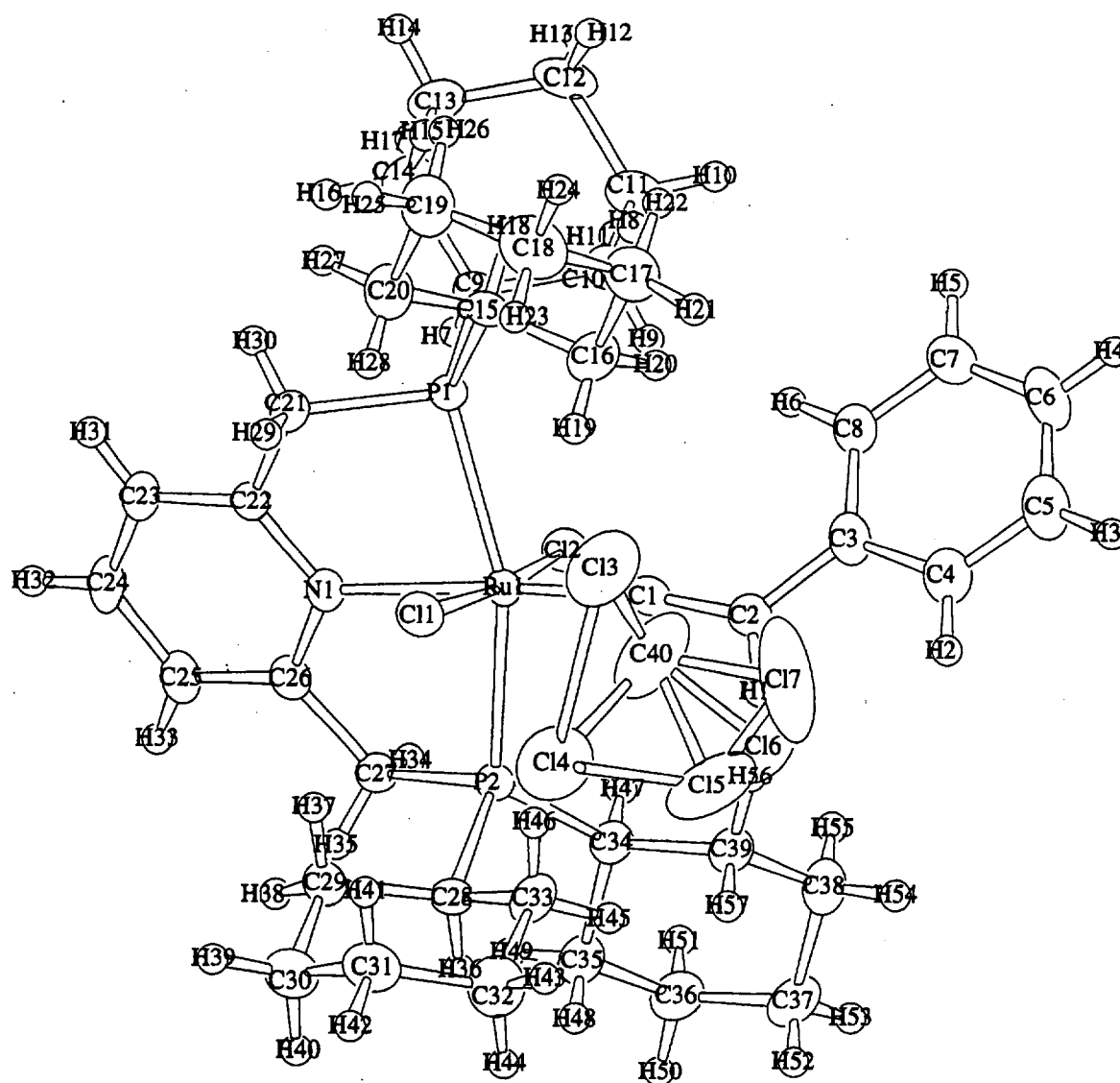




**Table S1.** Positional Parameters, Equivalent Isotropic Thermal Parameters, and Occupancy Factors for RuCl<sub>2</sub>{=C=C(H)Ph}(dcpmp) (**2c**)

| atom  | x          | y           | z          | B <sub>eq</sub> | occ    |
|-------|------------|-------------|------------|-----------------|--------|
| Ru(1) | 0.15687(4) | 0.27212(3)  | 0.11818(4) | 1.376(8)        | 1.0000 |
| Cl(1) | 0.1910(1)  | 0.11358(9)  | 0.0593(1)  | 2.13(3)         | 1.0000 |
| Cl(2) | 0.0999(1)  | 0.42151(9)  | 0.1718(1)  | 2.04(3)         | 1.0000 |
| Cl(3) | 0.4840(2)  | 0.0066(2)   | 0.2359(3)  | 5.63(7)         | 0.8000 |
| Cl(4) | 0.4767(7)  | 0.0278(9)   | 0.0495(10) | 5.7(2)          | 0.2000 |
| Cl(5) | 0.595(2)   | 0.127(1)    | 0.129(2)   | 6.7(4)          | 0.2000 |
| Cl(6) | 0.6201(6)  | 0.1617(6)   | 0.1938(6)  | 5.5(2)          | 0.5000 |
| Cl(7) | 0.627(1)   | 0.1562(10)  | 0.260(1)   | 8.6(3)          | 0.3000 |
| P(1)  | 0.0857(1)  | 0.19185(10) | 0.2405(1)  | 1.60(3)         | 1.0000 |
| P(2)  | 0.1603(1)  | 0.33988(9)  | -0.0456(1) | 1.60(3)         | 1.0000 |
| N(1)  | -0.0258(3) | 0.2294(3)   | -0.0025(4) | 1.66(8)         | 1.0000 |
| C(1)  | 0.3085(4)  | 0.3077(4)   | 0.2092(4)  | 1.79(9)         | 1.0000 |
| C(2)  | 0.4203(5)  | 0.3299(4)   | 0.2619(5)  | 2.15(10)        | 1.0000 |
| C(3)  | 0.4940(5)  | 0.3576(4)   | 0.3878(5)  | 2.27(10)        | 1.0000 |
| C(4)  | 0.6138(5)  | 0.3731(5)   | 0.4259(5)  | 3.1(1)          | 1.0000 |
| C(5)  | 0.6847(5)  | 0.4030(5)   | 0.5439(6)  | 3.6(1)          | 1.0000 |
| C(6)  | 0.6370(6)  | 0.4174(5)   | 0.6267(5)  | 3.4(1)          | 1.0000 |
| C(7)  | 0.5189(5)  | 0.4024(5)   | 0.5922(5)  | 3.1(1)          | 1.0000 |
| C(8)  | 0.4488(5)  | 0.3738(4)   | 0.4738(5)  | 2.5(1)          | 1.0000 |
| C(9)  | 0.0256(4)  | 0.2652(4)   | 0.3285(4)  | 1.8(1)          | 1.0000 |
| C(10) | 0.1236(5)  | 0.3321(4)   | 0.4307(5)  | 2.2(1)          | 1.0000 |
| C(11) | 0.0757(5)  | 0.4001(4)   | 0.4972(5)  | 2.8(1)          | 1.0000 |
| C(12) | -0.0047(5) | 0.3463(5)   | 0.5435(5)  | 2.7(1)          | 1.0000 |
| C(13) | -0.1004(5) | 0.2789(5)   | 0.4450(5)  | 2.8(1)          | 1.0000 |

**Table S1.** *(continued)*

| atom  | x          | y          | z          | B <sub>eq</sub> | occ    |
|-------|------------|------------|------------|-----------------|--------|
| C(14) | -0.0554(5) | 0.2100(4)  | 0.3748(5)  | 2.4(1)          | 1.0000 |
| C(15) | 0.1660(4)  | 0.1134(4)  | 0.3422(4)  | 1.83(9)         | 1.0000 |
| C(16) | 0.2958(5)  | 0.1347(4)  | 0.3770(5)  | 2.9(1)          | 1.0000 |
| C(17) | 0.3584(5)  | 0.0785(5)  | 0.4740(6)  | 3.3(1)          | 1.0000 |
| C(18) | 0.3152(6)  | -0.0281(5) | 0.4391(6)  | 3.9(1)          | 1.0000 |
| C(19) | 0.1875(6)  | -0.0487(4) | 0.4000(6)  | 3.6(1)          | 1.0000 |
| C(20) | 0.1252(5)  | 0.0066(4)  | 0.3001(5)  | 3.0(1)          | 1.0000 |
| C(21) | -0.0394(4) | 0.1148(4)  | 0.1251(5)  | 1.91(10)        | 1.0000 |
| C(22) | -0.0958(4) | 0.1653(4)  | 0.0224(4)  | 1.82(9)         | 1.0000 |
| C(23) | -0.2112(4) | 0.1432(4)  | -0.0460(5) | 2.4(1)          | 1.0000 |
| C(24) | -0.2575(4) | 0.1875(4)  | -0.1435(5) | 2.5(1)          | 1.0000 |
| C(25) | -0.1870(4) | 0.2517(4)  | -0.1715(5) | 2.1(1)          | 1.0000 |
| C(26) | -0.0715(4) | 0.2720(4)  | -0.0989(4) | 1.80(9)         | 1.0000 |
| C(27) | 0.0064(4)  | 0.3471(4)  | -0.1223(4) | 1.83(9)         | 1.0000 |
| C(28) | 0.2022(4)  | 0.2722(4)  | -0.1551(4) | 1.89(10)        | 1.0000 |
| C(29) | 0.1137(5)  | 0.1829(4)  | -0.2228(5) | 2.2(1)          | 1.0000 |
| C(30) | 0.1525(5)  | 0.1233(4)  | -0.3068(5) | 2.8(1)          | 1.0000 |
| C(31) | 0.2699(6)  | 0.0952(4)  | -0.2428(5) | 3.0(1)          | 1.0000 |
| C(32) | 0.3583(5)  | 0.1841(5)  | -0.1815(6) | 3.4(1)          | 1.0000 |
| C(33) | 0.3234(5)  | 0.2459(4)  | -0.0963(5) | 2.4(1)          | 1.0000 |
| C(34) | 0.2228(4)  | 0.4662(4)  | -0.0268(5) | 1.82(9)         | 1.0000 |
| C(35) | 0.1949(5)  | 0.5070(4)  | -0.1416(5) | 2.6(1)          | 1.0000 |
| C(36) | 0.2369(5)  | 0.6146(4)  | -0.1163(5) | 2.8(1)          | 1.0000 |
| C(37) | 0.3635(5)  | 0.6372(4)  | -0.0411(6) | 3.0(1)          | 1.0000 |

