53)	107.7
N(4)-Mo(2)-N(6)	113.85(11)	C(53)-C(54)-H(54A)	109.5
C(83)-Mo(2)-N(6)	102.71(12)	C(53)-C(54)-H(54B)	109.5
N(4)-Mo(2)-N(5)	116.87(11)	H(54A)-C(54)-H(54B)	109.5
C(83)-Mo(2)-N(5)	106.42(12)	C(53)-C(54)-H(54C)	109.5
N(6)-Mo(2)-N(5)	111.55(11)	H(54A)-C(54)-H(54C)	109.5

H(54B)-C(54)-H(54C)	109.5	C(61)-C(62)-H(62)	120.7
C(53)-C(55)-H(55A)	109.5	C(62)-C(63)-C(64)	121.6(3)
C(53)-C(55)-H(55B)	109.5	C(62)-C(63)-H(63)	119.2
H(55A)-C(55)-H(55B)	109.5	C(64)-C(63)-H(63)	119.2
C(53)-C(55)-H(55C)	109.5	C(63)-C(64)-C(59)	120.3(3)
H(55A)-C(55)-H(55C)	109.5	C(63)-C(64)-H(64)	119.9
H(55B)-C(55)-H(55C)	109.5	C(59)-C(64)-H(64)	119.9
C(48)-C(56)-C(58)	111.8(3)	C(70)-C(65)-C(66)	119.3(4)
C(48)-C(56)-C(57)	109.9(3)	C(70)-C(65)-N(5)	120.8(3)
C(58)-C(56)-C(57)	110.1(3)	C(66)-C(65)-N(5)	119.8(3)
C(48)-C(56)-H(56)	108.3	C(65)-C(66)-C(67)	119.2(4)
C(58)-C(56)-H(56)	108.3	C(65)-C(66)-H(66)	120.4
C(57)-C(56)-H(56)	108.3	C(67)-C(66)-H(66)	120.4
C(56)-C(57)-H(57A)	109.5	C(68)-C(67)-C(66)	120.7(5)
C(56)-C(57)-H(57B)	109.5	C(68)-C(67)-H(67)	119.6
H(57A)-C(57)-H(57B)	109.5	C(66)-C(67)-H(67)	119.6
C(56)-C(57)-H(57C)	109.5	C(69)-C(68)-C(67)	119.9(4)
H(57A)-C(57)-H(57C)	109.5	C(69)-C(68)-H(68)	120.1
H(57B)-C(57)-H(57C)	109.5	C(67)-C(68)-H(68)	120.1
C(56)-C(58)-H(58A)	109.5	C(68)-C(69)-C(70)	120.6(5)
C(56)-C(58)-H(58B)	109.5	C(68)-C(69)-H(69)	119.7
H(58A)-C(58)-H(58B)	109.5	C(70)-C(69)-H(69)	119.7
C(56)-C(58)-H(58C)	109.5	C(65)-C(70)-C(69)	120.3(5)
H(58A)-C(58)-H(58C)	109.5	C(65)-C(70)-H(70)	119.8
H(58B)-C(58)-H(58C)	109.5	C(69)-C(70)-H(70)	119.8
C(60)-C(59)-C(64)	118.0(3)	C(72)-C(71)-C(76)	118.8(3)
C(60)-C(59)-N(5)	120.0(3)	C(72)-C(71)-N(6)	121.0(3)
C(64)-C(59)-N(5)	122.0(3)	C(76)-C(71)-N(6)	120.2(3)
C(61)-C(60)-C(59)	120.4(3)	C(73)-C(72)-C(71)	120.7(3)
C(61)-C(60)-H(60)	119.8	C(73)-C(72)-H(72)	119.6
C(59)-C(60)-H(60)	119.8	C(71)-C(72)-H(72)	119.6
C(60)-C(61)-C(62)	121.1(3)	C(74)-C(73)-C(72)	120.4(3)
C(60)-C(61)-H(61)	119.4	C(74)-C(73)-H(73)	119.8
C(62)-C(61)-H(61)	119.4	C(72)-C(73)-H(73)	119.8
C(63)-C(62)-C(61)	118.5(3)	C(73)-C(74)-C(75)	119.3(3)
C(63)-C(62)-H(62)	120.7	C(73)-C(74)-H(74)	120.4

