Electronic Supplementary Material (ESI) for RSC Advances.


*Supporting Information*
*for*

# Selective synthesis of *E*-vinylsilanes and *E,E*-divinylsilanes via platinum-catalyzed hydrosilylation of alkynes with secondary silanes

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1. NMR spectra and analytical data of isolated *E*-vinylsilanes S2
2. NMR spectra and analytical data of isolated symmetrical *E,E*-divinylsilanes S38
3. NMR spectra and analytical data of isolated unsymmetrical *E,E*-divinylsilanes S76

## 1. NMR spectra and analytical data of isolated *E*-vinylsilanes

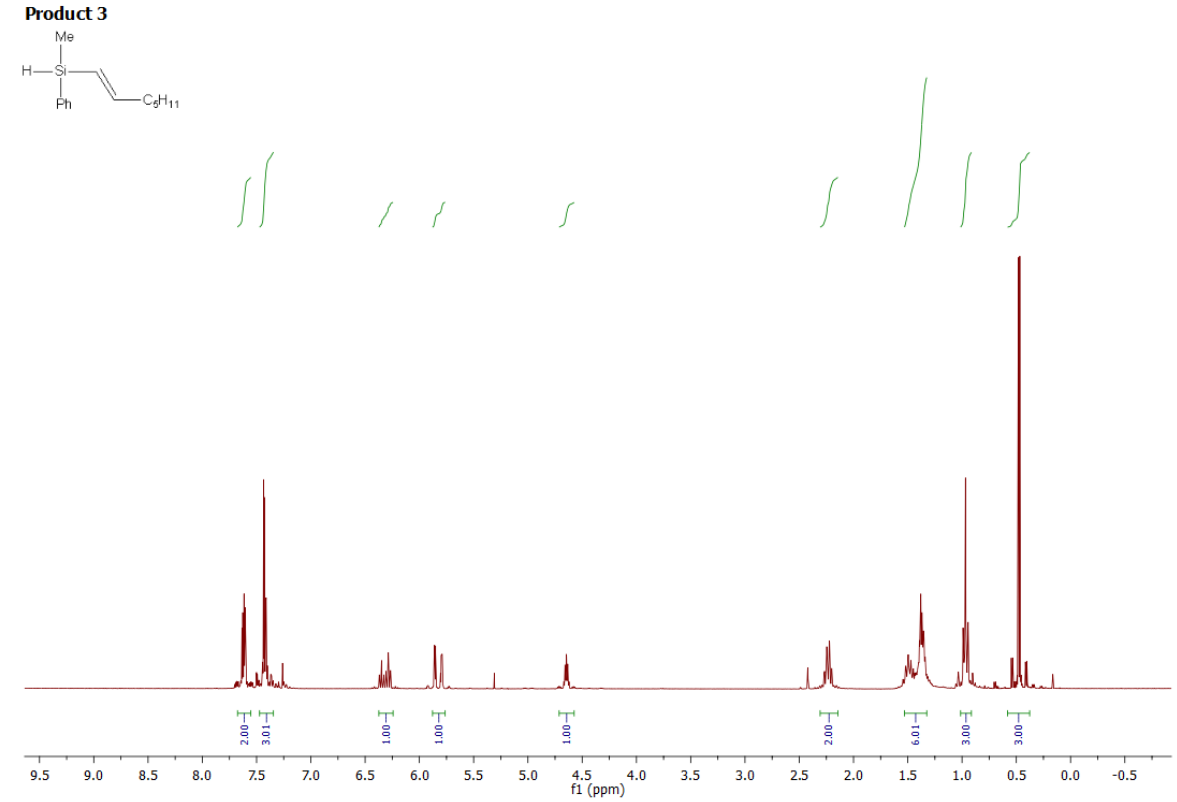



**Figure S1.** $^{1}$H NMR (300 MHz, $CDCl_3$) of product **3**

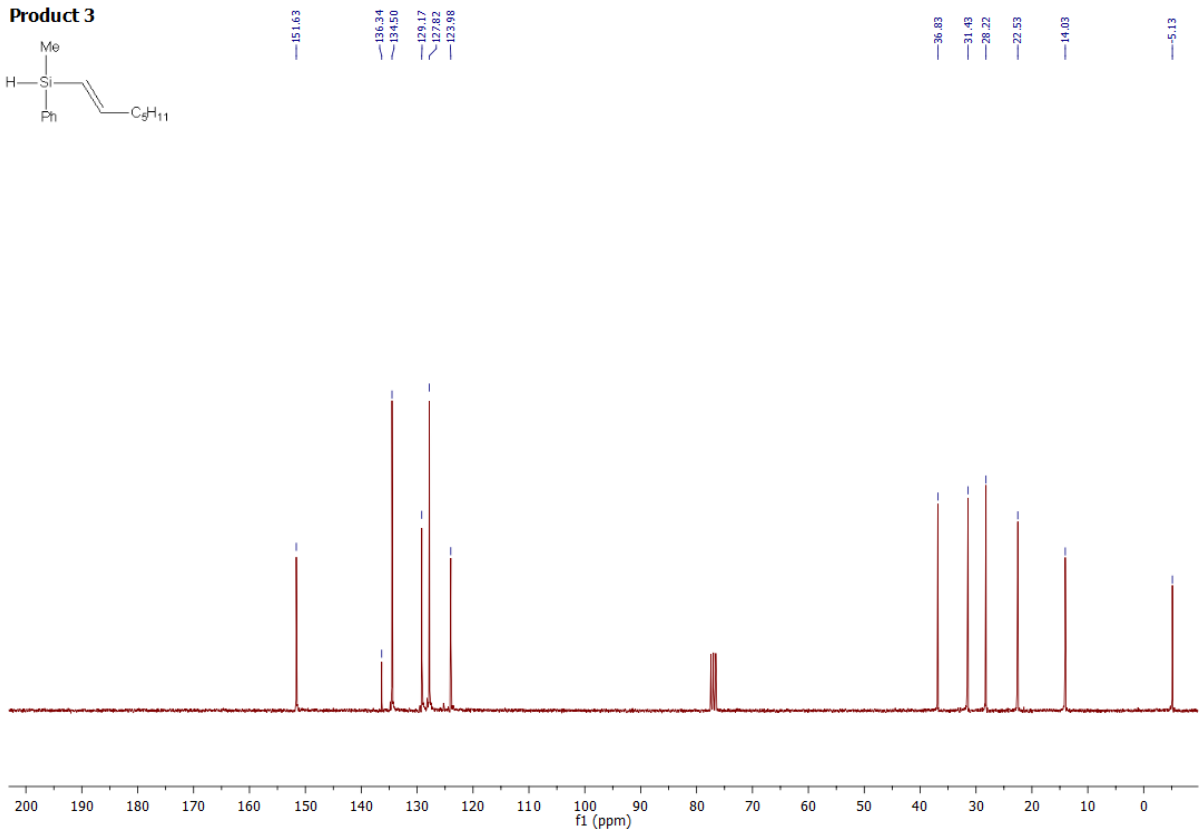



**Figure S2.** $^{13}$C NMR (75 MHz, $CDCl_3$) of product **3**

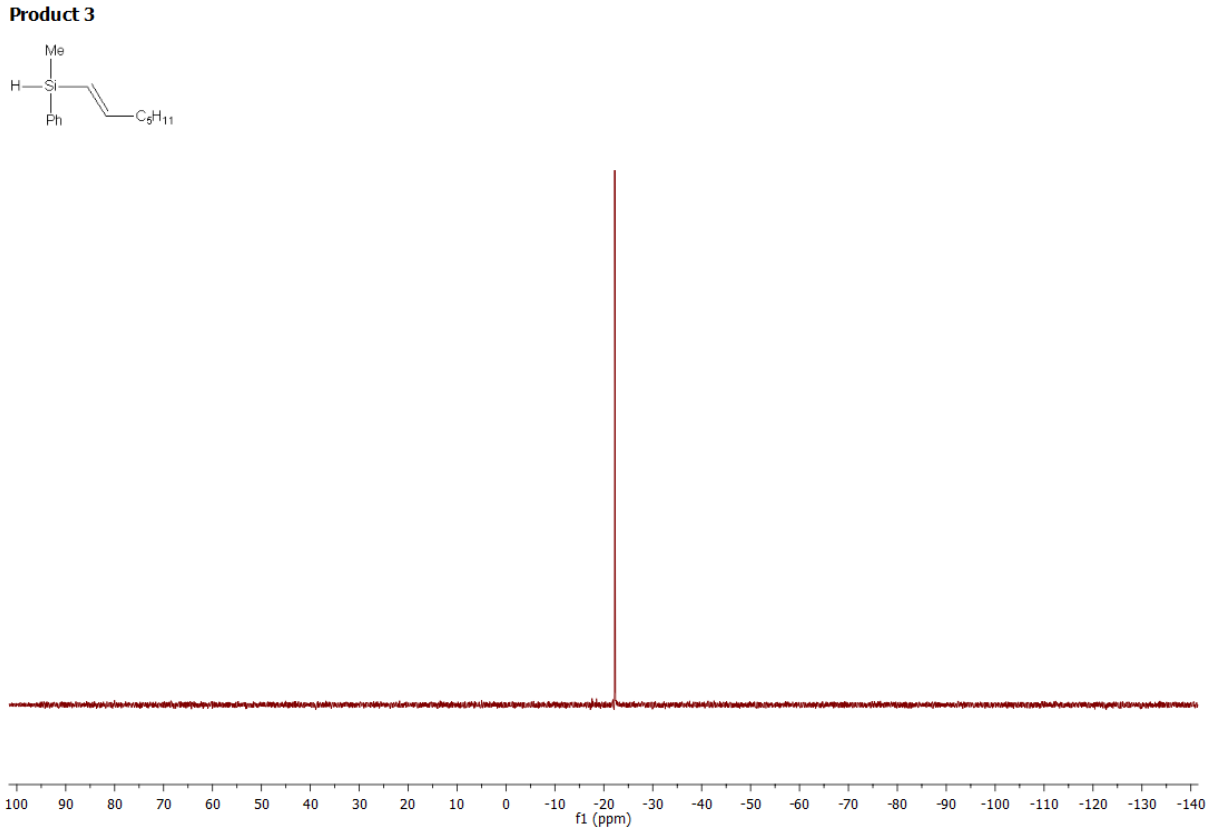



**Figure S3.** $^{29}$Si NMR (79 MHz, $CDCl_3$) of product **3**

*Analytical data of product **3**:*

Isolated yield: 92% (200.7 mg); $^{1}$H NMR ($CDCl_3$, δ, ppm): 0.46 (d, 3H, $J_{HH}$ = 3.8 Hz, C*H*$_3$), 0.97 (t, 3H, $J_{HH}$ = 6.9 Hz, -$(CH_2)_4$C*H*$_3$), 1.32 – 1.53 (m, 6H, -(C*H*$_2$)$_4$CH$_3$), 2.14 – 2.31 (m, 2H, =CHC*H*$_2$), 4.57 – 4.71 (m, 1H, Si*H*), 5.76 – 5.88 (m, 1H, =C*H*Si), 6.32 (dt, 1H, $J_{HH}$ = 18.5, 6.2 Hz, =C*H*CH$_2$), 7.34 – 7.47 (m, 3H, Ph), 7.55 – 7.68 (m, 2H, Ph); $^{13}$C NMR ($CDCl_3$, δ, ppm): -5.11 (*C*H$_3$), 14.03, 22.53, 28.22, 31.43, 36.83, 123.98, 127.82, 129.17, 134.50, 136.34, 151.63; $^{29}$Si NMR ($CDCl_3$, δ, ppm): -22.23; MS: *m/z* (rel. intensity): 105 (21), 121 (42), 122 (11), 134 (11), 216 (15), 217 (100), 218 (38, $M^+$); anal. calcd. for $C_{14}H_{22}Si$ (%): C: 76.99, H: 10.15; found: C: 76.90, H: 10.11.