Table S1. (continued)

| atom  | x         | y         | z          | B <sub>eq</sub> | occ    |
|-------|-----------|-----------|------------|-----------------|--------|
| C(38) | 0.3937(5) | 0.5961(4) | 0.0725(5)  | 2.7(1)          | 1.0000 |
| C(39) | 0.3527(5) | 0.4888(4) | 0.0480(5)  | 2.2(1)          | 1.0000 |
| C(40) | 0.4915(7) | 0.1093(6) | 0.1908(10) | 6.6(2)          | 1.0000 |
| H(1)  | 0.4601    | 0.3277    | 0.2106     | 2.5813          | 1.0000 |
| H(2)  | 0.6475    | 0.3628    | 0.3696     | 3.7183          | 1.0000 |
| H(3)  | 0.7657    | 0.4136    | 0.5676     | 4.3691          | 1.0000 |
| H(4)  | 0.6852    | 0.4376    | 0.7075     | 4.0858          | 1.0000 |
| H(5)  | 0.4860    | 0.4117    | 0.6492     | 3.7544          | 1.0000 |
| H(6)  | 0.3679    | 0.3650    | 0.4507     | 3.0512          | 1.0000 |
| H(7)  | -0.0187   | 0.3050    | 0.2783     | 2.1732          | 1.0000 |
| H(8)  | 0.1697    | 0.2948    | 0.4834     | 2.6135          | 1.0000 |
| H(9)  | 0.1693    | 0.3679    | 0.3995     | 2.6135          | 1.0000 |
| H(10) | 0.1376    | 0.4378    | 0.5620     | 3.3991          | 1.0000 |
| H(11) | 0.0342    | 0.4403    | 0.4456     | 3.3991          | 1.0000 |
| H(12) | 0.0383    | 0.3106    | 0.6006     | 3.2954          | 1.0000 |
| H(13) | -0.0373   | 0.3913    | 0.5792     | 3.2954          | 1.0000 |
| H(14) | -0.1438   | 0.2428    | 0.4783     | 3.3565          | 1.0000 |
| H(15) | -0.1485   | 0.3155    | 0.3929     | 3.3565          | 1.0000 |
| H(16) | -0.1185   | 0.1738    | 0.3097     | 2.9315          | 1.0000 |
| H(17) | -0.0144   | 0.1683    | 0.4244     | 2.9315          | 1.0000 |
| H(18) | 0.1536    | 0.1280    | 0.4128     | 2.1952          | 1.0000 |
| H(19) | 0.3130    | 0.1171    | 0.3099     | 3.4578          | 1.0000 |
| H(20) | 0.3207    | 0.2010    | 0.4050     | 3.4578          | 1.0000 |
| H(21) | 0.4381    | 0.0889    | 0.4895     | 3.9540          | 1.0000 |

**Table S1.** (*continued*)

| atom  | x       | y       | z       | B <sub>eq</sub> | occ    |
|-------|---------|---------|---------|-----------------|--------|
| H(22) | 0.3470  | 0.1009  | 0.5434  | 3.9540          | 1.0000 |
| H(23) | 0.3357  | -0.0523 | 0.3763  | 4.7137          | 1.0000 |
| H(24) | 0.3501  | -0.0589 | 0.5051  | 4.7137          | 1.0000 |
| H(25) | 0.1633  | -0.1152 | 0.3724  | 4.3271          | 1.0000 |
| H(26) | 0.1677  | -0.0308 | 0.4653  | 4.3271          | 1.0000 |
| H(27) | 0.0447  | -0.0064 | 0.2795  | 3.5809          | 1.0000 |
| H(28) | 0.1420  | -0.0129 | 0.2332  | 3.5809          | 1.0000 |
| H(29) | -0.0149 | 0.0594  | 0.0979  | 2.2957          | 1.0000 |
| H(30) | -0.0936 | 0.0968  | 0.1578  | 2.2957          | 1.0000 |
| H(31) | -0.2586 | 0.0981  | -0.0265 | 2.8270          | 1.0000 |
| H(32) | -0.3374 | 0.1739  | -0.1910 | 3.0155          | 1.0000 |
| H(33) | -0.2173 | 0.2814  | -0.2393 | 2.5656          | 1.0000 |
| H(34) | -0.0074 | 0.4082  | -0.0966 | 2.2001          | 1.0000 |
| H(35) | -0.0116 | 0.3392  | -0.2047 | 2.2001          | 1.0000 |
| H(36) | 0.2043  | 0.3124  | -0.2107 | 2.2645          | 1.0000 |
| H(37) | 0.1039  | 0.1452  | -0.1678 | 2.6602          | 1.0000 |
| H(38) | 0.0426  | 0.2024  | -0.2669 | 2.6602          | 1.0000 |
| H(39) | 0.0983  | 0.0670  | -0.3431 | 3.3506          | 1.0000 |
| H(40) | 0.1564  | 0.1593  | -0.3656 | 3.3506          | 1.0000 |
| H(41) | 0.2660  | 0.0572  | -0.1856 | 3.6209          | 1.0000 |
| H(42) | 0.2921  | 0.0595  | -0.2981 | 3.6209          | 1.0000 |
| H(43) | 0.4303  | 0.1653  | -0.1390 | 4.1237          | 1.0000 |
| H(44) | 0.3651  | 0.2200  | -0.2393 | 4.1237          | 1.0000 |
| H(45) | 0.3769  | 0.3031  | -0.0653 | 2.9353          | 1.0000 |

**Table S1.** (*continued*)

| atom  | x      | y      | z       | $B_{eq}$ | occ    |
|-------|--------|--------|---------|----------|--------|
| H(46) | 0.3252 | 0.2122 | -0.0338 | 2.9353   | 1.0000 |
| H(47) | 0.1876 | 0.5015 | 0.0164  | 2.1845   | 1.0000 |
| H(48) | 0.2315 | 0.4763 | -0.1868 | 3.1021   | 1.0000 |
| H(49) | 0.1142 | 0.4958 | -0.1850 | 3.1021   | 1.0000 |
| H(50) | 0.2227 | 0.6374 | -0.1890 | 3.3481   | 1.0000 |
| H(51) | 0.1959 | 0.6457 | -0.0763 | 3.3481   | 1.0000 |
| H(52) | 0.4047 | 0.6112 | -0.0842 | 3.5524   | 1.0000 |
| H(53) | 0.3849 | 0.7046 | -0.0224 | 3.5524   | 1.0000 |
| H(54) | 0.4746 | 0.6076 | 0.1143  | 3.2731   | 1.0000 |
| H(55) | 0.3581 | 0.6265 | 0.1192  | 3.2731   | 1.0000 |
| H(56) | 0.3684 | 0.4660 | 0.1208  | 2.6324   | 1.0000 |
| H(57) | 0.3926 | 0.4579 | 0.0066  | 2.6324   | 1.0000 |

$$B_{eq} = (8\pi^2/3)\sum_i\sum_j[U_{ij}(a_i^*a_j^*)(\mathbf{a}_i\cdot\mathbf{a}_j)] = (4/3)\sum_i\sum_j[\beta_{ij}(\mathbf{a}_i\cdot\mathbf{a}_j)]$$

**Table S2.** Anisotropic Thermal Parameters for RuCl<sub>2</sub>{=C=C(H)Ph}(dcpmp) (2c)

| atom  | U <sub>11</sub> | U <sub>22</sub> | U <sub>33</sub> | U <sub>12</sub> | U <sub>13</sub> | U <sub>23</sub> |
|-------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Ru(1) | 0.0173(2)       | 0.0177(2)       | 0.0167(2)       | 0.0031(1)       | 0.0063(2)       | 0.0014(1)       |
| Cl(1) | 0.0333(7)       | 0.0220(6)       | 0.0276(7)       | 0.0076(5)       | 0.0136(6)       | 0.0027(5)       |
| Cl(2) | 0.0295(7)       | 0.0219(6)       | 0.0286(7)       | 0.0080(5)       | 0.0136(6)       | 0.0034(5)       |
| Cl(3) | 0.056(2)        | 0.066(2)        | 0.099(2)        | 0.012(1)        | 0.035(1)        | 0.023(2)        |
| Cl(4) | 0.027(4)        | 0.111(8)        | 0.082(6)        | 0.037(4)        | 0.009(4)        | 0.055(5)        |
| Cl(5) | 0.085(10)       | 0.08(1)         | 0.12(1)         | 0.014(6)        | 0.061(9)        | 0.060(8)        |
| Cl(6) | 0.057(4)        | 0.052(4)        | 0.104(7)        | -0.007(3)       | 0.037(5)        | 0.017(4)        |
| Cl(7) | 0.068(4)        | 0.068(7)        | 0.119(9)        | 0.021(4)        | -0.035(7)       | -0.027(7)       |
| P(1)  | 0.0198(7)       | 0.0216(7)       | 0.0196(6)       | 0.0028(5)       | 0.0082(5)       | 0.0033(5)       |
| P(2)  | 0.0210(7)       | 0.0198(6)       | 0.0197(6)       | 0.0035(5)       | 0.0074(5)       | 0.0037(5)       |
| N(1)  | 0.019(2)        | 0.021(2)        | 0.022(2)        | 0.004(2)        | 0.007(1)        | 0.000(2)        |
| C(1)  | 0.024(2)        | 0.026(3)        | 0.020(2)        | 0.006(2)        | 0.009(2)        | 0.004(2)        |
| C(2)  | 0.027(2)        | 0.029(3)        | 0.025(2)        | 0.002(2)        | 0.010(2)        | 0.005(2)        |
| C(3)  | 0.024(2)        | 0.025(3)        | 0.030(2)        | 0.006(2)        | 0.003(2)        | 0.003(2)        |
| C(4)  | 0.025(2)        | 0.050(4)        | 0.039(3)        | 0.007(3)        | 0.010(2)        | 0.003(3)        |
| C(5)  | 0.024(3)        | 0.059(4)        | 0.043(3)        | 0.006(3)        | 0.001(2)        | 0.002(3)        |
| C(6)  | 0.039(3)        | 0.042(4)        | 0.030(3)        | 0.007(3)        | -0.004(2)       | 0.000(3)        |
| C(7)  | 0.040(3)        | 0.046(4)        | 0.029(3)        | 0.001(3)        | 0.011(2)        | 0.004(3)        |
| C(8)  | 0.030(3)        | 0.031(3)        | 0.031(2)        | 0.000(2)        | 0.010(2)        | 0.001(2)        |
| C(9)  | 0.024(3)        | 0.027(3)        | 0.022(2)        | 0.012(2)        | 0.011(2)        | 0.006(2)        |
| C(10) | 0.027(3)        | 0.028(3)        | 0.027(3)        | 0.006(2)        | 0.010(2)        | 0.006(2)        |
| C(11) | 0.051(4)        | 0.031(3)        | 0.034(3)        | 0.010(3)        | 0.026(3)        | 0.000(2)        |
| C(12) | 0.040(3)        | 0.051(4)        | 0.025(3)        | 0.026(2)        | 0.021(2)        | 0.011(2)        |
| C(13) | 0.029(3)        | 0.050(4)        | 0.041(3)        | 0.013(2)        | 0.025(2)        | 0.012(2)        |

**Table S2.** *(continued)*

| atom  | U <sub>11</sub> | U <sub>22</sub> | U <sub>33</sub> | U <sub>12</sub> | U <sub>13</sub> | U <sub>23</sub> |
|-------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| C(14) | 0.026(3)        | 0.034(3)        | 0.038(3)        | 0.005(2)        | 0.017(2)        | 0.010(2)        |
| C(15) | 0.025(2)        | 0.030(2)        | 0.016(2)        | 0.006(2)        | 0.009(2)        | 0.007(2)        |
| C(16) | 0.024(2)        | 0.045(4)        | 0.042(3)        | 0.008(3)        | 0.011(3)        | 0.018(3)        |
| C(17) | 0.032(3)        | 0.054(3)        | 0.037(3)        | 0.013(3)        | 0.008(3)        | 0.015(3)        |
| C(18) | 0.056(3)        | 0.048(3)        | 0.048(4)        | 0.030(3)        | 0.016(3)        | 0.016(3)        |
| C(19) | 0.056(3)        | 0.027(3)        | 0.044(4)        | 0.002(3)        | 0.007(3)        | 0.015(3)        |
| C(20) | 0.041(4)        | 0.028(3)        | 0.037(3)        | 0.001(3)        | 0.008(3)        | 0.011(2)        |
| C(21) | 0.025(2)        | 0.021(3)        | 0.026(2)        | -0.001(2)       | 0.010(2)        | 0.002(2)        |
| C(22) | 0.021(2)        | 0.028(3)        | 0.019(2)        | -0.001(2)       | 0.008(2)        | -0.003(2)       |
| C(23) | 0.020(2)        | 0.034(3)        | 0.031(3)        | -0.001(2)       | 0.008(2)        | -0.001(2)       |
| C(24) | 0.017(3)        | 0.034(3)        | 0.034(3)        | -0.002(2)       | 0.001(2)        | -0.001(2)       |
| C(25) | 0.022(2)        | 0.024(3)        | 0.027(3)        | 0.005(2)        | 0.002(2)        | 0.001(2)        |
| C(26) | 0.022(2)        | 0.023(3)        | 0.022(2)        | 0.007(2)        | 0.007(2)        | 0.000(2)        |
| C(27) | 0.021(2)        | 0.027(3)        | 0.023(3)        | 0.007(2)        | 0.009(2)        | 0.006(2)        |
| C(28) | 0.028(2)        | 0.026(3)        | 0.021(2)        | 0.003(2)        | 0.014(2)        | 0.004(2)        |
| C(29) | 0.033(3)        | 0.024(3)        | 0.024(3)        | 0.000(2)        | 0.008(2)        | 0.004(2)        |
| C(30) | 0.048(3)        | 0.028(3)        | 0.034(3)        | 0.007(3)        | 0.023(3)        | -0.003(2)       |
| C(31) | 0.049(3)        | 0.036(3)        | 0.037(3)        | 0.012(2)        | 0.025(3)        | -0.001(3)       |
| C(32) | 0.040(3)        | 0.044(4)        | 0.052(4)        | 0.013(2)        | 0.026(3)        | -0.007(3)       |
| C(33) | 0.025(2)        | 0.029(3)        | 0.043(3)        | 0.003(2)        | 0.020(2)        | 0.002(2)        |
| C(34) | 0.025(2)        | 0.019(2)        | 0.028(2)        | 0.005(2)        | 0.014(2)        | 0.001(2)        |
| C(35) | 0.028(3)        | 0.031(3)        | 0.035(3)        | 0.001(2)        | 0.008(3)        | 0.013(2)        |
| C(36) | 0.040(3)        | 0.030(3)        | 0.041(3)        | 0.006(2)        | 0.017(3)        | 0.017(3)        |
| C(37) | 0.038(3)        | 0.030(3)        | 0.049(3)        | 0.002(3)        | 0.020(3)        | 0.018(3)        |