C(75)-C(74)-H(74)	120.4
C(76)-C(75)-C(74)	120.7(3)
C(76)-C(75)-H(75)	119.6
C(74)-C(75)-H(75)	119.6
C(75)-C(76)-C(71)	120.1(3)
C(75)-C(76)-H(76)	119.9
C(71)-C(76)-H(76)	119.9
C(82)-C(77)-C(78)	118.1(3)
C(82)-C(77)-N(6)	122.5(3)
C(78)-C(77)-N(6)	119.4(3)
C(79)-C(78)-C(77)	121.1(3)
C(79)-C(78)-H(78)	119.5
C(77)-C(78)-H(78)	119.5
C(78)-C(79)-C(80)	120.4(3)
C(78)-C(79)-H(79)	119.8
C(80)-C(79)-H(79)	119.8
C(81)-C(80)-C(79)	119.1(3)
C(81)-C(80)-H(80)	120.4
C(79)-C(80)-H(80)	120.4
C(80)-C(81)-C(82)	121.1(3)
C(80)-C(81)-H(81)	119.5
C(82)-C(81)-H(81)	119.5
C(81)-C(82)-C(77)	120.2(3)
C(81)-C(82)-H(82)	119.9
C(77)-C(82)-H(82)	119.9
C(84)-C(83)-Mo(2)	146.1(2)
C(84)-C(83)-H(83)	107.0
Mo(2)-C(83)-H(83)	107.0
C(83)-C(84)-C(87)	105.5(3)
C(83)-C(84)-C(86)	108.8(3)
C(87)-C(84)-C(86)	111.5(3)
C(83)-C(84)-C(85)	110.4(3)
C(87)-C(84)-C(85)	112.5(3)
C(86)-C(84)-C(85)	108.1(3)
C(84)-C(85)-H(85A)	109.5
C(84)-C(85)-H(85B)	109.5
H(85A)-C(85)-H(85B)	109.5
C(84)-C(85)-H(85C)	109.5
H(85A)-C(85)-H(85C)	109.5
H(85B)-C(85)-H(85C)	109.5
C(84)-C(86)-H(86A)	109.5
C(84)-C(86)-H(86B)	109.5
H(86A)-C(86)-H(86B)	109.5
C(84)-C(86)-H(86C)	109.5
H(86A)-C(86)-H(86C)	109.5
H(86B)-C(86)-H(86C)	109.5
C(92)-C(87)-C(88)	117.0(3)
C(92)-C(87)-C(84)	121.5(3)
C(88)-C(87)-C(84)	121.5(3)
C(89)-C(88)-C(87)	121.6(4)
C(89)-C(88)-H(88)	119.2
C(87)-C(88)-H(88)	119.2
C(90)-C(89)-C(88)	120.2(4)
C(90)-C(89)-H(89)	119.9
C(88)-C(89)-H(89)	119.9
C(91)-C(90)-C(89)	118.9(4)
C(91)-C(90)-H(90)	120.5
C(89)-C(90)-H(90)	120.5
C(90)-C(91)-C(92)	120.7(4)
C(90)-C(91)-H(91)	119.6
C(92)-C(91)-H(91)	119.6
C(87)-C(92)-C(91)	121.5(4)
C(87)-C(92)-H(92)	119.3
C(91)-C(92)-H(92)	119.3

Table 4. Anisotropic displacement parameters ($Å^2 x\ 10^3$) for $Mo(NAr)(CHCMe_2Ph)(NPh_2)_2$. The anisotropic displacement factor exponent takes the form: $-2\pi^2[\ h^2\ a^{*2}U^{11} + ...\ + 2\ h\ k\ a^*\ b^*\ U^{12}\ ]$