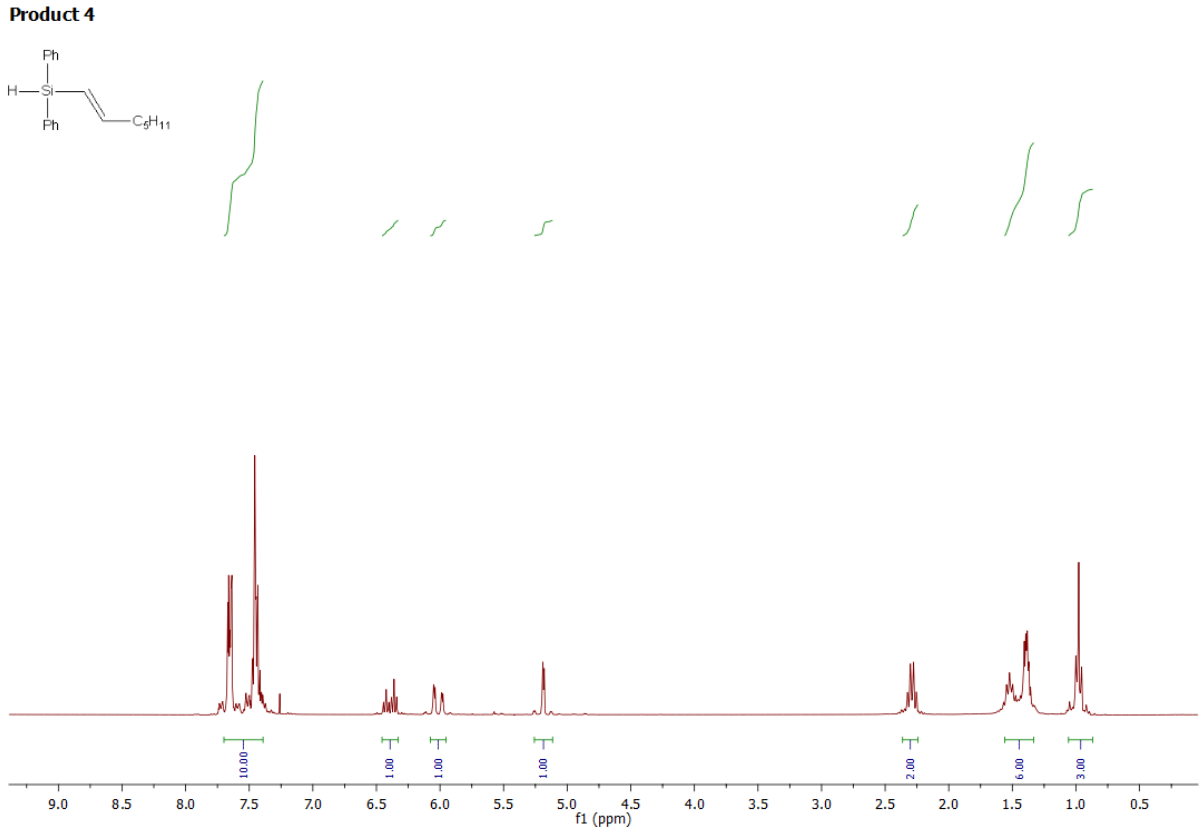



**Figure S4.** $^{1}H$ NMR (300 MHz, $CDCl_3$) of product **4**

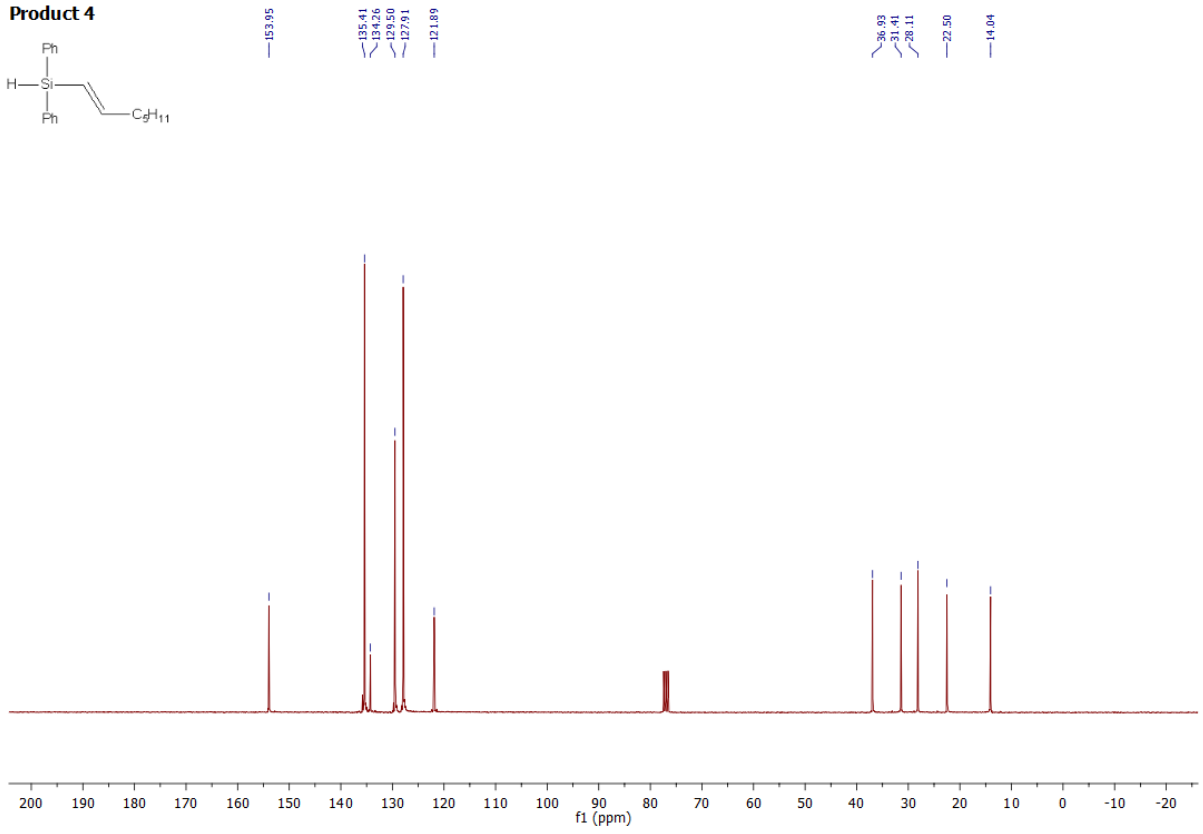



**Figure S5.** $^{13}C$ NMR (75 MHz, $CDCl_3$) of product **4**

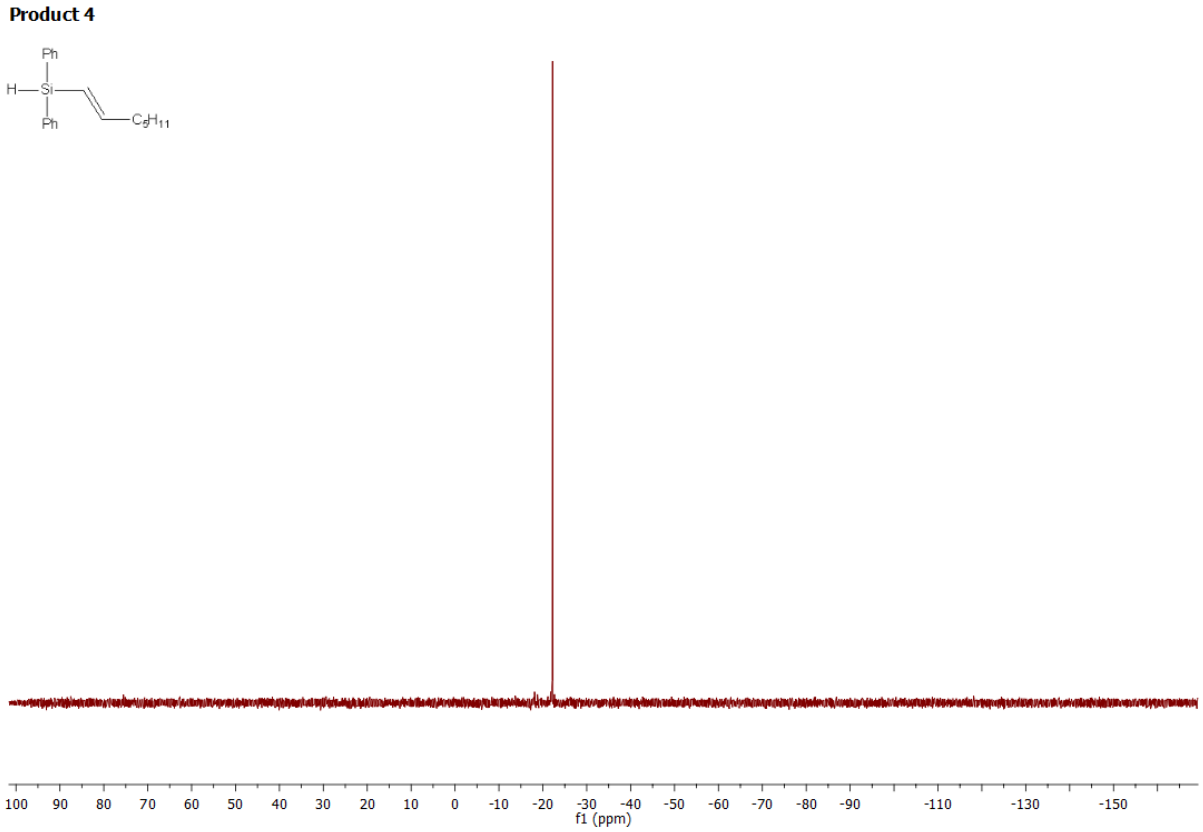



**Figure S6.** $^{29}$Si NMR (79 MHz, $CDCl_3$) of product **4**

*Analytical data of product **4:***

Isolated yield: 93% (260.5 mg); $^{1}$H NMR ($CDCl_3$, δ, ppm): 0.98 (t, 3H, $J_{HH}$ = 6.8 Hz, -$(CH_2)_4CH_3$), 1.33 – 1.56 (m, 6H, -$(CH_2)_4CH_3$), 2.24 – 2.36 (m, 2H, =$CHCH_2$), 5.19 (d, 1H, $J_{HH}$ = 3.1 Hz, Si*H*), 5.95 – 6.01 (m, 1H, =C*H*Si), 6.39 (dt, 1H, $J_{HH}$ = 18.5, 6.3 Hz, =C*H*$CH_2$), 7.39 – 7.70 (m, 10H, Ph); $^{13}$C NMR ($CDCl_3$, δ, ppm): 14.04, 22.50, 28.11, 31.41, 36.93, 121.89, 127.91, 129.50, 134.26, 135.41, 153.95; $^{29}$Si NMR ($CDCl_3$, δ, ppm): -22.21; MS: *m/z* (rel. intensity): 53 (18), 105 (43), 106 (20), 107 (19), 131 (15), 145 (17), 180 (21), 181 (43), 182 (35), 183 (61), 184 (21), 203 (27), 251 (19), 259 (23), 267 (17), 279 (100), 280 (32, $M^+$).