**Table S2.** (*continued*)

| atom  | $U_{11}$ | $U_{22}$ | $U_{33}$ | $U_{12}$ | $U_{13}$ | $U_{23}$ |
|-------|----------|----------|----------|----------|----------|----------|
| C(38) | 0.030(3) | 0.029(2) | 0.039(3) | 0.000(2) | 0.009(3) | 0.003(2) |
| C(39) | 0.026(2) | 0.027(2) | 0.031(3) | 0.003(2) | 0.010(2) | 0.010(2) |
| C(40) | 0.061(4) | 0.060(5) | 0.139(8) | 0.002(4) | 0.052(5) | 0.022(4) |

**Table S3.** Bond Distances (Å) for RuCl<sub>2</sub>{=C=C(H)Ph}(dcpmp) (**2c**)

| atom  | atom  | distance  | atom  | atom  | distance  |
|-------|-------|-----------|-------|-------|-----------|
| Ru(1) | Cl(1) | 2.427(1)  | Ru(1) | Cl(2) | 2.418(1)  |
| Ru(1) | P(1)  | 2.375(2)  | Ru(1) | P(2)  | 2.355(2)  |
| Ru(1) | N(1)  | 2.218(4)  | Ru(1) | C(1)  | 1.816(6)  |
| Cl(3) | Cl(4) | 2.33(1)   | Cl(3) | C(40) | 1.632(10) |
| Cl(4) | Cl(4) | 1.70(2)   | Cl(4) | Cl(5) | 1.84(2)   |
| Cl(4) | C(40) | 1.92(2)   | Cl(5) | Cl(6) | 0.83(2)   |
| Cl(5) | Cl(7) | 1.52(2)   | Cl(5) | C(40) | 1.77(2)   |
| Cl(6) | Cl(7) | 0.81(1)   | Cl(6) | C(40) | 1.71(1)   |
| Cl(7) | C(40) | 1.64(2)   | P(1)  | C(9)  | 1.841(5)  |
| P(1)  | C(15) | 1.857(6)  | P(1)  | C(21) | 1.840(6)  |
| P(2)  | C(27) | 1.844(6)  | P(2)  | C(28) | 1.844(6)  |
| P(2)  | C(34) | 1.851(6)  | N(1)  | C(22) | 1.354(7)  |
| N(1)  | C(26) | 1.356(7)  | C(1)  | C(2)  | 1.310(8)  |
| C(2)  | C(3)  | 1.470(8)  | C(2)  | H(1)  | 0.95      |
| C(3)  | C(4)  | 1.402(8)  | C(3)  | C(8)  | 1.395(9)  |
| C(4)  | C(5)  | 1.390(9)  | C(4)  | H(2)  | 0.95      |
| C(5)  | C(6)  | 1.380(10) | C(5)  | H(3)  | 0.95      |
| C(6)  | C(7)  | 1.385(9)  | C(6)  | H(4)  | 0.95      |
| C(7)  | C(8)  | 1.388(8)  | C(7)  | H(5)  | 0.95      |
| C(8)  | H(6)  | 0.95      | C(9)  | C(10) | 1.544(8)  |
| C(9)  | C(14) | 1.548(8)  | C(9)  | H(7)  | 0.95      |
| C(10) | C(11) | 1.516(8)  | C(10) | H(8)  | 0.95      |
| C(10) | H(9)  | 0.95      | C(11) | C(12) | 1.533(9)  |
| C(11) | H(10) | 0.95      | C(11) | H(11) | 0.95      |

**Table S3.** (*continued*)

| atom  | atom  | distance | atom  | atom  | distance  |
|-------|-------|----------|-------|-------|-----------|
| C(12) | C(13) | 1.515(9) | C(12) | H(12) | 0.95      |
| C(12) | H(13) | 0.95     | C(13) | C(14) | 1.530(8)  |
| C(13) | H(14) | 0.95     | C(13) | H(15) | 0.95      |
| C(14) | H(16) | 0.95     | C(14) | H(17) | 0.95      |
| C(15) | C(16) | 1.529(8) | C(15) | C(20) | 1.527(8)  |
| C(15) | H(18) | 0.95     | C(16) | C(17) | 1.530(9)  |
| C(16) | H(19) | 0.95     | C(16) | H(20) | 0.95      |
| C(17) | C(18) | 1.52(1)  | C(17) | H(21) | 0.95      |
| C(17) | H(22) | 0.95     | C(18) | C(19) | 1.50(1)   |
| C(18) | H(23) | 0.95     | C(18) | H(24) | 0.95      |
| C(19) | C(20) | 1.543(9) | C(19) | H(25) | 0.95      |
| C(19) | H(26) | 0.95     | C(20) | H(27) | 0.95      |
| C(20) | H(28) | 0.95     | C(21) | C(22) | 1.507(8)  |
| C(21) | H(29) | 0.95     | C(21) | H(30) | 0.95      |
| C(22) | C(23) | 1.374(7) | C(23) | C(24) | 1.383(8)  |
| C(23) | H(31) | 0.95     | C(24) | C(25) | 1.381(8)  |
| C(24) | H(32) | 0.95     | C(25) | C(26) | 1.385(8)  |
| C(25) | H(33) | 0.95     | C(26) | C(27) | 1.515(8)  |
| C(27) | H(34) | 0.95     | C(27) | H(35) | 0.95      |
| C(28) | C(29) | 1.539(8) | C(28) | C(33) | 1.540(8)  |
| C(28) | H(36) | 0.95     | C(29) | C(30) | 1.523(8)  |
| C(29) | H(37) | 0.95     | C(29) | H(38) | 0.95      |
| C(30) | C(31) | 1.521(9) | C(30) | H(39) | 0.95      |
| C(30) | H(40) | 0.95     | C(31) | C(32) | 1.523(10) |

**Table S3.** *(continued)*

| atom  | atom  | distance | atom  | atom  | distance |
|-------|-------|----------|-------|-------|----------|
| C(31) | H(41) | 0.95     | C(31) | H(42) | 0.95     |
| C(32) | C(33) | 1.518(9) | C(32) | H(43) | 0.95     |
| C(32) | H(44) | 0.95     | C(33) | H(45) | 0.95     |
| C(33) | H(46) | 0.95     | C(34) | C(35) | 1.527(8) |
| C(34) | C(39) | 1.541(8) | C(34) | H(47) | 0.95     |
| C(35) | C(36) | 1.533(8) | C(35) | H(48) | 0.95     |
| C(35) | H(49) | 0.95     | C(36) | C(37) | 1.507(9) |
| C(36) | H(50) | 0.95     | C(36) | H(51) | 0.95     |
| C(37) | C(38) | 1.514(9) | C(37) | H(52) | 0.95     |
| C(37) | H(53) | 0.95     | C(38) | C(39) | 1.526(8) |
| C(38) | H(54) | 0.95     | C(38) | H(55) | 0.95     |
| C(39) | H(56) | 0.95     | C(39) | H(57) | 0.95     |

**Table S4.** Bond Angles (deg) for RuCl<sub>2</sub>{=C=C(H)Ph}(dcpmp) (**2c**)

| atom  | atom  | atom  | angle     | atom  | atom  | atom  | angle     |
|-------|-------|-------|-----------|-------|-------|-------|-----------|
| Cl(1) | Ru(1) | Cl(2) | 173.22(5) | Cl(1) | Ru(1) | P(1)  | 82.64(5)  |
| Cl(1) | Ru(1) | P(2)  | 98.14(5)  | Cl(1) | Ru(1) | N(1)  | 88.2(1)   |
| Cl(1) | Ru(1) | C(1)  | 90.9(2)   | Cl(2) | Ru(1) | P(1)  | 93.11(5)  |
| Cl(2) | Ru(1) | P(2)  | 84.08(5)  | Cl(2) | Ru(1) | N(1)  | 85.8(1)   |
| Cl(2) | Ru(1) | C(1)  | 95.3(2)   | P(1)  | Ru(1) | P(2)  | 160.28(5) |
| P(1)  | Ru(1) | N(1)  | 79.6(1)   | P(1)  | Ru(1) | C(1)  | 103.6(2)  |
| P(2)  | Ru(1) | N(1)  | 80.7(1)   | P(2)  | Ru(1) | C(1)  | 96.1(2)   |
| N(1)  | Ru(1) | C(1)  | 176.5(2)  | Cl(4) | Cl(3) | C(40) | 54.7(5)   |
| Cl(3) | Cl(4) | Cl(4) | 135.2(9)  | Cl(3) | Cl(4) | Cl(5) | 85.4(7)   |
| Cl(3) | Cl(4) | C(40) | 43.8(4)   | Cl(4) | Cl(4) | Cl(5) | 101(1)    |
| Cl(4) | Cl(4) | C(40) | 155(1)    | Cl(5) | Cl(4) | C(40) | 56.0(7)   |
| Cl(4) | Cl(5) | Cl(6) | 136(1)    | Cl(4) | Cl(5) | Cl(7) | 117(1)    |
| Cl(4) | Cl(5) | C(40) | 64.4(7)   | Cl(6) | Cl(5) | Cl(7) | 21(1)     |
| Cl(6) | Cl(5) | C(40) | 72(1)     | Cl(7) | Cl(5) | C(40) | 59.3(9)   |
| Cl(5) | Cl(6) | Cl(7) | 136(2)    | Cl(5) | Cl(6) | C(40) | 79(1)     |
| Cl(7) | Cl(6) | C(40) | 71(1)     | Cl(5) | Cl(7) | Cl(6) | 22(1)     |
| Cl(5) | Cl(7) | C(40) | 68.0(9)   | Cl(6) | Cl(7) | C(40) | 81(1)     |
| Ru(1) | P(1)  | C(9)  | 116.0(2)  | Ru(1) | P(1)  | C(15) | 124.2(2)  |
| Ru(1) | P(1)  | C(21) | 99.0(2)   | C(9)  | P(1)  | C(15) | 104.0(2)  |
| C(9)  | P(1)  | C(21) | 104.9(3)  | C(15) | P(1)  | C(21) | 106.7(3)  |
| Ru(1) | P(2)  | C(27) | 100.3(2)  | Ru(1) | P(2)  | C(28) | 119.7(2)  |
| Ru(1) | P(2)  | C(34) | 120.4(2)  | C(27) | P(2)  | C(28) | 105.9(3)  |
| C(27) | P(2)  | C(34) | 100.4(3)  | C(28) | P(2)  | C(34) | 106.9(3)  |
| Ru(1) | N(1)  | C(22) | 120.9(4)  | Ru(1) | N(1)  | C(26) | 120.3(4)  |