	U^{11}	U^{22}	U^{33}	U^{23}	U^{13}	U^{12}
Mo(1)	13(1)	14(1)	13(1)	-2(1)	1(1)	-1(1)
N(1)	17(1)	17(1)	15(1)	-2(1)	-1(1)	-2(1)
N(2)	13(1)	15(1)	14(1)	1(1)	2(1)	-1(1)
N(3)	16(1)	17(1)	17(1)	-4(1)	1(1)	0(1)
C(1)	15(2)	13(2)	14(2)	0(1)	4(1)	-2(1)
C(2)	17(2)	17(2)	14(2)	-3(1)	4(1)	0(1)
C(3)	23(2)	25(2)	16(2)	1(1)	-1(1)	3(2)
C(4)	24(2)	15(2)	24(2)	0(1)	4(1)	3(1)
C(5)	20(2)	17(2)	17(2)	-6(1)	5(1)	-2(1)
C(6)	14(2)	15(2)	17(2)	-5(1)	5(1)	-4(1)
C(7)	19(2)	17(2)	14(2)	-5(1)	2(1)	0(1)
C(8)	20(2)	36(2)	19(2)	-6(2)	3(1)	-4(2)
C(9)	23(2)	26(2)	24(2)	-10(2)	1(2)	-3(2)
C(10)	27(2)	24(2)	17(2)	-4(1)	-7(1)	6(2)
C(11)	32(2)	36(2)	42(2)	-18(2)	-9(2)	0(2)
C(12)	42(2)	33(2)	18(2)	-7(2)	-1(2)	12(2)
C(13)	9(1)	16(2)	20(2)	-3(1)	1(1)	0(1)
C(14)	15(2)	22(2)	17(2)	-4(1)	0(1)	0(1)
C(15)	17(2)	23(2)	30(2)	-8(2)	0(2)	-4(1)
C(16)	14(2)	24(2)	35(2)	-3(2)	3(2)	-6(1)
C(17)	12(2)	26(2)	26(2)	3(2)	5(1)	-2(1)
C(18)	12(2)	26(2)	18(2)	-4(1)	0(1)	0(1)
C(19)	16(2)	16(2)	17(2)	-2(1)	-1(1)	-5(1)
C(20)	15(2)	35(2)	30(2)	9(2)	5(1)	0(2)
C(21)	17(2)	37(2)	30(2)	10(2)	-5(2)	-1(2)
C(22)	31(2)	25(2)	12(2)	4(1)	-3(1)	-7(2)
C(23)	28(2)	22(2)	20(2)	-3(1)	8(2)	-1(2)
C(24)	18(2)	23(2)	18(2)	-5(1)	1(1)	3(1)
C(25)	16(2)	17(2)	23(2)	-5(1)	5(1)	1(1)

C(26)	24(2)	24(2)	39(2)	-6(2)	-11(2)	2(2)
C(27)	54(3)	28(2)	56(3)	-2(2)	-36(2)	7(2)
C(28)	52(3)	19(2)	71(3)	5(2)	-25(2)	3(2)
C(29)	48(3)	19(2)	59(3)	-8(2)	-18(2)	-5(2)
C(30)	33(2)	23(2)	37(2)	-4(2)	-13(2)	-2(2)
C(31)	15(2)	23(2)	14(2)	-7(1)	-1(1)	-6(1)
C(32)	22(2)	30(2)	24(2)	-9(2)	1(1)	-2(2)
C(33)	22(2)	50(3)	22(2)	-15(2)	4(2)	-2(2)
C(34)	25(2)	48(2)	19(2)	-10(2)	5(2)	-16(2)
C(35)	25(2)	30(2)	19(2)	-4(2)	-1(1)	-12(2)
C(36)	21(2)	23(2)	17(2)	-8(1)	1(1)	-7(1)
C(37)	17(2)	19(2)	21(2)	-3(1)	-1(1)	-4(1)
C(38)	20(2)	26(2)	33(2)	-11(2)	9(2)	-8(2)
C(39)	52(3)	77(3)	32(2)	-26(2)	24(2)	-41(3)
C(40)	27(2)	25(2)	88(4)	-19(2)	11(2)	-3(2)
C(41)	15(2)	22(2)	30(2)	-7(2)	3(1)	-5(1)
C(42)	77(4)	29(2)	39(2)	-1(2)	-9(2)	0(2)
C(43)	112(5)	23(2)	77(4)	-12(3)	22(4)	-16(3)
C(44)	62(3)	74(4)	64(3)	-48(3)	31(3)	-39(3)
C(45)	34(2)	81(4)	27(2)	-27(2)	2(2)	-9(2)
C(46)	36(2)	39(2)	23(2)	-4(2)	5(2)	-2(2)
Mo(2)	12(1)	13(1)	14(1)	-3(1)	3(1)	-3(1)
N(4)	15(1)	13(1)	14(1)	-4(1)	2(1)	-4(1)
N(5)	19(1)	16(1)	16(1)	-3(1)	1(1)	-5(1)
N(6)	14(1)	20(1)	14(1)	-4(1)	2(1)	-1(1)
C(47)	13(2)	15(2)	16(2)	-2(1)	0(1)	-4(1)
C(48)	17(2)	20(2)	16(2)	-3(1)	2(1)	-2(1)
C(49)	21(2)	23(2)	15(2)	-2(1)	4(1)	-9(1)
C(50)	23(2)	17(2)	20(2)	0(1)	1(1)	-8(1)
C(51)	23(2)	16(2)	22(2)	-5(1)	-1(1)	-2(1)
C(52)	14(2)	17(2)	14(2)	-1(1)	-2(1)	-1(1)
C(53)	16(2)	15(2)	17(2)	-6(1)	3(1)	-3(1)
C(54)	17(2)	23(2)	27(2)	-8(2)	3(1)	-1(1)
C(55)	21(2)	32(2)	17(2)	-3(2)	0(1)	-5(2)
C(56)	25(2)	23(2)	20(2)	-10(1)	9(1)	-9(2)
C(57)	42(2)	36(2)	22(2)	-8(2)	6(2)	-22(2)