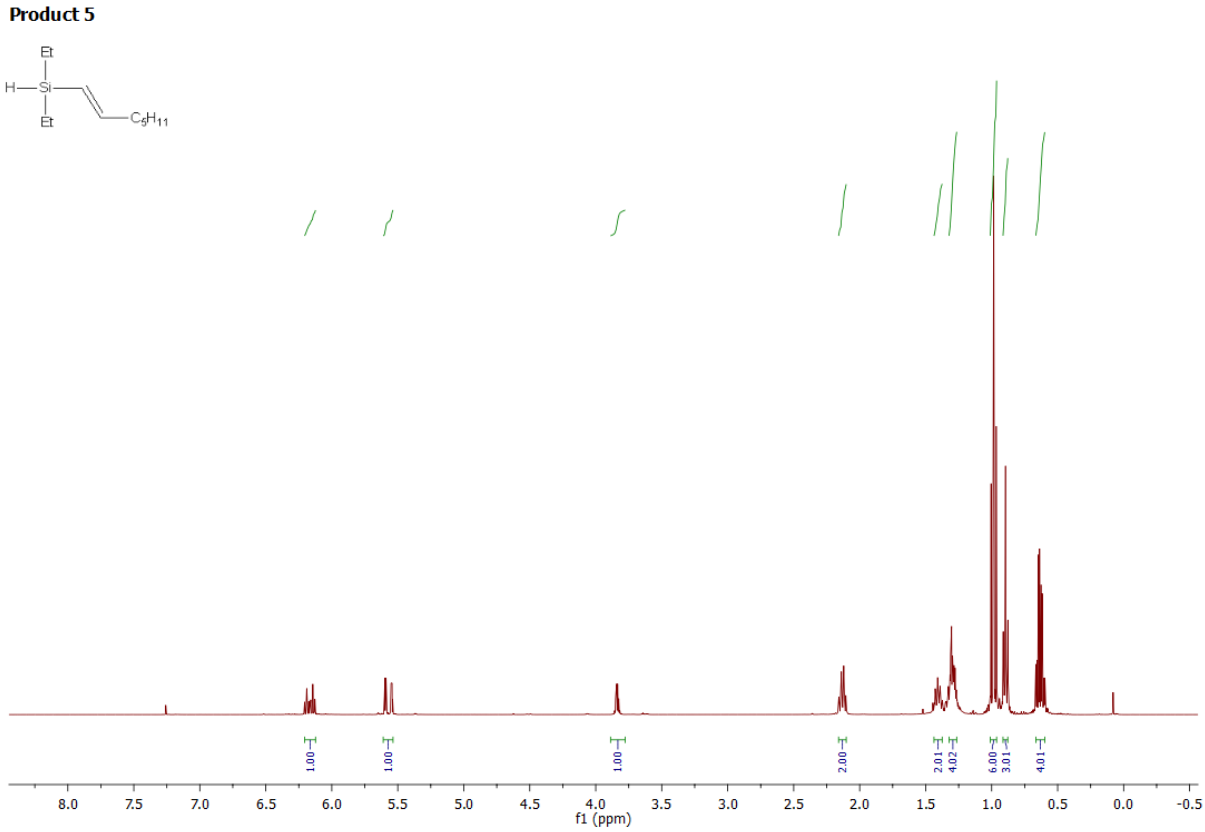



**Figure S7.** $^{1}$H NMR (400 MHz, $CDCl_3$) of product **5**

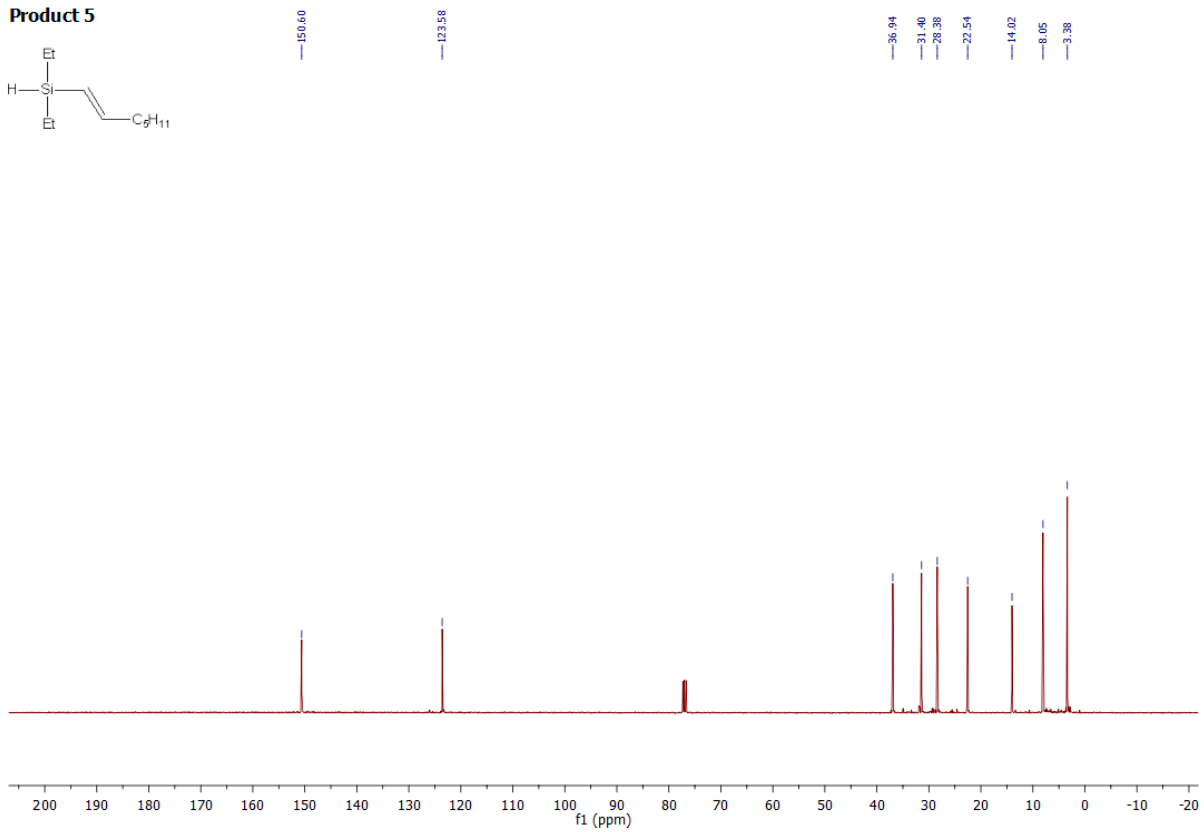



**Figure S8.** $^{13}$C NMR (75 MHz, $CDCl_3$) of product **5**

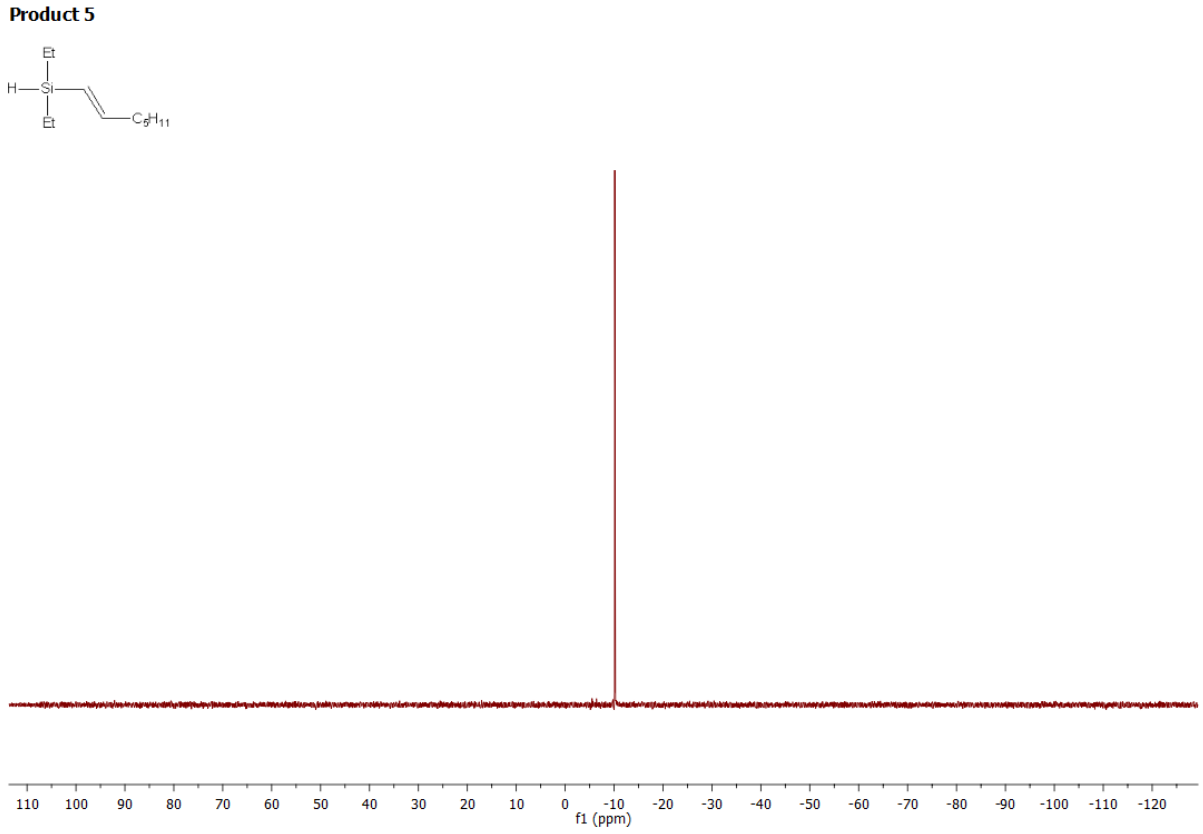



**Figure S9.** $^{29}$Si NMR (79 MHz, $CDCl_3$) of product **5**

*Analytical data od product **5**:*

Isolated yield: 90% (165.7 mg); $^{1}$H NMR ($CDCl_3$, δ, ppm): 0.60 -0.66 (m, 4H, $CH_3CH_2$-), 0.89 (t, 3H, $J_{HH}$ = 7.0 Hz, -$(CH_2)_4CH_3$), 0.99 (t, 6H, $J_{HH}$ = 7.8 Hz, $CH_3CH_2$-), 1.26 – 1.32 (m, 4H, -$(CH_2)_4CH_3$), 1.38 – 1.44 (m, 2H, -$(CH_2)_4CH_3$), 2.10 – 2.16 (m, 2H, =$CHCH_2$), 3.78 – 3.89 (m, 1H, Si*H*), 5.52 – 5.62 (m, 1H, =C*H*Si), 6.17 (dt, 1H, $J_{HH}$ = 18.6, 6.1 Hz, =C*H*$CH_2$); $^{13}$C NMR ($CDCl_3$, δ, ppm): 3.38 ($CH_3$), 8.05 ($CH_2$), 14.02, 22.54, 28.38, 31.40, 36.94, 123.58, 150.60; $^{29}$Si NMR ($CDCl_3$, δ, ppm): -10.13; MS: *m/z* (rel. intensity): 59 (17), 85 (13), 87 (14), 95 (17), 97 (16), 99 (25), 113 (14), 127 (12), 155 (62), 182 (20), 183 (100), 184 (16, $M^+$); anal. calcd. for $C_{11}H_{24}Si$ (%): C: 71.65, H: 13.12; found: C: 71.70, H: 13.18.