Table S4. (continued)

| atom  | atom  | atom  | angle    | atom  | atom  | atom  | angle    |
|-------|-------|-------|----------|-------|-------|-------|----------|
| C(22) | N(1)  | C(26) | 118.6(5) | Ru(1) | C(1)  | C(2)  | 172.3(5) |
| C(1)  | C(2)  | C(3)  | 130.4(6) | C(1)  | C(2)  | H(1)  | 114.8    |
| C(3)  | C(2)  | H(1)  | 114.8    | C(2)  | C(3)  | C(4)  | 120.8(6) |
| C(2)  | C(3)  | C(8)  | 122.1(5) | C(4)  | C(3)  | C(8)  | 117.0(6) |
| C(3)  | C(4)  | C(5)  | 121.6(6) | C(3)  | C(4)  | H(2)  | 119.2    |
| C(5)  | C(4)  | H(2)  | 119.2    | C(4)  | C(5)  | C(6)  | 119.8(6) |
| C(4)  | C(5)  | H(3)  | 120.2    | C(6)  | C(5)  | H(3)  | 120.1    |
| C(5)  | C(6)  | C(7)  | 120.1(6) | C(5)  | C(6)  | H(4)  | 119.9    |
| C(7)  | C(6)  | H(4)  | 119.9    | C(6)  | C(7)  | C(8)  | 119.7(6) |
| C(6)  | C(7)  | H(5)  | 120.2    | C(8)  | C(7)  | H(5)  | 120.2    |
| C(3)  | C(8)  | C(7)  | 121.8(6) | C(3)  | C(8)  | H(6)  | 119.0    |
| C(7)  | C(8)  | H(6)  | 119.1    | P(1)  | C(9)  | C(10) | 109.7(4) |
| P(1)  | C(9)  | C(14) | 116.0(4) | P(1)  | C(9)  | H(7)  | 106.6    |
| C(10) | C(9)  | C(14) | 110.8(5) | C(10) | C(9)  | H(7)  | 106.6    |
| C(14) | C(9)  | H(7)  | 106.6    | C(9)  | C(10) | C(11) | 110.7(5) |
| C(9)  | C(10) | H(8)  | 109.2    | C(9)  | C(10) | H(9)  | 109.2    |
| C(11) | C(10) | H(8)  | 109.1    | C(11) | C(10) | H(9)  | 109.1    |
| H(8)  | C(10) | H(9)  | 109.4    | C(10) | C(11) | C(12) | 111.6(5) |
| C(10) | C(11) | H(10) | 109.0    | C(10) | C(11) | H(11) | 108.9    |
| C(12) | C(11) | H(10) | 108.9    | C(12) | C(11) | H(11) | 108.9    |
| H(10) | C(11) | H(11) | 109.4    | C(11) | C(12) | C(13) | 111.4(5) |
| C(11) | C(12) | H(12) | 108.9    | C(11) | C(12) | H(13) | 108.9    |
| C(13) | C(12) | H(12) | 109.1    | C(13) | C(12) | H(13) | 109.0    |
| H(12) | C(12) | H(13) | 109.5    | C(12) | C(13) | C(14) | 112.5(5) |

**Table S4.** (*continued*)

| atom  | atom  | atom  | angle    | atom  | atom  | atom  | angle    |
|-------|-------|-------|----------|-------|-------|-------|----------|
| C(12) | C(13) | H(14) | 108.7    | C(12) | C(13) | H(15) | 108.8    |
| C(14) | C(13) | H(14) | 108.7    | C(14) | C(13) | H(15) | 108.7    |
| H(14) | C(13) | H(15) | 109.4    | C(9)  | C(14) | C(13) | 110.8(5) |
| C(9)  | C(14) | H(16) | 109.1    | C(9)  | C(14) | H(17) | 109.1    |
| C(13) | C(14) | H(16) | 109.1    | C(13) | C(14) | H(17) | 109.2    |
| H(16) | C(14) | H(17) | 109.5    | P(1)  | C(15) | C(16) | 112.8(4) |
| P(1)  | C(15) | C(20) | 115.2(4) | P(1)  | C(15) | H(18) | 106.1    |
| C(16) | C(15) | C(20) | 109.8(5) | C(16) | C(15) | H(18) | 106.1    |
| C(20) | C(15) | H(18) | 106.1    | C(15) | C(16) | C(17) | 110.5(5) |
| C(15) | C(16) | H(19) | 109.2    | C(15) | C(16) | H(20) | 109.2    |
| C(17) | C(16) | H(19) | 109.3    | C(17) | C(16) | H(20) | 109.2    |
| H(19) | C(16) | H(20) | 109.5    | C(16) | C(17) | C(18) | 112.1(6) |
| C(16) | C(17) | H(21) | 108.7    | C(16) | C(17) | H(22) | 108.9    |
| C(18) | C(17) | H(21) | 108.8    | C(18) | C(17) | H(22) | 108.8    |
| H(21) | C(17) | H(22) | 109.5    | C(17) | C(18) | C(19) | 111.6(6) |
| C(17) | C(18) | H(23) | 109.0    | C(17) | C(18) | H(24) | 109.0    |
| C(19) | C(18) | H(23) | 109.0    | C(19) | C(18) | H(24) | 108.9    |
| H(23) | C(18) | H(24) | 109.4    | C(18) | C(19) | C(20) | 111.8(6) |
| C(18) | C(19) | H(25) | 108.8    | C(18) | C(19) | H(26) | 109.0    |
| C(20) | C(19) | H(25) | 108.8    | C(20) | C(19) | H(26) | 109.0    |
| H(25) | C(19) | H(26) | 109.4    | C(15) | C(20) | C(19) | 109.4(5) |
| C(15) | C(20) | H(27) | 109.5    | C(15) | C(20) | H(28) | 109.5    |
| C(19) | C(20) | H(27) | 109.4    | C(19) | C(20) | H(28) | 109.5    |
| H(27) | C(20) | H(28) | 109.5    | P(1)  | C(21) | C(22) | 111.5(4) |

**Table S4.** (*continued*)

| atom  | atom  | atom  | angle    | atom  | atom  | atom  | angle    |
|-------|-------|-------|----------|-------|-------|-------|----------|
| P(1)  | C(21) | H(29) | 109.0    | P(1)  | C(21) | H(30) | 108.9    |
| C(22) | C(21) | H(29) | 109.0    | C(22) | C(21) | H(30) | 109.0    |
| H(29) | C(21) | H(30) | 109.4    | N(1)  | C(22) | C(21) | 116.5(5) |
| N(1)  | C(22) | C(23) | 122.1(5) | C(21) | C(22) | C(23) | 121.4(5) |
| C(22) | C(23) | C(24) | 119.1(5) | C(22) | C(23) | H(31) | 120.4    |
| C(24) | C(23) | H(31) | 120.5    | C(23) | C(24) | C(25) | 119.6(5) |
| C(23) | C(24) | H(32) | 120.2    | C(25) | C(24) | H(32) | 120.2    |
| C(24) | C(25) | C(26) | 118.8(5) | C(24) | C(25) | H(33) | 120.6    |
| C(26) | C(25) | H(33) | 120.6    | N(1)  | C(26) | C(25) | 121.8(5) |
| N(1)  | C(26) | C(27) | 118.0(5) | C(25) | C(26) | C(27) | 120.1(5) |
| P(2)  | C(27) | C(26) | 113.3(4) | P(2)  | C(27) | H(34) | 108.5    |
| P(2)  | C(27) | H(35) | 108.5    | C(26) | C(27) | H(34) | 108.5    |
| C(26) | C(27) | H(35) | 108.5    | H(34) | C(27) | H(35) | 109.5    |
| P(2)  | C(28) | C(29) | 111.5(4) | P(2)  | C(28) | C(33) | 111.0(4) |
| P(2)  | C(28) | H(36) | 107.6    | C(29) | C(28) | C(33) | 111.3(5) |
| C(29) | C(28) | H(36) | 107.6    | C(33) | C(28) | H(36) | 107.7    |
| C(28) | C(29) | C(30) | 111.4(5) | C(28) | C(29) | H(37) | 109.0    |
| C(28) | C(29) | H(38) | 109.0    | C(30) | C(29) | H(37) | 109.0    |
| C(30) | C(29) | H(38) | 109.0    | H(37) | C(29) | H(38) | 109.4    |
| C(29) | C(30) | C(31) | 111.7(5) | C(29) | C(30) | H(39) | 108.9    |
| C(29) | C(30) | H(40) | 108.9    | C(31) | C(30) | H(39) | 108.9    |
| C(31) | C(30) | H(40) | 108.9    | H(39) | C(30) | H(40) | 109.5    |
| C(30) | C(31) | C(32) | 110.1(5) | C(30) | C(31) | H(41) | 109.3    |
| C(30) | C(31) | H(42) | 109.3    | C(32) | C(31) | H(41) | 109.4    |