C(58)	34(2)	34(2)	36(2)	-16(2)	17(2)	-7(2)
C(59)	11(2)	22(2)	19(2)	-6(1)	5(1)	-4(1)
C(60)	17(2)	19(2)	16(2)	-7(1)	2(1)	0(1)
C(61)	18(2)	22(2)	24(2)	-6(2)	5(1)	4(1)
C(62)	17(2)	39(2)	19(2)	-3(2)	-5(1)	2(2)
C(63)	25(2)	34(2)	26(2)	-11(2)	-3(2)	-11(2)
C(64)	22(2)	27(2)	22(2)	-4(1)	0(1)	-9(2)
C(65)	25(2)	19(2)	26(2)	-2(2)	-5(2)	-9(2)
C(66)	38(2)	41(2)	27(2)	5(2)	-5(2)	-21(2)
C(67)	76(4)	49(3)	55(3)	26(2)	-27(3)	-44(3)
C(68)	88(4)	24(2)	86(4)	25(3)	-62(3)	-25(3)
C(69)	55(3)	20(2)	120(5)	-15(3)	-34(3)	-2(2)
C(70)	32(2)	26(2)	66(3)	-16(2)	-2(2)	-5(2)
C(71)	14(2)	17(2)	16(2)	-3(1)	3(1)	1(1)
C(72)	20(2)	19(2)	22(2)	-5(1)	4(1)	-6(1)
C(73)	24(2)	24(2)	18(2)	-8(1)	-4(1)	-5(1)
C(74)	25(2)	24(2)	16(2)	-1(1)	-3(1)	2(2)
C(75)	28(2)	29(2)	25(2)	6(2)	2(2)	-10(2)
C(76)	19(2)	26(2)	24(2)	2(2)	-2(1)	-9(1)
C(77)	13(2)	19(2)	18(2)	-3(1)	2(1)	-8(1)
C(78)	15(2)	25(2)	18(2)	-5(1)	3(1)	-4(1)
C(79)	21(2)	32(2)	13(2)	2(2)	-3(1)	-5(2)
C(80)	14(2)	20(2)	32(2)	1(2)	0(2)	-2(1)
C(81)	17(2)	22(2)	24(2)	-6(1)	7(1)	-2(1)
C(82)	17(2)	21(2)	16(2)	-2(1)	0(1)	-4(1)
C(83)	21(2)	13(2)	12(2)	-3(1)	2(1)	-2(1)
C(84)	15(2)	22(2)	30(2)	-10(2)	-2(1)	1(1)
C(85)	17(2)	29(2)	53(3)	-23(2)	1(2)	-6(2)
C(86)	30(2)	39(2)	30(2)	-10(2)	-9(2)	9(2)
C(87)	14(2)	26(2)	26(2)	-8(2)	-2(1)	-2(1)
C(88)	41(2)	28(2)	46(3)	-6(2)	21(2)	-2(2)
C(89)	51(3)	24(2)	56(3)	-12(2)	23(2)	-1(2)
C(90)	29(2)	37(2)	42(2)	-21(2)	3(2)	4(2)
C(91)	26(2)	48(3)	27(2)	-12(2)	-3(2)	3(2)
C(92)	36(2)	29(2)	24(2)	-4(2)	-5(2)	3(2)