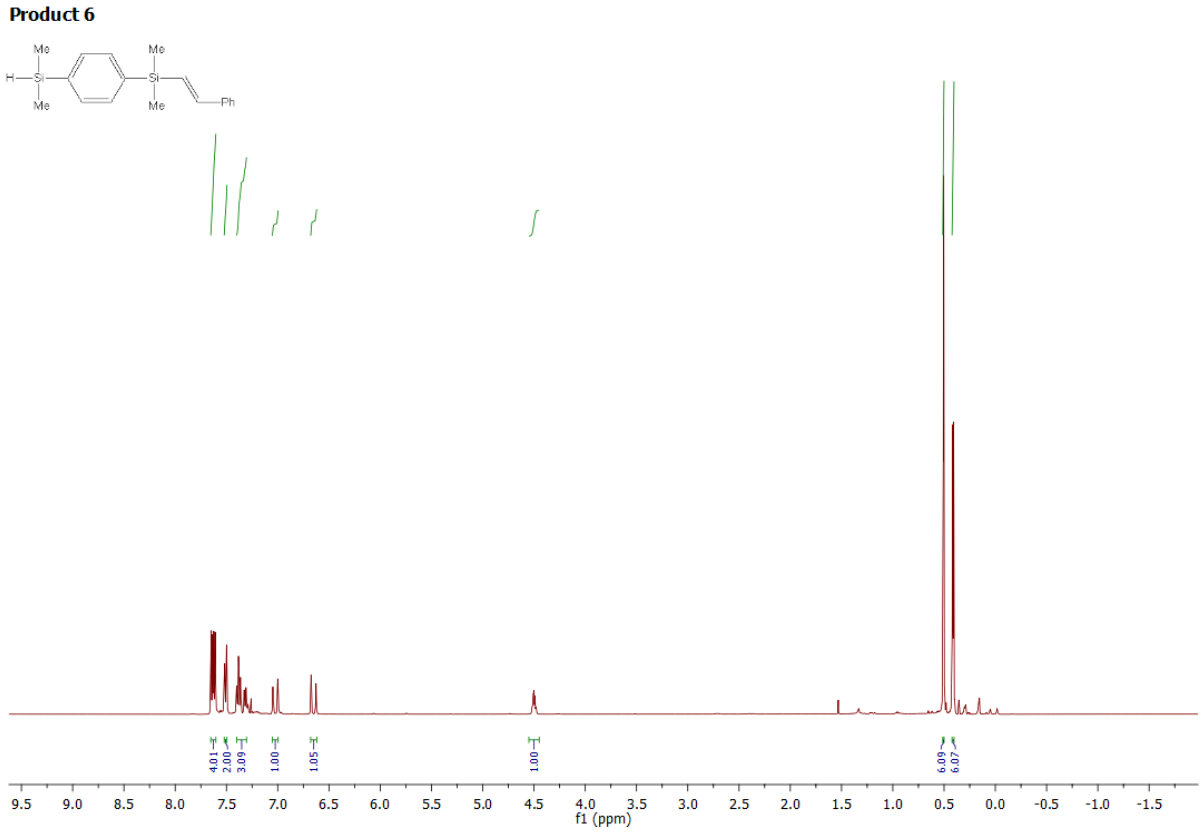



**Figure S10.** $^{1}H$ NMR (400 MHz, $CDCl_3$) of product **6**

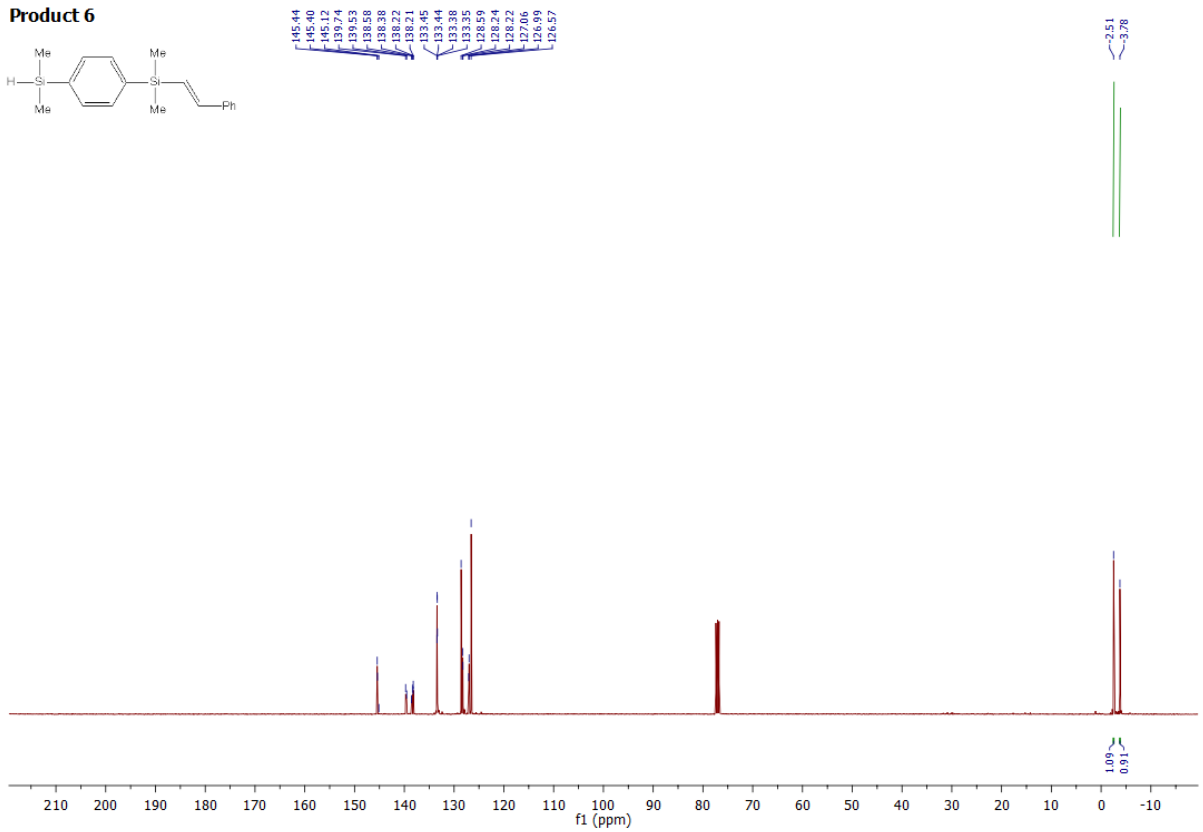



**Figure S11.** $^{13}C$ NMR (100 MHz, $CDCl_3$) of product **6**

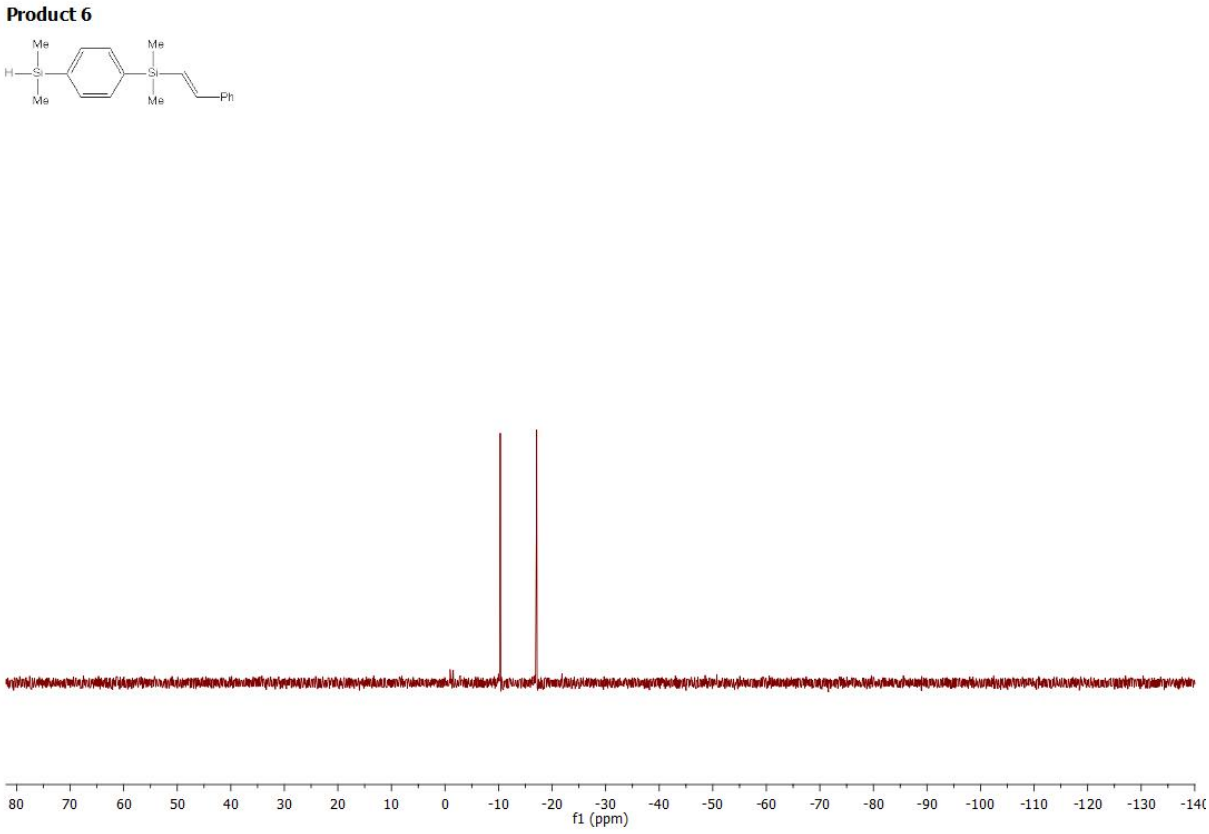



**Figure S12.** $^{29}$Si NMR (79 MHz, $CDCl_3$) of product **6**

*Analytical data od product **6**:*

Isolated yield: 92% (272.4 mg); $^{1}$H NMR ($CDCl_3$, δ, ppm): 0.41 (d, 6H, $J_{HH}$ = 3.8 Hz, C*H*$_3$), 0.50 (s, 6H, C*H*$_3$), 4.47 – 4.53 (m, 1H, Si*H*), 6.65 (dd, 1H, $J_{HH}$ = 19.1, 1.1 Hz, =C*H*Si), 7.02 (d, 1H, $J_{HH}$ = 19.1 Hz, =C*H*), 7.28 – 7.40 (m, 3H, Ph), 7.48 – 7.52 (m, 2H, Ph), 7.59 – 7.66 (m, 4H, Ph); $^{13}$C NMR ($CDCl_3$, δ, ppm): -3.78 (*C*H$_3$), -2.51 (*C*H$_3$), 126.57, 126.99, 127.06, 128.22, 128.24, 128.59, 133.37 (d, *J* = 2.5 Hz), 133.45 (d, *J* = 1.7 Hz), 138.22 (d, *J* = 1.7 Hz), 138.38, 138.58, 139.53, 139.74, 145.40, 145.44; $^{29}$Si NMR ($CDCl_3$, δ, ppm): -10.32, -17.07; MS: *m/z* (rel. intensity): 59 (17), 135 (32), 145 (42), 236 (80), 237 (100), 238 (27), 281 (77), 282 (23), 296 (16, $M^+$); anal. calcd. for $C_{18}H_{24}Si_2$ (%): C: 72.90, H: 8.16; found: C: 72.81, H: 8.12.