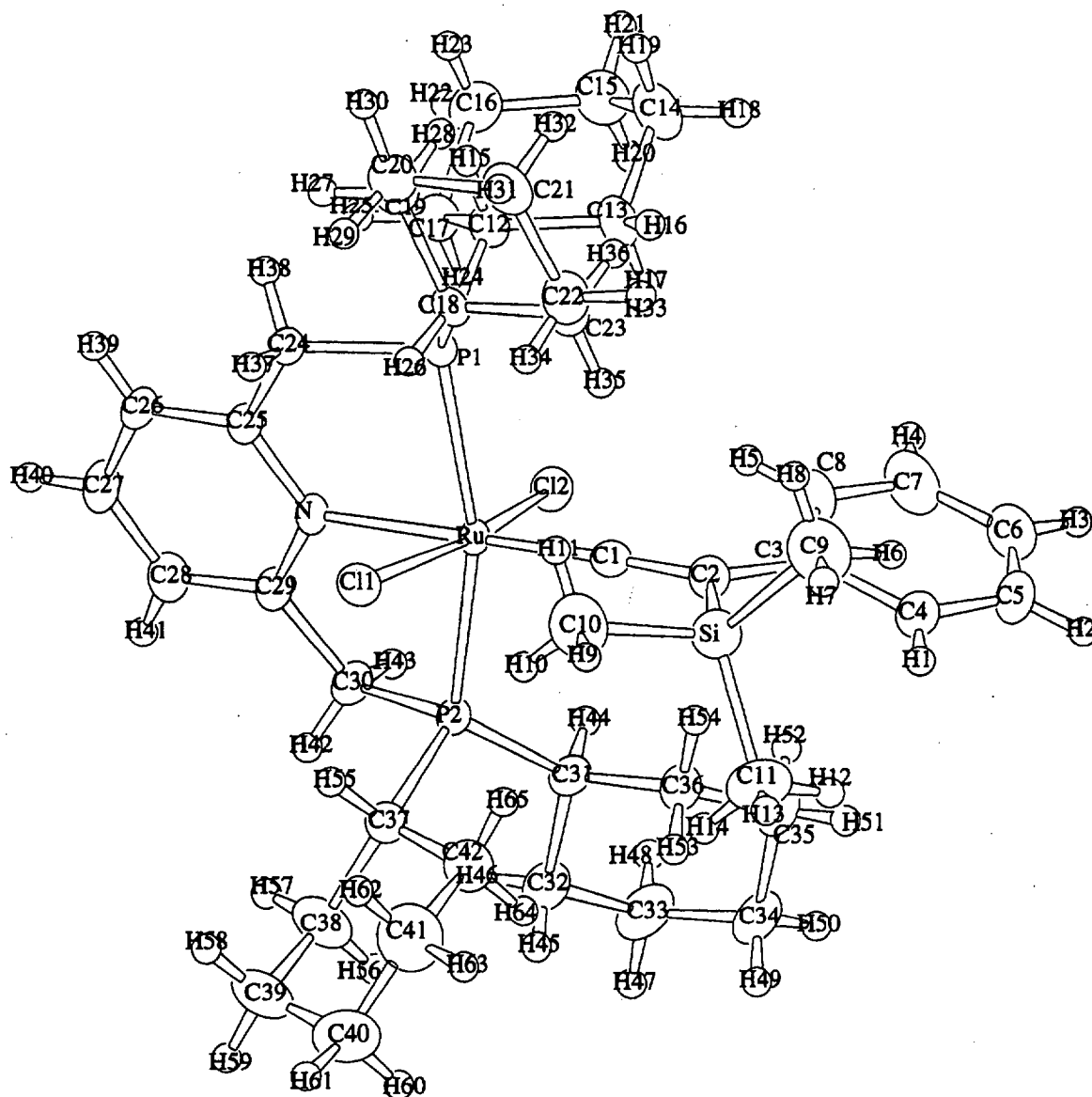


**Table S4.** (*continued*)

| atom  | atom  | atom  | angle    | atom  | atom  | atom  | angle    |
|-------|-------|-------|----------|-------|-------|-------|----------|
| C(32) | C(31) | H(42) | 109.3    | H(41) | C(31) | H(42) | 109.5    |
| C(31) | C(32) | C(33) | 111.2(5) | C(31) | C(32) | H(43) | 109.0    |
| C(31) | C(32) | H(44) | 109.1    | C(33) | C(32) | H(43) | 109.0    |
| C(33) | C(32) | H(44) | 109.1    | H(43) | C(32) | H(44) | 109.5    |
| C(28) | C(33) | C(32) | 112.8(5) | C(28) | C(33) | H(45) | 108.6    |
| C(28) | C(33) | H(46) | 108.6    | C(32) | C(33) | H(45) | 108.6    |
| C(32) | C(33) | H(46) | 108.7    | H(45) | C(33) | H(46) | 109.4    |
| P(2)  | C(34) | C(35) | 114.6(4) | P(2)  | C(34) | C(39) | 114.6(4) |
| P(2)  | C(34) | H(47) | 105.6    | C(35) | C(34) | C(39) | 109.9(5) |
| C(35) | C(34) | H(47) | 105.6    | C(39) | C(34) | H(47) | 105.6    |
| C(34) | C(35) | C(36) | 110.8(5) | C(34) | C(35) | H(48) | 109.2    |
| C(34) | C(35) | H(49) | 109.2    | C(36) | C(35) | H(48) | 109.1    |
| C(36) | C(35) | H(49) | 109.1    | H(48) | C(35) | H(49) | 109.4    |
| C(35) | C(36) | C(37) | 111.5(5) | C(35) | C(36) | H(50) | 108.9    |
| C(35) | C(36) | H(51) | 108.9    | C(37) | C(36) | H(50) | 109.0    |
| C(37) | C(36) | H(51) | 109.1    | H(50) | C(36) | H(51) | 109.5    |
| C(36) | C(37) | C(38) | 111.8(5) | C(36) | C(37) | H(52) | 109.0    |
| C(36) | C(37) | H(53) | 108.9    | C(38) | C(37) | H(52) | 108.9    |
| C(38) | C(37) | H(53) | 108.8    | H(52) | C(37) | H(53) | 109.5    |
| C(37) | C(38) | C(39) | 111.2(5) | C(37) | C(38) | H(54) | 109.1    |
| C(37) | C(38) | H(55) | 109.1    | C(39) | C(38) | H(54) | 109.0    |
| C(39) | C(38) | H(55) | 109.0    | H(54) | C(38) | H(55) | 109.4    |
| C(34) | C(39) | C(38) | 110.9(5) | C(34) | C(39) | H(56) | 109.1    |
| C(34) | C(39) | H(57) | 109.1    | C(38) | C(39) | H(56) | 109.1    |

**Table S4.** (*continued*)

| atom  | atom  | atom  | angle    | atom  | atom  | atom  | angle    |
|-------|-------|-------|----------|-------|-------|-------|----------|
| C(38) | C(39) | H(57) | 109.1    | H(56) | C(39) | H(57) | 109.5    |
| Cl(3) | C(40) | Cl(4) | 81.4(6)  | Cl(3) | C(40) | Cl(5) | 114.0(8) |
| Cl(3) | C(40) | Cl(6) | 119.4(7) | Cl(3) | C(40) | Cl(7) | 104.0(8) |
| Cl(4) | C(40) | Cl(5) | 59.7(8)  | Cl(4) | C(40) | Cl(6) | 86.9(6)  |
| Cl(4) | C(40) | Cl(7) | 107.9(8) | Cl(5) | C(40) | Cl(6) | 27.5(6)  |
| Cl(5) | C(40) | Cl(7) | 52.8(8)  | Cl(6) | C(40) | Cl(7) | 27.7(5)  |



**Figure S2.** Atomic Numbering Scheme for  $\text{RuCl}_2\{\text{=C=C}(\text{SiMe}_3)\text{Ph}\}(\text{dcpmp})$  (**5a**)

**Table S5.** Positional Parameters and Equivalent Isotropic Thermal Parameters for RuCl<sub>2</sub>{=C=C(SiMe<sub>3</sub>)Ph}(dcpmp) (**5a**)

| atom  | x           | y           | z          | B <sub>eq</sub> |
|-------|-------------|-------------|------------|-----------------|
| Ru    | 0.10253(2)  | 0.02249(1)  | 0.21120(1) | 1.317(5)        |
| Cl(1) | 0.15711(7)  | 0.00240(5)  | 0.08473(5) | 2.04(2)         |
| Cl(2) | 0.03278(7)  | 0.06700(5)  | 0.32736(5) | 2.01(2)         |
| P(1)  | -0.06389(7) | -0.02921(5) | 0.17475(5) | 1.49(2)         |
| P(2)  | 0.24294(8)  | 0.10458(5)  | 0.23007(5) | 1.57(2)         |
| Si    | 0.3100(1)   | -0.16586(6) | 0.22334(7) | 2.86(3)         |
| N     | 0.0233(2)   | 0.1149(1)   | 0.1626(2)  | 1.55(6)         |
| C(1)  | 0.1703(3)   | -0.0545(2)  | 0.2521(2)  | 1.64(7)         |
| C(2)  | 0.2208(3)   | -0.1068(2)  | 0.2829(2)  | 2.12(8)         |
| C(3)  | 0.2152(3)   | -0.1177(2)  | 0.3657(2)  | 2.23(8)         |
| C(4)  | 0.2922(3)   | -0.1567(2)  | 0.4051(2)  | 3.05(10)        |
| C(5)  | 0.2838(4)   | -0.1663(3)  | 0.4821(3)  | 3.9(1)          |
| C(6)  | 0.2011(4)   | -0.1358(3)  | 0.5207(2)  | 3.6(1)          |
| C(7)  | 0.1258(4)   | -0.0963(2)  | 0.4835(3)  | 3.7(1)          |
| C(8)  | 0.1317(4)   | -0.0875(2)  | 0.4071(2)  | 2.82(9)         |
| C(9)  | 0.2783(5)   | -0.2597(2)  | 0.2421(3)  | 4.5(1)          |
| C(10) | 0.2892(4)   | -0.1519(3)  | 0.1221(3)  | 3.9(1)          |
| C(11) | 0.4579(4)   | -0.1491(3)  | 0.2429(3)  | 4.6(1)          |
| C(12) | -0.1833(3)  | -0.0357(2)  | 0.2360(2)  | 1.99(7)         |
| C(13) | -0.1602(3)  | -0.0790(2)  | 0.3064(2)  | 2.62(8)         |
| C(14) | -0.2644(4)  | -0.0901(2)  | 0.3519(2)  | 3.4(1)          |
| C(15) | -0.3159(4)  | -0.0208(3)  | 0.3715(2)  | 3.39(10)        |
| C(16) | -0.3346(3)  | 0.0235(2)   | 0.3028(2)  | 3.07(9)         |
| C(17) | -0.2314(3)  | 0.0351(2)   | 0.2580(2)  | 2.53(8)         |

**Table S5.** (*continued*)

| atom  | x          | y          | z         | B <sub>eq</sub> |
|-------|------------|------------|-----------|-----------------|
| C(18) | -0.0642(3) | -0.1100(2) | 0.1189(2) | 1.62(7)         |
| C(19) | -0.1718(3) | -0.1278(2) | 0.0808(2) | 2.16(8)         |
| C(20) | -0.1564(3) | -0.1876(2) | 0.0258(2) | 2.55(8)         |
| C(21) | -0.1066(4) | -0.2517(2) | 0.0631(2) | 2.77(9)         |
| C(22) | -0.0032(4) | -0.2345(2) | 0.1054(2) | 2.65(9)         |
| C(23) | -0.0199(3) | -0.1742(2) | 0.1595(2) | 2.15(8)         |
| C(24) | -0.1066(3) | 0.0347(2)  | 0.1040(2) | 1.81(7)         |
| C(25) | -0.0667(3) | 0.1074(2)  | 0.1191(2) | 1.66(7)         |
| C(26) | -0.1163(3) | 0.1645(2)  | 0.0859(2) | 2.03(7)         |
| C(27) | -0.0734(3) | 0.2301(2)  | 0.0973(2) | 2.39(8)         |
| C(28) | 0.0184(3)  | 0.2376(2)  | 0.1412(2) | 2.18(8)         |
| C(29) | 0.0651(3)  | 0.1792(2)  | 0.1737(2) | 1.68(7)         |
| C(30) | 0.1620(3)  | 0.1856(2)  | 0.2243(2) | 2.03(8)         |
| C(31) | 0.3039(3)  | 0.1128(2)  | 0.3239(2) | 1.87(7)         |
| C(32) | 0.3814(4)  | 0.1748(2)  | 0.3375(2) | 2.83(9)         |
| C(33) | 0.4087(4)  | 0.1809(2)  | 0.4206(3) | 3.4(1)          |
| C(34) | 0.4538(4)  | 0.1133(2)  | 0.4524(2) | 3.02(9)         |
| C(35) | 0.3794(4)  | 0.0517(2)  | 0.4360(2) | 3.01(9)         |
| C(36) | 0.3556(3)  | 0.0457(2)  | 0.3532(2) | 2.33(8)         |
| C(37) | 0.3451(3)  | 0.1106(2)  | 0.1559(2) | 2.12(8)         |
| C(38) | 0.4070(4)  | 0.1794(3)  | 0.1439(3) | 3.8(1)          |
| C(39) | 0.4795(5)  | 0.1742(3)  | 0.0751(3) | 4.8(1)          |
| C(40) | 0.5569(4)  | 0.1133(4)  | 0.0810(3) | 5.5(2)          |
| C(41) | 0.4960(5)  | 0.0451(3)  | 0.0929(3) | 5.2(1)          |