Table 5. Hydrogen coordinates (x 10^4) and isotropic displacement parameters (Å ^{2}x 10 ^{3}) for Mo(NAr)($CHCMe_2Ph$)(NPh_2)$_2$.

	x	y	z	U(eq)
H(3)	10373	5258	2900	27
H(4)	10298	4444	2230	26
H(5)	8902	4700	1270	21
H(7)	6809	6299	647	20
H(8A)	9116	6157	157	38
H(8B)	7889	5965	-297	38
H(8C)	8939	5378	149	38
H(9A)	6690	4870	734	35
H(9B)	5779	5431	200	35
H(9C)	5453	5394	962	35
H(10)	8357	6909	2659	28
H(11A)	11196	6301	3113	53
H(11B)	10486	7038	3207	53
H(11C)	10890	6895	2490	53
H(12A)	7524	6013	3444	48
H(12B)	8346	6519	3788	48
H(12C)	9159	5795	3709	48
H(14)	3618	6779	-290	22
H(15)	2108	5925	-53	27
H(16)	1550	5499	1025	29
H(17)	2470	5959	1872	27
H(18)	3894	6847	1649	22
H(20)	2951	8241	-197	35
H(21)	3089	8765	-1281	36
H(22)	5164	8566	-1878	28
H(23)	7182	7885	-1360	28
H(24)	7069	7355	-269	24
H(26)	3115	8536	1049	35
H(27)	2685	9673	547	57
H(28)	3923	10487	911	59

H(29)	5543	10166	1794	50
H(30)	6045	9032	2275	37
H(32)	3243	8549	2723	30
H(33)	2484	8104	3755	36
H(34)	3292	6997	4254	35
H(35)	4870	6322	3691	29
H(36)	5635	6752	2648	23
H(37)	6849	8543	718	22
H(39A)	8949	8162	-226	74
H(39B)	10113	8648	-78	74
H(39C)	8421	8920	-125	74
H(40A)	9857	7408	1399	68
H(40B)	11025	7714	897	68
H(40C)	9824	7298	654	68
H(42)	8797	9639	448	59
H(43)	9365	10450	1072	84
H(44)	10216	10121	2134	71
H(45)	10518	8993	2589	54
H(46)	9961	8183	1996	40
H(49)	5527	4707	2077	24
H(50)	5044	5526	2726	24
H(51)	3777	5287	3692	24
H(53)	2457	3705	4339	19
H(54A)	1641	5130	4224	33
H(54B)	1025	4579	4775	33
H(54C)	660	4595	4018	33
H(55A)	4688	3858	4815	35
H(55B)	3366	4052	5267	35
H(55C)	4120	4637	4814	35
H(56)	4305	3049	2347	26
H(57A)	3040	3914	1546	47
H(57B)	4162	3422	1211	47
H(57C)	4557	4156	1292	47
H(58A)	6865	3654	1913	50
H(58B)	6519	2924	1795	50
H(58C)	6821	3048	2522	50

H(60)	1475	3202	2369	20
H(61)	467	3620	1330	26
H(62)	-694	2923	758	30
H(63)	-845	1801	1245	33
H(64)	141	1365	2281	28
H(66)	-132	1350	3901	43
H(67)	-7	190	4329	74
H(68)	1828	-562	4030	82
H(69)	3443	-185	3245	78
H(70)	3332	959	2796	48
H(72)	3151	2707	5272	24
H(73)	3532	2217	6367	25
H(74)	1963	1479	6889	27
H(75)	52	1199	6290	34
H(76)	-362	1697	5199	28
H(78)	-201	3118	3343	22
H(79)	-2039	4008	3105	27
H(80)	-3152	4501	3949	27
H(81)	-2391	4092	5028	25
H(82)	-486	3224	5276	21
H(83)	3577	1463	4337	18
H(85A)	6054	2596	3623	46
H(85B)	7338	2321	4150	46
H(85C)	5897	2744	4354	46
H(86A)	5474	1888	5262	50
H(86B)	6862	1383	5135	50
H(86C)	5289	1126	5186	50
H(88)	6055	382	4642	46
H(89)	6885	-461	4056	52
H(90)	7550	-175	2965	42
H(91)	7405	962	2480	40
H(92)	6512	1805	3055	36