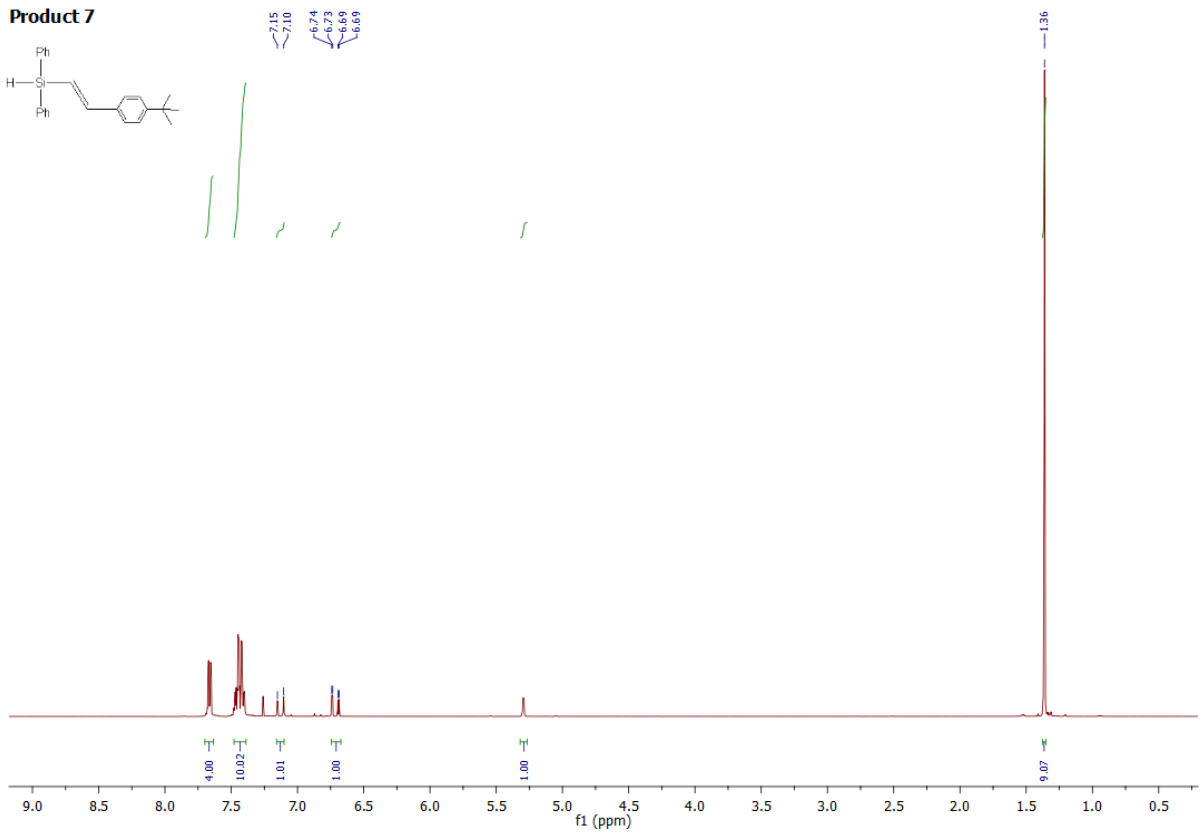



**Figure S13.** $^{1}H$ NMR (400 MHz, $CDCl_3$) of product **7**

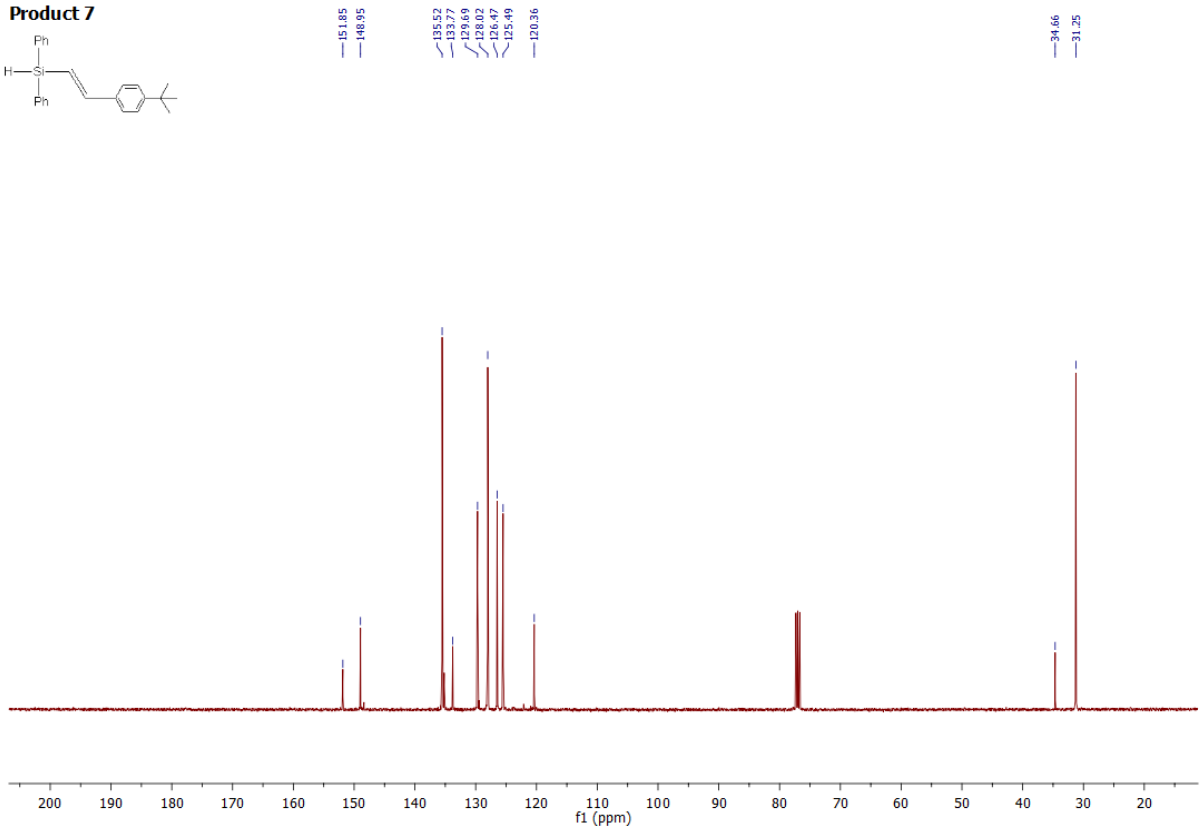



**Figure S14.** $^{13}C$ NMR (100 MHz, $CDCl_3$) of product **7**

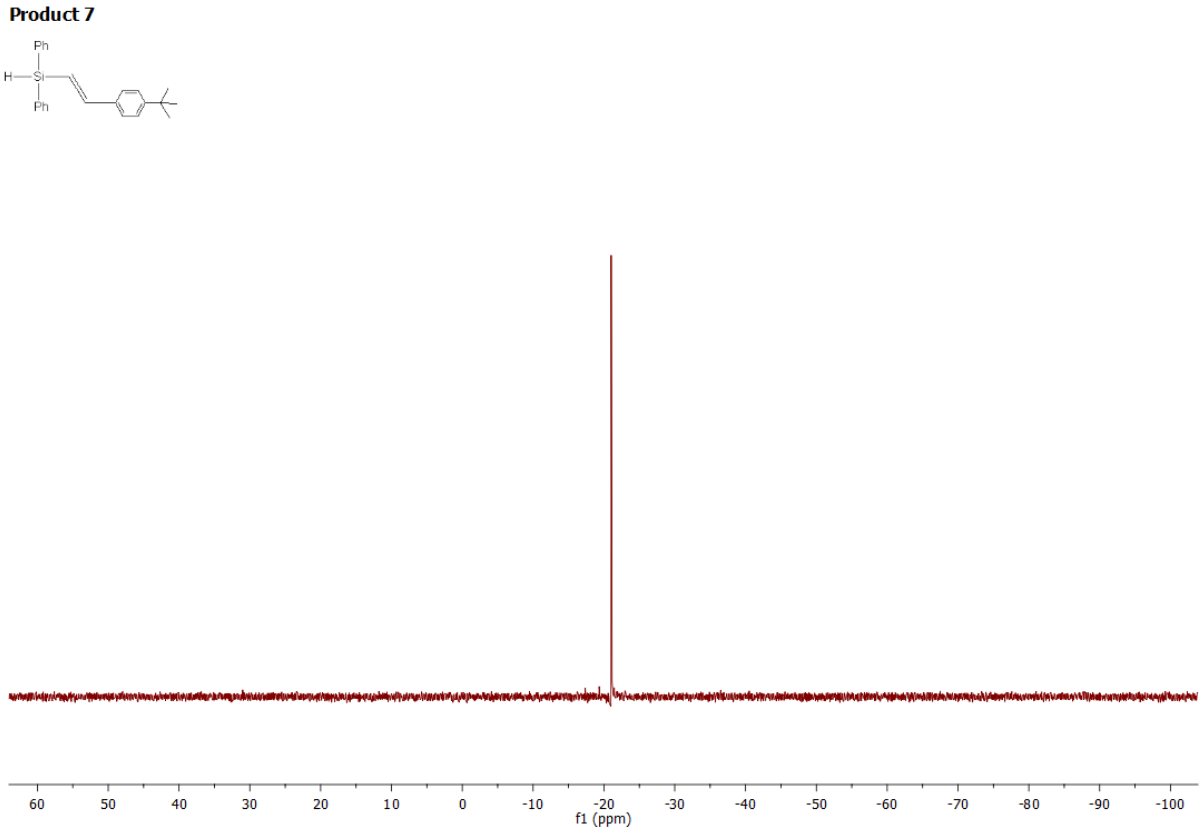



**Figure S15.** $^{29}$Si NMR (79 MHz, $CDCl_3$) of product **7**

*Analytical data of product **7**:*

Isolated yield: 89% ( 304.5 mg); $^{1}$H NMR ($CDCl_3$, δ, ppm): 1.36 (s, 9H, $(CH_3)_3$), 5.29 (d, 1H, $J_{HH}$ = 3.2 Hz, Si*H*), 6.71 (dd, 1H, $J_{HH}$ = 19.0, 3.3 Hz, =C*H*Si), 7.13 (d, 1H, $J_{HH}$ = 19.0 Hz, =C*H*), 7.39 – 7.49 (m, 10H, -$C_6H_4$- and Ph), 7.64 – 7.69 (m, 4H, Ph); $^{13}$C NMR ($CDCl_3$, δ, ppm): 31.25 ($C(CH_3)_3$), 34.66 ($C(CH_3)_3$), 120.36, 125.49, 126.47, 128.02, 129.69, 133.77, 135.52, 148.95, 151.85; $^{29}$Si NMR ($CDCl_3$, δ, ppm): -21.03; MS: *m/z* (rel. intensity): 57 (24), 77 (14), 91 (14), 105 (39), 106 (17), 131 (29), 132 (30), 146 (14), 180 (19), 181 (48), 182 (28), 183 (45), 184 914), 200 (16), 207 (32), 208 (74), 209 (57), 210 (18), 224 (24), 250 (23), 252 (35), 264 (32), 285 (100), 288 (36), 327 (14), 342 (52, $M^+$); anal. calcd. for $C_{24}H_{26}Si$ (%): C: 84.15, H: 7.65; found: C: 84.09, H: 7.55.