**Table S5.** (*continued*)

| atom  | x         | y         | z         | B <sub>eq</sub> |
|-------|-----------|-----------|-----------|-----------------|
| C(42) | 0.4240(4) | 0.0495(3) | 0.1617(2) | 3.20(10)        |
| H(1)  | 0.3513    | -0.1771   | 0.3792    | 3.6611          |
| H(2)  | 0.3359    | -0.1942   | 0.5076    | 4.7116          |
| H(3)  | 0.1959    | -0.1419   | 0.5731    | 4.2799          |
| H(4)  | 0.0687    | -0.0746   | 0.5104    | 4.4188          |
| H(5)  | 0.0779    | -0.0605   | 0.3823    | 3.3893          |
| H(6)  | 0.2893    | -0.2694   | 0.2935    | 5.3437          |
| H(7)  | 0.3248    | -0.2885   | 0.2133    | 5.3437          |
| H(8)  | 0.2048    | -0.2689   | 0.2290    | 5.3437          |
| H(9)  | 0.3368    | -0.1815   | 0.0951    | 4.6499          |
| H(10) | 0.3040    | -0.1046   | 0.1102    | 4.6499          |
| H(11) | 0.2161    | -0.1626   | 0.1092    | 4.6499          |
| H(12) | 0.4722    | -0.1557   | 0.2945    | 5.5175          |
| H(13) | 0.5009    | -0.1806   | 0.2147    | 5.5175          |
| H(14) | 0.4754    | -0.1026   | 0.2294    | 5.5175          |
| H(15) | -0.2379   | -0.0598   | 0.2086    | 2.3857          |
| H(16) | -0.1320   | -0.1232   | 0.2922    | 3.1381          |
| H(17) | -0.1081   | -0.0552   | 0.3363    | 3.1381          |
| H(18) | -0.2468   | -0.1144   | 0.3965    | 4.0333          |
| H(19) | -0.3145   | -0.1169   | 0.3234    | 4.0333          |
| H(20) | -0.2692   | 0.0036    | 0.4049    | 4.0622          |
| H(21) | -0.3837   | -0.0291   | 0.3950    | 4.0622          |
| H(22) | -0.3620   | 0.0676    | 0.3178    | 3.6809          |
| H(23) | -0.3866   | 0.0009    | 0.2718    | 3.6809          |

Table S5. (continued)

| atom  | x       | y       | z       | B <sub>eq</sub> |
|-------|---------|---------|---------|-----------------|
| H(24) | -0.1802 | 0.0602  | 0.2873  | 3.0305          |
| H(25) | -0.2483 | 0.0611  | 0.2143  | 3.0305          |
| H(26) | -0.0146 | -0.1016 | 0.0796  | 1.9434          |
| H(27) | -0.1979 | -0.0879 | 0.0548  | 2.5961          |
| H(28) | -0.2232 | -0.1412 | 0.1174  | 2.5961          |
| H(29) | -0.1097 | -0.1725 | -0.0130 | 3.0546          |
| H(30) | -0.2252 | -0.1999 | 0.0053  | 3.0546          |
| H(31) | -0.0904 | -0.2852 | 0.0258  | 3.3186          |
| H(32) | -0.1578 | -0.2706 | 0.0969  | 3.3186          |
| H(33) | 0.0193  | -0.2746 | 0.1326  | 3.1846          |
| H(34) | 0.0516  | -0.2221 | 0.0708  | 3.1846          |
| H(35) | 0.0477  | -0.1628 | 0.1823  | 2.5807          |
| H(36) | -0.0702 | -0.1880 | 0.1967  | 2.5807          |
| H(37) | -0.0793 | 0.0201  | 0.0571  | 2.1757          |
| H(38) | -0.1838 | 0.0355  | 0.1022  | 2.1757          |
| H(39) | -0.1792 | 0.1585  | 0.0556  | 2.4310          |
| H(40) | -0.1067 | 0.2698  | 0.0752  | 2.8704          |
| H(41) | 0.0492  | 0.2825  | 0.1491  | 2.6209          |
| H(42) | 0.2073  | 0.2219  | 0.2063  | 2.4373          |
| H(43) | 0.1374  | 0.1971  | 0.2729  | 2.4373          |
| H(44) | 0.2441  | 0.1211  | 0.3559  | 2.2482          |
| H(45) | 0.4465  | 0.1677  | 0.3103  | 3.3948          |
| H(46) | 0.3474  | 0.2166  | 0.3212  | 3.3948          |
| H(47) | 0.4613  | 0.2167  | 0.4272  | 4.0296          |

**Table S5.** (*continued*)

| atom  | x      | y      | z      | B <sub>eq</sub> |
|-------|--------|--------|--------|-----------------|
| H(48) | 0.3444 | 0.1928 | 0.4468 | 4.0296          |
| H(49) | 0.5229 | 0.1046 | 0.4309 | 3.6217          |
| H(50) | 0.4617 | 0.1181 | 0.5048 | 3.6217          |
| H(51) | 0.4136 | 0.0101 | 0.4527 | 3.6136          |
| H(52) | 0.3130 | 0.0580 | 0.4619 | 3.6136          |
| H(53) | 0.4216 | 0.0374 | 0.3274 | 2.7917          |
| H(54) | 0.3071 | 0.0079 | 0.3449 | 2.7917          |
| H(55) | 0.3059 | 0.1031 | 0.1108 | 2.5446          |
| H(56) | 0.4509 | 0.1887 | 0.1865 | 4.5858          |
| H(57) | 0.3563 | 0.2162 | 0.1371 | 4.5858          |
| H(58) | 0.4349 | 0.1683 | 0.0321 | 5.7462          |
| H(59) | 0.5203 | 0.2161 | 0.0705 | 5.7462          |
| H(60) | 0.6048 | 0.1209 | 0.1219 | 6.5987          |
| H(61) | 0.5976 | 0.1102 | 0.0363 | 6.5987          |
| H(62) | 0.4519 | 0.0357 | 0.0504 | 6.2455          |
| H(63) | 0.5471 | 0.0083 | 0.0994 | 6.2455          |
| H(64) | 0.4687 | 0.0556 | 0.2046 | 3.8423          |
| H(65) | 0.3838 | 0.0075 | 0.1663 | 3.8423          |

$$B_{eq} = (8\pi^2/3)\sum_i\sum_j[U_{ij}(a_i^*a_j^*)(\mathbf{a}_i\cdot\mathbf{a}_j)] = (4/3)\sum_i\sum_j[\beta_{ij}(\mathbf{a}_i\cdot\mathbf{a}_j)]$$



**Table S6.** Anisotropic Thermal Parameters for RuCl<sub>2</sub>{=C=C(SiMe<sub>3</sub>)Ph}(dcpmp) (**5a**)

| atom  | U <sub>11</sub> | U <sub>22</sub> | U <sub>33</sub> | U <sub>12</sub> | U <sub>13</sub> | U <sub>23</sub> |
|-------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Ru    | 0.0200(1)       | 0.0156(1)       | 0.0143(1)       | 0.0007(1)       | -0.00197(9)     | 0.0000(1)       |
| Cl(1) | 0.0289(5)       | 0.0307(5)       | 0.0179(4)       | -0.0042(3)      | 0.0023(3)       | -0.0040(3)      |
| Cl(2) | 0.0287(5)       | 0.0279(5)       | 0.0200(4)       | 0.0027(4)       | 0.0011(3)       | -0.0042(3)      |
| P(1)  | 0.0204(4)       | 0.0189(4)       | 0.0173(4)       | -0.0008(4)      | -0.0004(3)      | 0.0013(3)       |
| P(2)  | 0.0215(5)       | 0.0188(4)       | 0.0192(4)       | -0.0007(3)      | -0.0038(4)      | -0.0001(3)      |
| Si    | 0.0355(7)       | 0.0276(6)       | 0.0455(7)       | 0.0058(5)       | 0.0014(5)       | 0.0003(5)       |
| N     | 0.024(2)        | 0.018(1)        | 0.017(1)        | 0.002(1)        | -0.002(1)       | 0.001(1)        |
| C(1)  | 0.023(2)        | 0.022(2)        | 0.018(2)        | -0.001(1)       | 0.000(1)        | -0.005(1)       |
| C(2)  | 0.029(2)        | 0.021(2)        | 0.030(2)        | -0.001(1)       | -0.003(2)       | 0.002(1)        |
| C(3)  | 0.033(2)        | 0.022(2)        | 0.029(2)        | -0.006(2)       | -0.011(2)       | 0.004(2)        |
| C(4)  | 0.034(2)        | 0.038(2)        | 0.044(2)        | -0.005(2)       | -0.010(2)       | 0.013(2)        |
| C(5)  | 0.052(3)        | 0.049(3)        | 0.048(3)        | -0.020(2)       | -0.030(2)       | 0.023(2)        |
| C(6)  | 0.064(3)        | 0.046(3)        | 0.026(2)        | -0.022(2)       | -0.011(2)       | 0.001(2)        |
| C(7)  | 0.070(3)        | 0.033(2)        | 0.037(2)        | -0.008(2)       | 0.005(2)        | -0.003(2)       |
| C(8)  | 0.045(3)        | 0.029(2)        | 0.033(2)        | 0.004(2)        | 0.001(2)        | 0.009(2)        |
| C(9)  | 0.069(4)        | 0.022(2)        | 0.078(4)        | 0.006(2)        | 0.003(3)        | -0.002(2)       |
| C(10) | 0.058(3)        | 0.045(3)        | 0.045(3)        | 0.011(2)        | 0.011(2)        | -0.004(2)       |
| C(11) | 0.032(3)        | 0.052(3)        | 0.091(4)        | 0.007(2)        | -0.002(3)       | 0.007(3)        |
| C(12) | 0.027(2)        | 0.023(2)        | 0.025(2)        | 0.000(1)        | 0.002(1)        | 0.002(1)        |
| C(13) | 0.039(2)        | 0.031(2)        | 0.029(2)        | 0.006(2)        | 0.009(2)        | 0.010(2)        |
| C(14) | 0.055(3)        | 0.042(3)        | 0.031(2)        | -0.005(2)       | 0.011(2)        | 0.007(2)        |
| C(15) | 0.039(2)        | 0.057(3)        | 0.033(2)        | 0.005(2)        | 0.013(2)        | 0.001(2)        |
| C(16) | 0.030(2)        | 0.048(3)        | 0.038(2)        | 0.009(2)        | 0.006(2)        | -0.002(2)       |
| C(17) | 0.031(2)        | 0.035(2)        | 0.031(2)        | 0.004(2)        | 0.005(2)        | 0.005(2)        |

**Table S6.** (*continued*)

| atom  | U <sub>11</sub> | U <sub>22</sub> | U <sub>33</sub> | U <sub>12</sub> | U <sub>13</sub> | U <sub>23</sub> |
|-------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| C(18) | 0.024(2)        | 0.019(2)        | 0.019(2)        | -0.003(1)       | 0.004(1)        | 0.000(1)        |
| C(19) | 0.028(2)        | 0.027(2)        | 0.027(2)        | -0.002(2)       | -0.004(2)       | -0.001(2)       |
| C(20) | 0.037(2)        | 0.032(2)        | 0.028(2)        | -0.007(2)       | -0.001(2)       | -0.005(2)       |
| C(21) | 0.049(3)        | 0.027(2)        | 0.029(2)        | -0.009(2)       | 0.002(2)        | -0.005(2)       |
| C(22) | 0.044(2)        | 0.020(2)        | 0.037(2)        | -0.002(2)       | -0.005(2)       | -0.002(2)       |
| C(23) | 0.035(2)        | 0.020(2)        | 0.027(2)        | -0.001(2)       | -0.004(2)       | -0.002(1)       |
| C(24) | 0.025(2)        | 0.023(2)        | 0.020(2)        | -0.005(1)       | -0.006(1)       | 0.004(1)        |
| C(25) | 0.024(2)        | 0.021(2)        | 0.018(2)        | 0.002(1)        | -0.002(1)       | 0.001(1)        |
| C(26) | 0.022(2)        | 0.031(2)        | 0.024(2)        | 0.006(2)        | -0.004(1)       | 0.003(2)        |
| C(27) | 0.038(2)        | 0.024(2)        | 0.029(2)        | 0.009(2)        | -0.005(2)       | 0.004(2)        |
| C(28) | 0.038(2)        | 0.017(2)        | 0.029(2)        | 0.003(2)        | -0.002(2)       | -0.001(1)       |
| C(29) | 0.026(2)        | 0.020(2)        | 0.017(2)        | 0.002(1)        | -0.002(1)       | -0.002(1)       |
| C(30) | 0.028(2)        | 0.019(2)        | 0.030(2)        | 0.002(1)        | -0.008(2)       | -0.003(1)       |
| C(31) | 0.023(2)        | 0.026(2)        | 0.022(2)        | 0.001(1)        | -0.003(1)       | -0.004(1)       |
| C(32) | 0.041(2)        | 0.027(2)        | 0.039(2)        | -0.006(2)       | -0.016(2)       | -0.003(2)       |
| C(33) | 0.043(3)        | 0.045(3)        | 0.040(2)        | 0.001(2)        | -0.017(2)       | -0.014(2)       |
| C(34) | 0.036(2)        | 0.052(3)        | 0.026(2)        | 0.002(2)        | -0.013(2)       | -0.006(2)       |
| C(35) | 0.035(2)        | 0.051(3)        | 0.028(2)        | -0.002(2)       | -0.011(2)       | 0.006(2)        |
| C(36) | 0.034(2)        | 0.029(2)        | 0.025(2)        | -0.003(2)       | -0.008(2)       | 0.001(2)        |
| C(37) | 0.026(2)        | 0.034(2)        | 0.021(2)        | -0.005(2)       | -0.001(1)       | 0.001(2)        |
| C(38) | 0.054(3)        | 0.047(3)        | 0.044(3)        | -0.022(2)       | 0.005(2)        | 0.002(2)        |
| C(39) | 0.053(3)        | 0.085(4)        | 0.044(3)        | -0.033(3)       | 0.004(2)        | 0.017(3)        |
| C(40) | 0.039(3)        | 0.133(6)        | 0.037(3)        | -0.016(3)       | 0.012(2)        | 0.011(3)        |
| C(41) | 0.053(3)        | 0.099(5)        | 0.046(3)        | 0.016(3)        | 0.025(3)        | 0.004(3)        |

**Table S6.** (*continued*)

| atom  | U <sub>11</sub> | U <sub>22</sub> | U <sub>33</sub> | U <sub>12</sub> | U <sub>13</sub> | U <sub>23</sub> |
|-------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| C(42) | 0.032(2)        | 0.054(3)        | 0.035(2)        | 0.009(2)        | 0.012(2)        | 0.006(2)        |

**Table S7.** Bond Distances (Å) for RuCl<sub>2</sub>{=C=C(SiMe<sub>3</sub>)Ph}(dcpmp) (**5a**)

| atom  | atom  | distance  | atom  | atom  | distance  |
|-------|-------|-----------|-------|-------|-----------|
| Ru    | Cl(1) | 2.4152(9) | Ru    | Cl(2) | 2.4023(9) |
| Ru    | P(1)  | 2.3595(9) | Ru    | P(2)  | 2.3635(9) |
| Ru    | N     | 2.200(3)  | Ru    | C(1)  | 1.845(4)  |
| P(1)  | C(12) | 1.847(4)  | P(1)  | C(19) | 1.846(4)  |
| P(1)  | C(25) | 1.840(4)  | P(2)  | C(18) | 1.839(3)  |
| P(2)  | C(31) | 1.844(3)  | P(2)  | C(37) | 1.844(4)  |
| Si    | C(2)  | 1.909(4)  | Si    | C(9)  | 1.853(5)  |
| Si    | C(10) | 1.871(5)  | Si    | C(11) | 1.879(5)  |
| N     | C(13) | 1.350(4)  | N     | C(17) | 1.358(4)  |
| C(1)  | C(2)  | 1.301(5)  | C(2)  | C(3)  | 1.502(5)  |
| C(3)  | C(4)  | 1.397(6)  | C(3)  | C(8)  | 1.396(5)  |
| C(4)  | C(5)  | 1.383(6)  | C(4)  | H(1)  | 0.95      |
| C(5)  | C(6)  | 1.368(7)  | C(5)  | H(2)  | 0.96      |
| C(6)  | C(7)  | 1.367(7)  | C(6)  | H(3)  | 0.95      |
| C(7)  | C(8)  | 1.398(6)  | C(7)  | H(4)  | 0.95      |
| C(8)  | H(5)  | 0.95      | C(9)  | H(6)  | 0.95      |
| C(9)  | H(7)  | 0.96      | C(9)  | H(8)  | 0.95      |
| C(10) | H(9)  | 0.95      | C(10) | H(10) | 0.95      |
| C(10) | H(11) | 0.95      | C(11) | H(12) | 0.94      |
| C(11) | H(13) | 0.96      | C(11) | H(14) | 0.96      |
| C(12) | C(13) | 1.501(5)  | C(12) | H(15) | 0.95      |
| C(12) | H(16) | 0.95      | C(13) | C(14) | 1.386(5)  |
| C(14) | C(15) | 1.381(5)  | C(14) | H(17) | 0.95      |
| C(15) | C(16) | 1.379(5)  | C(15) | H(18) | 0.95      |

**Table S7.** *(continued)*

| atom  | atom  | distance | atom  | atom  | distance |
|-------|-------|----------|-------|-------|----------|
| C(16) | C(17) | 1.386(5) | C(16) | H(19) | 0.95     |
| C(17) | C(18) | 1.503(5) | C(18) | H(20) | 0.95     |
| C(18) | H(21) | 0.95     | C(19) | C(20) | 1.528(5) |
| C(19) | C(24) | 1.542(5) | C(19) | H(22) | 0.95     |
| C(20) | C(21) | 1.519(5) | C(20) | H(23) | 0.95     |
| C(20) | H(24) | 0.96     | C(21) | C(22) | 1.521(6) |
| C(21) | H(25) | 0.95     | C(21) | H(26) | 0.95     |
| C(22) | C(23) | 1.519(6) | C(22) | H(27) | 0.95     |
| C(22) | H(28) | 0.95     | C(23) | C(24) | 1.531(6) |
| C(23) | H(29) | 0.95     | C(23) | H(30) | 0.95     |
| C(24) | H(31) | 0.94     | C(24) | H(32) | 0.96     |
| C(25) | C(26) | 1.524(6) | C(25) | C(30) | 1.538(6) |
| C(25) | H(33) | 0.95     | C(26) | C(27) | 1.527(6) |
| C(26) | H(34) | 0.95     | C(26) | H(35) | 0.95     |
| C(27) | C(28) | 1.524(9) | C(27) | H(36) | 0.95     |
| C(27) | H(37) | 0.94     | C(28) | C(29) | 1.509(9) |
| C(28) | H(38) | 0.95     | C(28) | H(39) | 0.95     |
| C(29) | C(30) | 1.532(7) | C(29) | H(40) | 0.95     |
| C(29) | H(41) | 0.94     | C(30) | H(42) | 0.95     |
| C(30) | H(43) | 0.95     | C(31) | C(32) | 1.530(5) |
| C(31) | C(36) | 1.526(5) | C(31) | H(44) | 0.95     |
| C(32) | C(33) | 1.525(5) | C(32) | H(45) | 0.95     |
| C(32) | H(46) | 0.95     | C(33) | C(34) | 1.513(6) |
| C(33) | H(47) | 0.95     | C(33) | H(48) | 0.95     |

**Table S7.** (*continued*)

| atom  | atom  | distance | atom  | atom  | distance |
|-------|-------|----------|-------|-------|----------|
| C(34) | C(35) | 1.526(6) | C(34) | H(49) | 0.95     |
| C(34) | H(50) | 0.95     | C(35) | C(36) | 1.525(5) |
| C(35) | H(51) | 0.95     | C(35) | H(52) | 0.95     |
| C(36) | H(53) | 0.95     | C(36) | H(54) | 0.95     |
| C(37) | C(38) | 1.538(5) | C(37) | C(42) | 1.534(5) |
| C(37) | H(55) | 0.95     | C(38) | C(39) | 1.539(6) |
| C(38) | H(56) | 0.95     | C(38) | H(57) | 0.94     |
| C(39) | C(40) | 1.514(6) | C(39) | H(58) | 0.94     |
| C(39) | H(59) | 0.95     | C(40) | C(41) | 1.515(6) |
| C(40) | H(60) | 0.95     | C(40) | H(61) | 0.94     |
| C(41) | C(42) | 1.522(6) | C(41) | H(62) | 0.95     |
| C(41) | H(63) | 0.95     | C(42) | H(64) | 0.95     |
| C(42) | H(65) | 0.95     |       |       |          |

**Table S8.** Bond Angles (deg) for  $\text{RuCl}_2\{\text{=C=C}(\text{SiMe}_3)\text{Ph}\}(\text{dcpmp})$  (**5a**)

| atom  | atom | atom  | angle     | atom  | atom | atom  | angle     |
|-------|------|-------|-----------|-------|------|-------|-----------|
| Cl(1) | Ru   | Cl(2) | 167.22(3) | Cl(1) | Ru   | P(1)  | 84.50(3)  |
| Cl(1) | Ru   | P(2)  | 94.32(3)  | Cl(1) | Ru   | N     | 84.23(8)  |
| Cl(1) | Ru   | C(1)  | 95.8(1)   | Cl(2) | Ru   | P(1)  | 91.95(3)  |
| Cl(2) | Ru   | P(2)  | 85.28(3)  | Cl(2) | Ru   | N     | 83.09(8)  |
| Cl(2) | Ru   | C(1)  | 96.8(1)   | P(1)  | Ru   | P(2)  | 162.10(3) |
| P(1)  | Ru   | N     | 80.94(8)  | P(1)  | Ru   | C(1)  | 98.5(1)   |
| P(2)  | Ru   | N     | 81.18(8)  | P(2)  | Ru   | C(1)  | 99.4(1)   |
| N     | Ru   | C(1)  | 179.4(1)  | Ru    | P(1) | C(12) | 99.1(1)   |
| Ru    | P(1) | C(19) | 118.8(1)  | Ru    | P(1) | C(25) | 116.1(1)  |
| C(12) | P(1) | C(19) | 101.2(2)  | C(12) | P(1) | C(25) | 106.1(2)  |
| C(19) | P(1) | C(25) | 112.3(2)  | Ru    | P(2) | C(18) | 98.9(1)   |
| Ru    | P(2) | C(31) | 120.1(1)  | Ru    | P(2) | C(37) | 123.7(1)  |
| C(18) | P(2) | C(31) | 100.6(2)  | C(18) | P(2) | C(37) | 103.4(2)  |
| C(31) | P(2) | C(37) | 105.6(2)  | C(2)  | Si   | C(9)  | 112.8(2)  |
| C(2)  | Si   | C(10) | 110.4(2)  | C(2)  | Si   | C(11) | 110.7(2)  |
| C(9)  | Si   | C(10) | 106.7(2)  | C(9)  | Si   | C(11) | 106.7(3)  |
| C(10) | Si   | C(11) | 109.4(2)  | Ru    | N    | C(13) | 120.6(2)  |
| Ru    | N    | C(17) | 120.1(2)  | C(13) | N    | C(17) | 119.3(3)  |
| Ru    | C(1) | C(2)  | 177.2(3)  | Si    | C(2) | C(1)  | 119.5(3)  |
| Si    | C(2) | C(3)  | 120.1(3)  | C(1)  | C(2) | C(3)  | 120.3(3)  |
| C(2)  | C(3) | C(4)  | 120.4(3)  | C(2)  | C(3) | C(8)  | 122.8(4)  |
| C(4)  | C(3) | C(8)  | 116.8(4)  | C(3)  | C(4) | C(5)  | 121.4(4)  |
| C(3)  | C(4) | H(1)  | 119.7     | C(5)  | C(4) | H(1)  | 119.0     |
| C(4)  | C(5) | C(6)  | 120.8(5)  | C(4)  | C(5) | H(2)  | 120.0     |