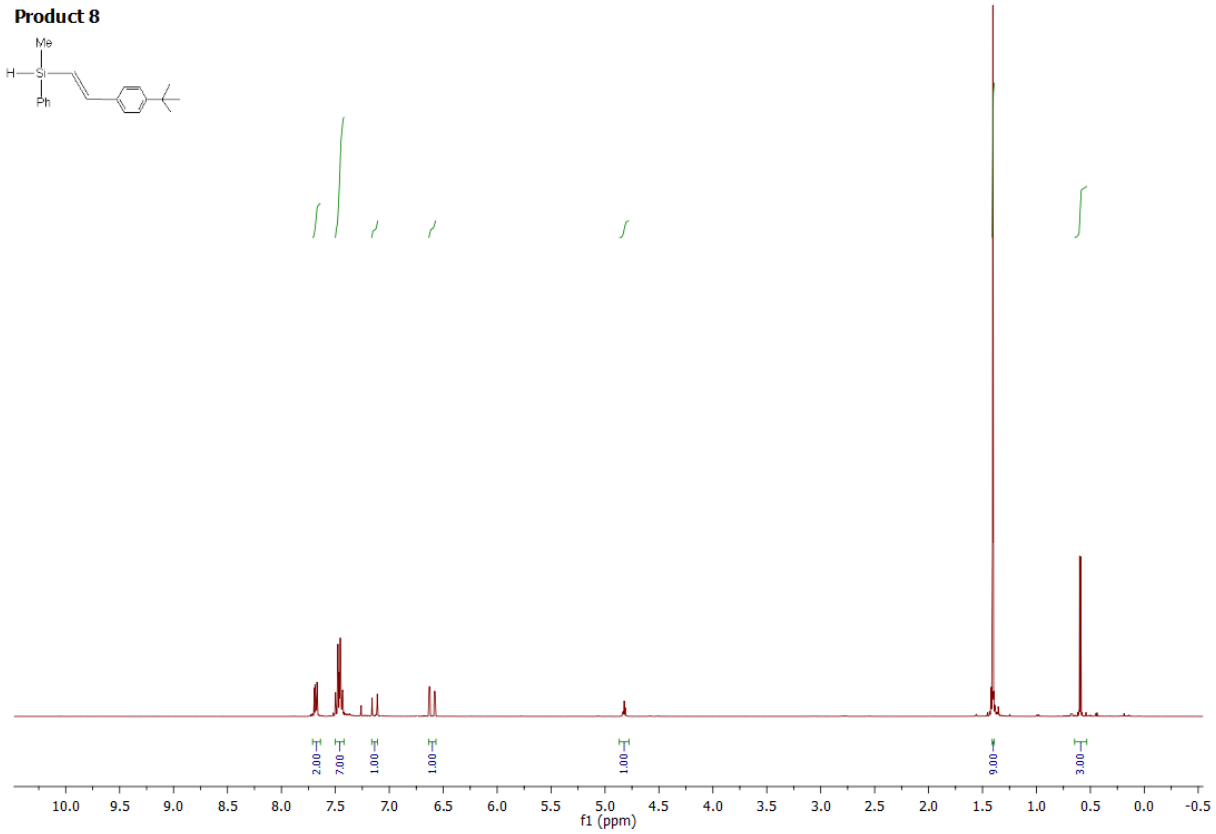



**Figure S16.** $^{1}H$ NMR (400 MHz, $CDCl_3$) of product **8**

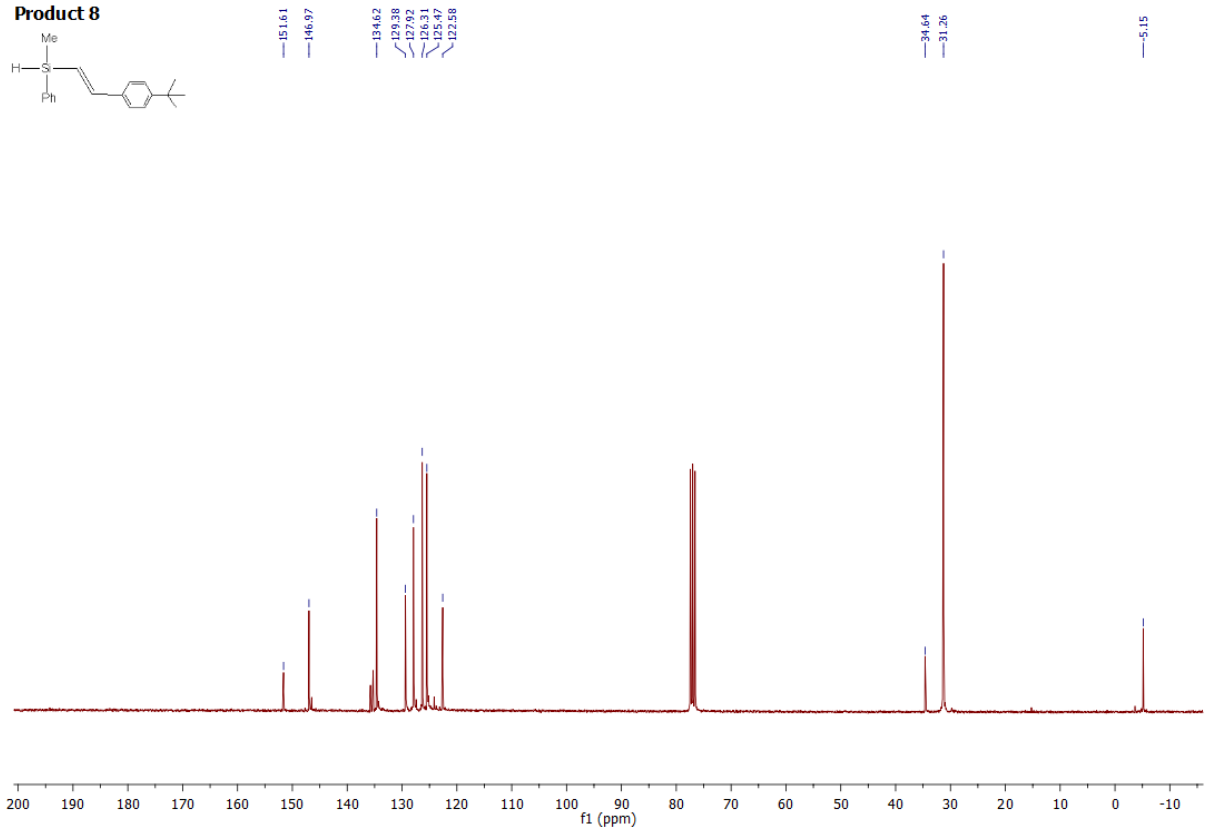



**Figure S17.** $^{13}C$ NMR (75 MHz, $CDCl_3$) of product **8**

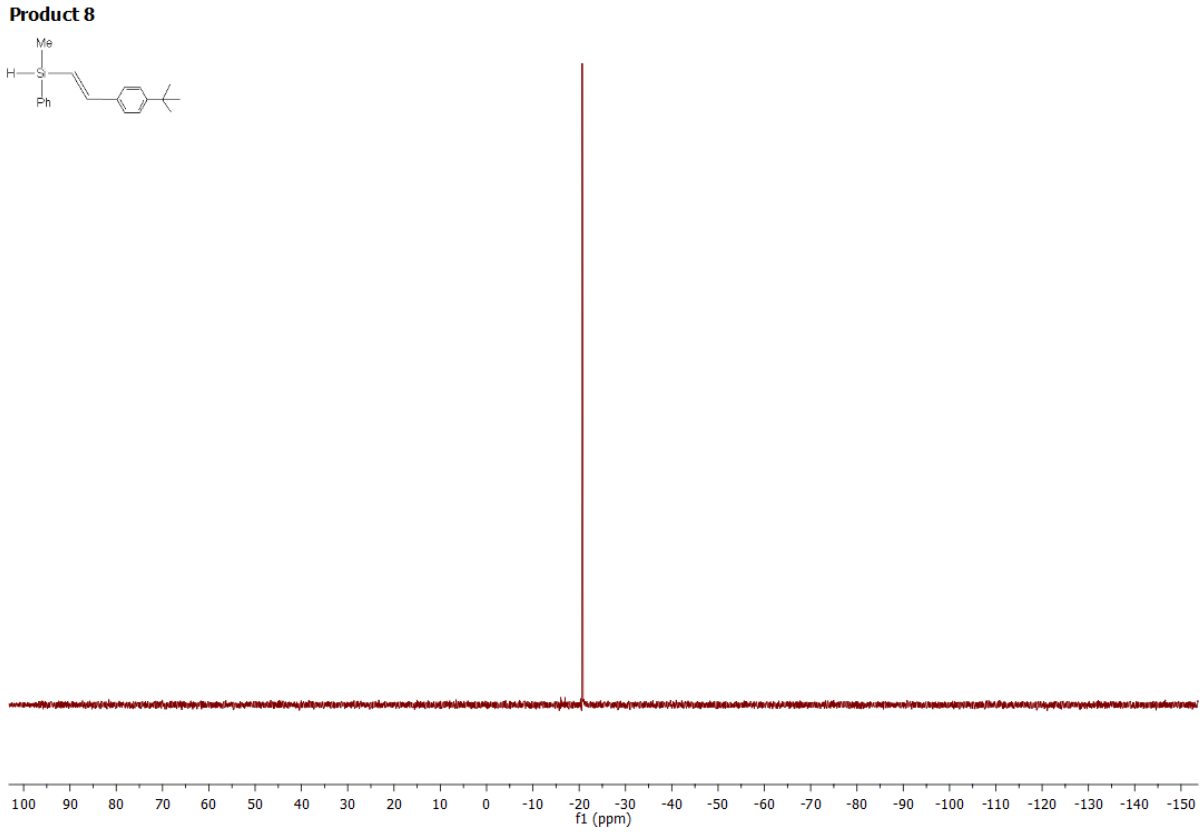



**Figure S18.** $^{29}$Si NMR (79 MHz, $CDCl_3$) of product **8**

*Analytical data of product **8**:*

Isolated yield: 92% (257.7 mg); $^{1}$H NMR ($CDCl_3$, δ, ppm): 0.59 (d, 3H, $J_{HH}$ = 3.8 Hz, C$H_3$),1.40 (s, 9H, (C$H_3$)$_3$), 4.78 – 4.87 (m, 1H, Si$H$), 6.60 (dd, 1H, $J_{HH}$ = 19.0, 3.3 Hz, =C$H$Si), 7.14 (d, 1H, $J_{HH}$ = 19.0 Hz, =C$H$), 7.42 – 7.50 (m, 7H, -C$_6H_4$- and Ph), 7.64 – 7.71 (m, 2H, Ph); $^{13}$C NMR ($CDCl_3$, δ, ppm): -5.15 (*C*H$_3$), 31.26 (C(*C*H$_3$)$_3$), 34.64 (*C*(CH$_3$)$_3$), 122.58, 125.47, 126.31, 127.92, 129.38, 134.62, 146.97, 151.61; $^{29}$Si NMR ($CDCl_3$, δ, ppm): -20.66; MS: *m/z* (rel. intensity): 57 (100), 105 (31), 106 (10), 115 (12), 121 (10), 143 (13), 145 (75), 146 (42), 147 (24), 148 (11), 187 (13), 209 (11), 221 (10), 222 (28), 223 (36), 224 (17), 263 (10), 265 (50), 266 (12), 279 (87), 280 (28, M$^+$); anal. calcd. for $C_{19}H_{24}Si$ (%): C: 81.36, H: 8.62; found: C: 81.45, H: 8.72.