**Table S8.** (*continued*)

| atom  | atom  | atom  | angle    | atom  | atom  | atom  | angle    |
|-------|-------|-------|----------|-------|-------|-------|----------|
| C(6)  | C(5)  | H(2)  | 119.2    | C(5)  | C(6)  | C(7)  | 119.6(4) |
| C(5)  | C(6)  | H(3)  | 120.0    | C(7)  | C(6)  | H(3)  | 120.4    |
| C(6)  | C(7)  | C(8)  | 120.3(4) | C(6)  | C(7)  | H(4)  | 119.3    |
| C(8)  | C(7)  | H(4)  | 120.5    | C(3)  | C(8)  | C(7)  | 121.2(4) |
| C(3)  | C(8)  | H(5)  | 119.9    | C(7)  | C(8)  | H(5)  | 118.9    |
| Si    | C(9)  | H(6)  | 109.8    | Si    | C(9)  | H(7)  | 109.4    |
| Si    | C(9)  | H(8)  | 109.7    | H(6)  | C(9)  | H(7)  | 109.2    |
| H(6)  | C(9)  | H(8)  | 109.6    | H(7)  | C(9)  | H(8)  | 109.0    |
| Si    | C(10) | H(9)  | 109.6    | Si    | C(10) | H(10) | 109.6    |
| Si    | C(10) | H(11) | 109.7    | H(9)  | C(10) | H(10) | 109.2    |
| H(9)  | C(10) | H(11) | 109.4    | H(10) | C(10) | H(11) | 109.4    |
| Si    | C(11) | H(12) | 110.5    | Si    | C(11) | H(13) | 109.4    |
| Si    | C(11) | H(14) | 109.4    | H(12) | C(11) | H(13) | 109.8    |
| H(12) | C(11) | H(14) | 109.7    | H(13) | C(11) | H(14) | 108.0    |
| P(1)  | C(12) | C(13) | 113.0(2) | P(1)  | C(12) | H(15) | 108.6    |
| P(1)  | C(12) | H(16) | 108.3    | C(13) | C(12) | H(15) | 108.8    |
| C(13) | C(12) | H(16) | 108.5    | H(15) | C(12) | H(16) | 109.5    |
| N     | C(13) | C(12) | 117.7(3) | N     | C(13) | C(14) | 121.3(3) |
| C(12) | C(13) | C(14) | 121.0(3) | C(13) | C(14) | C(15) | 119.4(3) |
| C(13) | C(14) | H(17) | 120.3    | C(15) | C(14) | H(17) | 120.3    |
| C(14) | C(15) | C(16) | 119.4(3) | C(14) | C(15) | H(18) | 119.9    |
| C(16) | C(15) | H(18) | 120.6    | C(15) | C(16) | C(17) | 119.2(3) |
| C(15) | C(16) | H(19) | 120.4    | C(17) | C(16) | H(19) | 120.3    |
| N     | C(17) | C(16) | 121.3(3) | N     | C(17) | C(18) | 117.8(3) |



**Table S8.** *(continued)*

| atom  | atom  | atom  | angle    | atom  | atom  | atom  | angle    |
|-------|-------|-------|----------|-------|-------|-------|----------|
| C(16) | C(17) | C(18) | 120.8(3) | P(2)  | C(18) | C(17) | 113.7(2) |
| P(2)  | C(18) | H(20) | 108.4    | P(2)  | C(18) | H(21) | 108.7    |
| C(17) | C(18) | H(20) | 108.1    | C(17) | C(18) | H(21) | 108.3    |
| H(20) | C(18) | H(21) | 109.6    | P(1)  | C(19) | C(20) | 114.1(2) |
| P(1)  | C(19) | C(24) | 117.3(3) | P(1)  | C(19) | H(22) | 104.8    |
| C(20) | C(19) | C(24) | 109.8(3) | C(20) | C(19) | H(22) | 104.5    |
| C(24) | C(19) | H(22) | 105.0    | C(19) | C(20) | C(21) | 110.5(3) |
| C(19) | C(20) | H(23) | 109.4    | C(19) | C(20) | H(24) | 109.3    |
| C(21) | C(20) | H(23) | 109.3    | C(21) | C(20) | H(24) | 109.4    |
| H(23) | C(20) | H(24) | 109.0    | C(20) | C(21) | C(22) | 111.1(3) |
| C(20) | C(21) | H(25) | 109.0    | C(20) | C(21) | H(26) | 109.3    |
| C(22) | C(21) | H(25) | 108.7    | C(22) | C(21) | H(26) | 108.6    |
| H(25) | C(21) | H(26) | 110.2    | C(21) | C(22) | C(23) | 111.8(3) |
| C(21) | C(22) | H(27) | 108.5    | C(21) | C(22) | H(28) | 108.7    |
| C(23) | C(22) | H(27) | 108.9    | C(23) | C(22) | H(28) | 109.1    |
| H(27) | C(22) | H(28) | 109.8    | C(22) | C(23) | C(24) | 112.2(4) |
| C(22) | C(23) | H(29) | 109.0    | C(22) | C(23) | H(30) | 108.6    |
| C(24) | C(23) | H(29) | 109.1    | C(24) | C(23) | H(30) | 108.4    |
| H(29) | C(23) | H(30) | 109.6    | C(19) | C(24) | C(23) | 110.2(3) |
| C(19) | C(24) | H(31) | 109.7    | C(19) | C(24) | H(32) | 108.6    |
| C(23) | C(24) | H(31) | 109.8    | C(23) | C(24) | H(32) | 109.0    |
| H(31) | C(24) | H(32) | 109.6    | P(1)  | C(25) | C(26) | 109.8(3) |
| P(1)  | C(25) | C(30) | 119.7(3) | P(1)  | C(25) | H(33) | 105.1    |
| C(26) | C(25) | C(30) | 110.6(4) | C(26) | C(25) | H(33) | 105.3    |

Table S8. (continued)

| atom  | atom  | atom  | angle    | atom  | atom  | atom  | angle    |
|-------|-------|-------|----------|-------|-------|-------|----------|
| C(30) | C(25) | H(33) | 105.1    | C(25) | C(26) | C(27) | 111.1(4) |
| C(25) | C(26) | H(34) | 109.2    | C(25) | C(26) | H(35) | 108.7    |
| C(27) | C(26) | H(34) | 109.4    | C(27) | C(26) | H(35) | 108.9    |
| H(34) | C(26) | H(35) | 109.5    | C(26) | C(27) | C(28) | 110.7(5) |
| C(26) | C(27) | H(36) | 108.7    | C(26) | C(27) | H(37) | 109.0    |
| C(28) | C(27) | H(36) | 109.1    | C(28) | C(27) | H(37) | 109.2    |
| H(36) | C(27) | H(37) | 110.2    | C(27) | C(28) | C(29) | 111.3(4) |
| C(27) | C(28) | H(38) | 109.5    | C(27) | C(28) | H(39) | 108.9    |
| C(29) | C(28) | H(38) | 109.4    | C(29) | C(28) | H(39) | 108.7    |
| H(38) | C(28) | H(39) | 108.9    | C(28) | C(29) | C(30) | 111.3(4) |
| C(28) | C(29) | H(40) | 108.6    | C(28) | C(29) | H(41) | 108.9    |
| C(30) | C(29) | H(40) | 108.4    | C(30) | C(29) | H(41) | 109.3    |
| H(40) | C(29) | H(41) | 110.3    | C(25) | C(30) | C(29) | 110.4(4) |
| C(25) | C(30) | H(42) | 108.6    | C(25) | C(30) | H(43) | 109.1    |
| C(29) | C(30) | H(42) | 109.1    | C(29) | C(30) | H(43) | 110.1    |
| H(42) | C(30) | H(43) | 109.5    | P(2)  | C(31) | C(32) | 114.7(2) |
| P(2)  | C(31) | C(36) | 115.5(3) | P(2)  | C(31) | H(44) | 105.1    |
| C(32) | C(31) | C(36) | 109.8(3) | C(32) | C(31) | H(44) | 105.4    |
| C(36) | C(31) | H(44) | 105.2    | C(31) | C(32) | C(33) | 110.8(3) |
| C(31) | C(32) | H(45) | 109.0    | C(31) | C(32) | H(46) | 109.2    |
| C(33) | C(32) | H(45) | 109.1    | C(33) | C(32) | H(46) | 109.1    |
| H(45) | C(32) | H(46) | 109.5    | C(32) | C(33) | C(34) | 111.6(3) |
| C(32) | C(33) | H(47) | 109.0    | C(32) | C(33) | H(48) | 109.1    |
| C(34) | C(33) | H(47) | 109.0    | C(34) | C(33) | H(48) | 109.1    |

Table S8. (continued)

| atom  | atom  | atom  | angle    | atom  | atom  | atom  | angle    |
|-------|-------|-------|----------|-------|-------|-------|----------|
| H(47) | C(33) | H(48) | 109.0    | C(33) | C(34) | C(35) | 112.3(3) |
| C(33) | C(34) | H(49) | 109.0    | C(33) | C(34) | H(50) | 108.6    |
| C(35) | C(34) | H(49) | 108.8    | C(35) | C(34) | H(50) | 108.3    |
| H(49) | C(34) | H(50) | 109.7    | C(34) | C(35) | C(36) | 111.8(3) |
| C(34) | C(35) | H(51) | 108.5    | C(34) | C(35) | H(52) | 108.8    |
| C(36) | C(35) | H(51) | 108.8    | C(36) | C(35) | H(52) | 109.4    |
| H(51) | C(35) | H(52) | 109.4    | C(31) | C(36) | C(35) | 110.4(3) |
| C(31) | C(36) | H(53) | 109.6    | C(31) | C(36) | H(54) | 109.8    |
| C(35) | C(36) | H(53) | 108.9    | C(35) | C(36) | H(54) | 109.1    |
| H(53) | C(36) | H(54) | 109.1    | P(2)  | C(37) | C(38) | 112.5(3) |
| P(2)  | C(37) | C(42) | 113.8(3) | P(2)  | C(37) | H(55) | 106.3    |
| C(38) | C(37) | C(42) | 109.6(3) | C(38) | C(37) | H(55) | 107.1    |
| C(42) | C(37) | H(55) | 107.0    | C(37) | C(38) | C(39) | 111.1(3) |
| C(37) | C(38) | H(56) | 109.0    | C(37) | C(38) | H(57) | 109.5    |
| C(39) | C(38) | H(56) | 108.3    | C(39) | C(38) | H(57) | 109.2    |
| H(56) | C(38) | H(57) | 109.7    | C(38) | C(39) | C(40) | 110.7(4) |
| C(38) | C(39) | H(58) | 109.1    | C(38) | C(39) | H(59) | 108.4    |
| C(40) | C(39) | H(58) | 109.7    | C(40) | C(39) | H(59) | 108.9    |
| H(58) | C(39) | H(59) | 110.0    | C(39) | C(40) | C(41) | 111.4(4) |
| C(39) | C(40) | H(60) | 108.0    | C(39) | C(40) | H(61) | 109.2    |
| C(41) | C(40) | H(60) | 108.8    | C(41) | C(40) | H(61) | 109.4    |
| H(60) | C(40) | H(61) | 110.1    | C(40) | C(41) | C(42) | 112.9(3) |
| C(40) | C(41) | H(62) | 108.9    | C(40) | C(41) | H(63) | 108.0    |
| C(42) | C(41) | H(62) | 109.1    | C(42) | C(41) | H(63) | 108.5    |

**Table S8.** *(continued)*

| atom  | atom  | atom  | angle | atom  | atom  | atom  | angle    |
|-------|-------|-------|-------|-------|-------|-------|----------|
| H(62) | C(41) | H(63) | 109.4 | C(37) | C(42) | C(41) | 109.4(3) |
| C(37) | C(42) | H(64) | 109.3 | C(37) | C(42) | H(65) | 109.2    |
| C(41) | C(42) | H(64) | 109.7 | C(41) | C(42) | H(65) | 109.4    |
| H(64) | C(42) | H(65) | 109.8 |       |       |       |          |