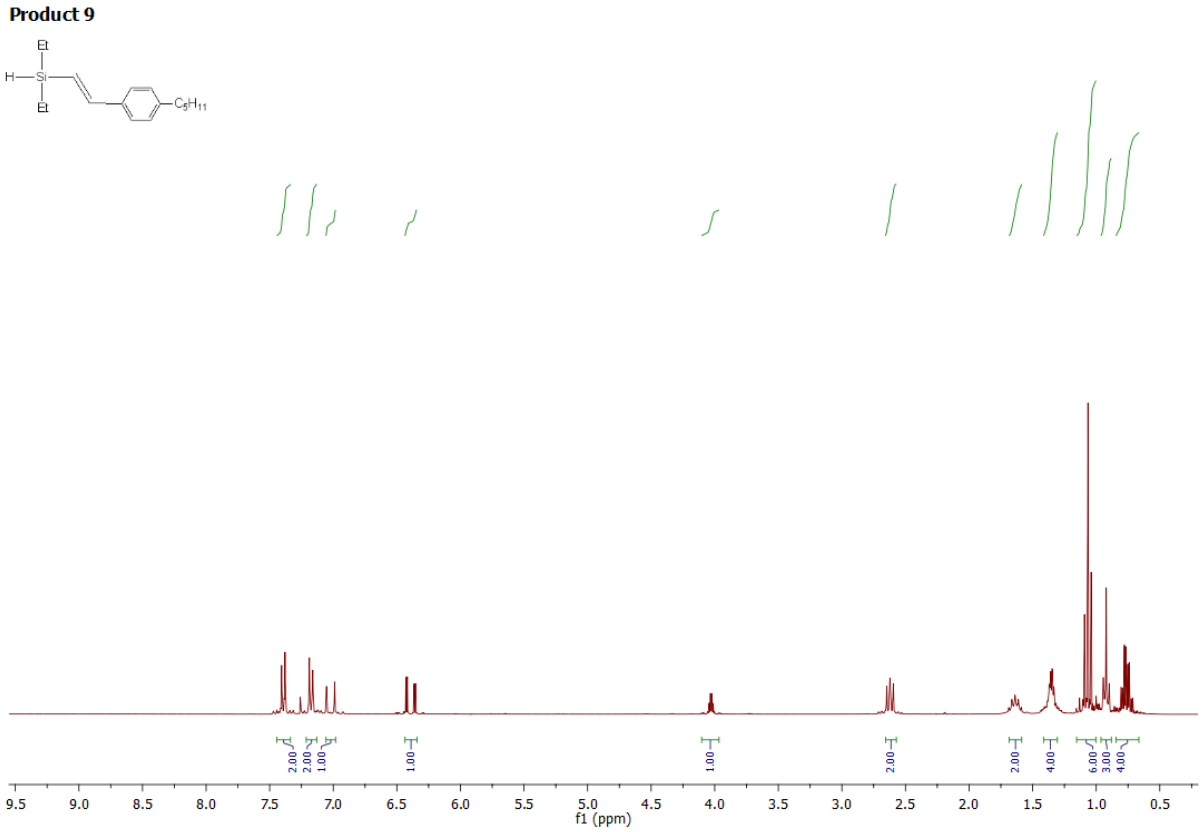



**Figure S19.** $^{1}H$ NMR (400 MHz, $CDCl_3$) of product **9**

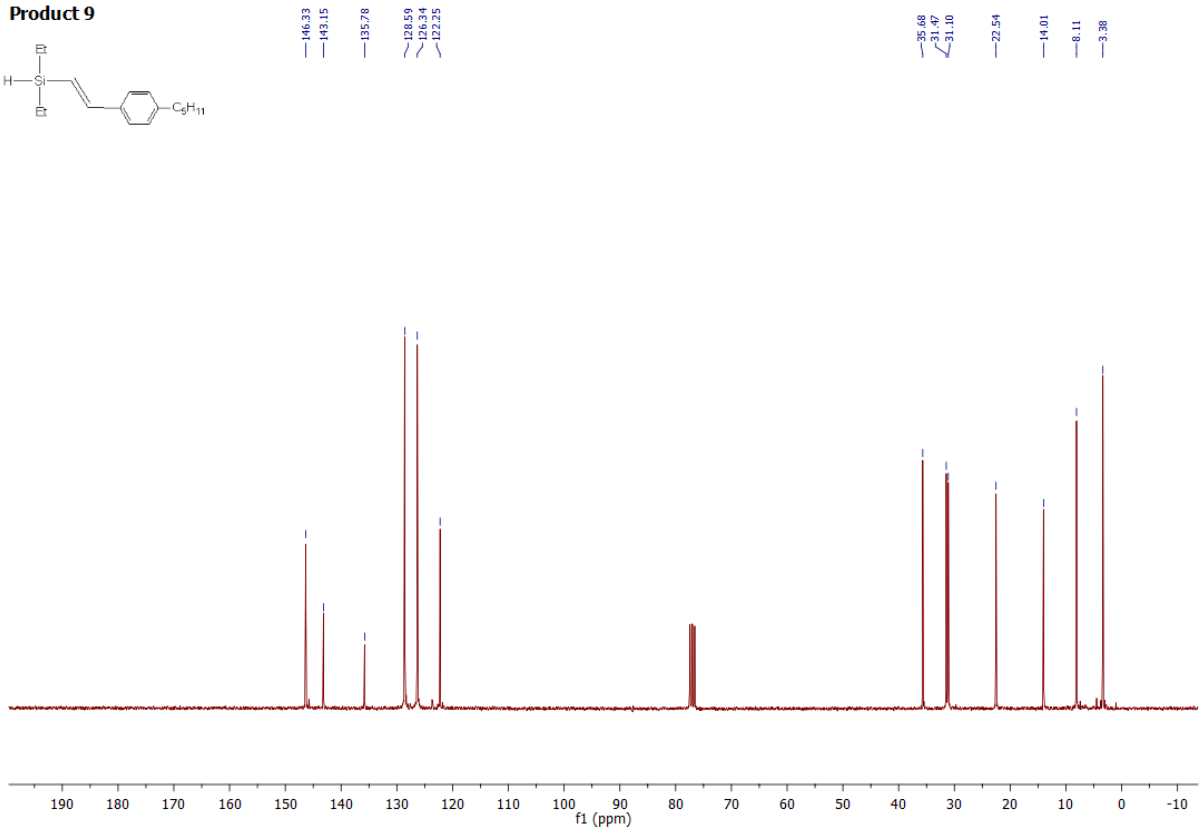



**Figure S20.** $^{13}C$ NMR (75 MHz, $CDCl_3$) of product **9**

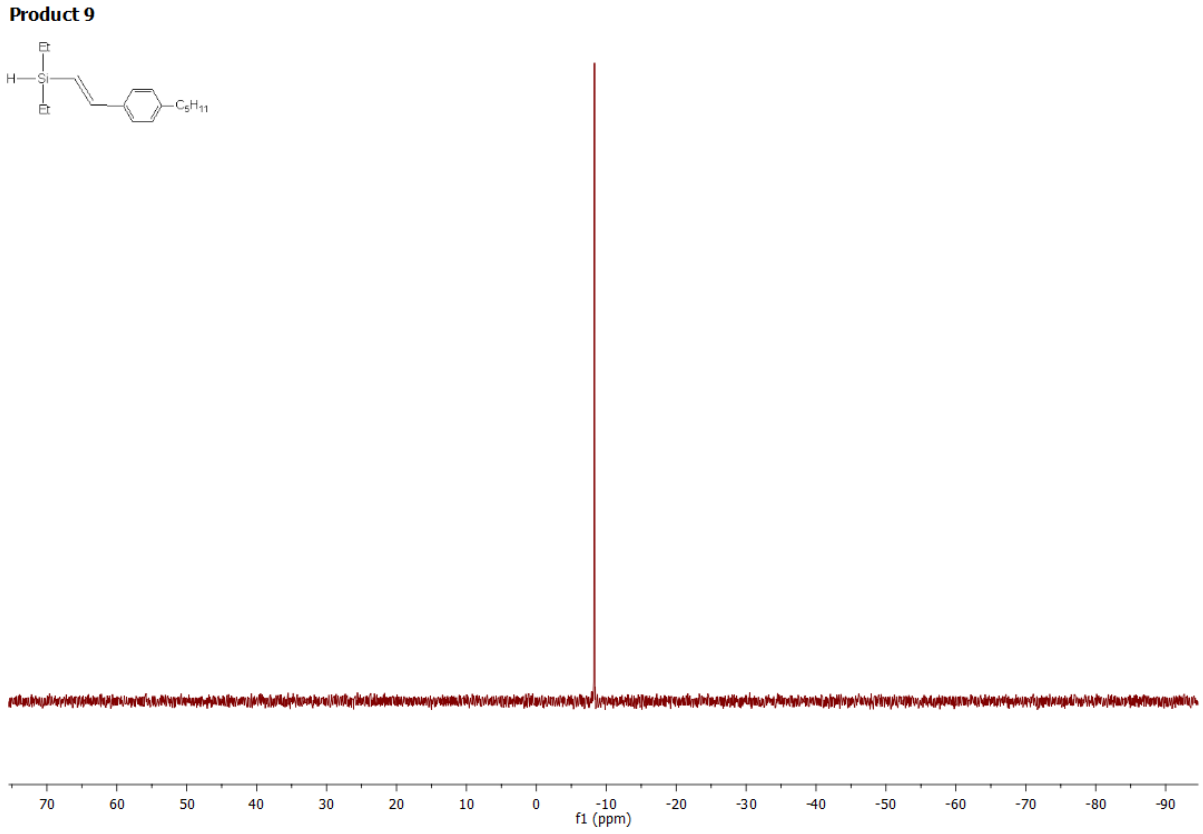



**Figure S21.** $^{29}$Si NMR (79 MHz, $CDCl_3$) of product **9**

*Analytical data of product **9**:*

Isolated yield: 92% (239.4 mg); $^{1}$H NMR ($CDCl_3$, δ, ppm): 0.66-0.84 (m, 4H, $CH_3CH_2$-), 0.88 –0.96 (m, 3H, -$(CH_2)_4CH_3$), 1.00-1.15 (m, 6H, $CH_3CH_2$-), 1.30 – 1.41 (m, 4H, -$(CH_2)_4CH_3$), 1.59 – 1.68 (m, 2H, -$(CH_2)_4CH_3$), 2.57 – 2.66 (m, 2H, -$(CH_2)_4CH_3$), 4.00 – 4.10 (m, 1H, Si*H*), 6.39 (dd, 1H, $J_{HH}$ = 19.1, 3.4 Hz, =C*H*Si), 7.02 (d, 1H, $J_{HH}$ = 19.2 Hz, =C*H*), 7.17 (d, 2H, $J_{HH}$ = 8.0 Hz, -$C_6H_4$-), 7.39 (d, 2H, $J_{HH}$ = 8.0 Hz, -$C_6H_4$-); $^{13}$C NMR ($CDCl_3$, δ, ppm): 3.38 ($CH_3$), 8.11 ($CH_2$), 14.01, 22.54, 31.10, 31.47, 35.68, 122.25, 126.34, 128.59, 135.78, 143.15, 146.33; $^{29}$Si NMR ($CDCl_3$, δ, ppm): -8.32; MS: *m/z* (rel. intensity): 131 (12), 133 (18), 145 (11), 159 (10), 161 (100), 162 (24), 203 (34), 231 (41), 259 (14), 260 (26, $M^+$); anal. calcd. for $C_{17}H_{28}Si$ (%): C: 78.38, H: 10.83; found: C: 78.42, H: 10.88.

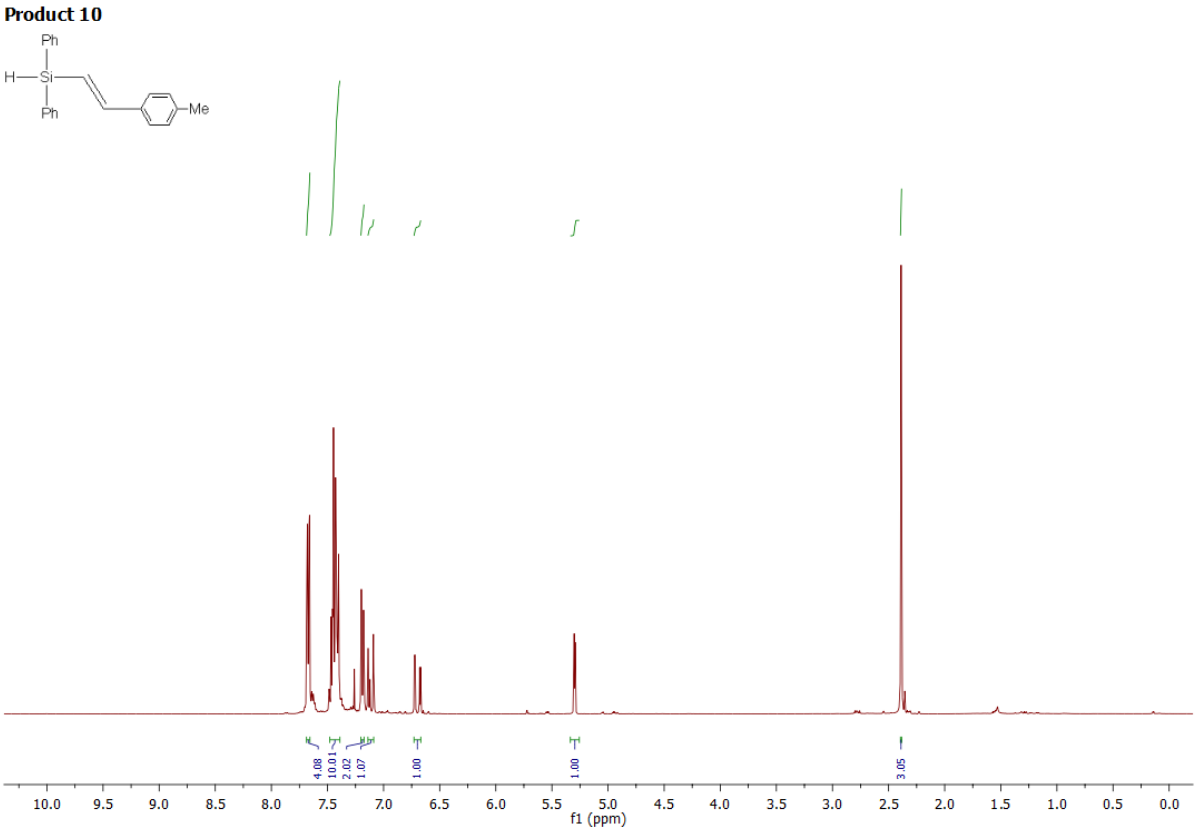



**Figure S22.** $^{1}H$ NMR (400 MHz, $CDCl_3$) of product **10**

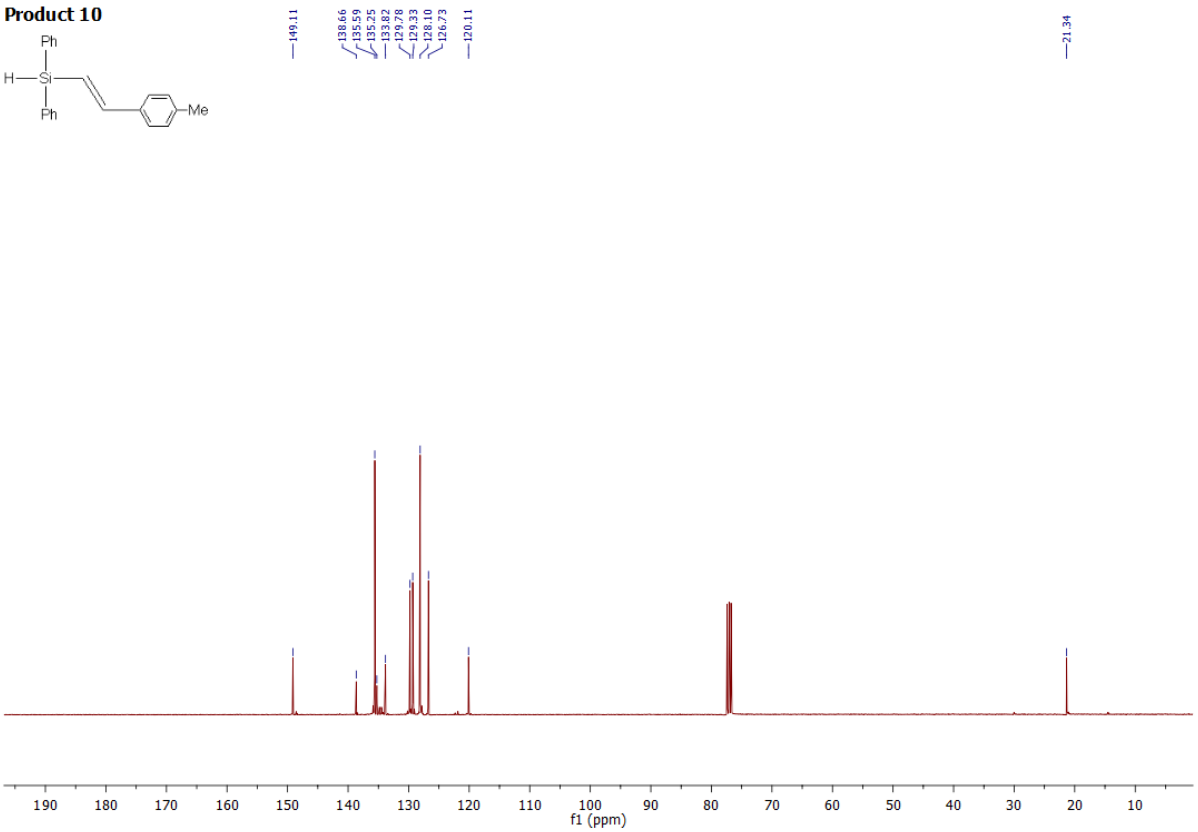



**Figure S23.** $^{13}C$ NMR (100 MHz, $CDCl_3$) of product **10**

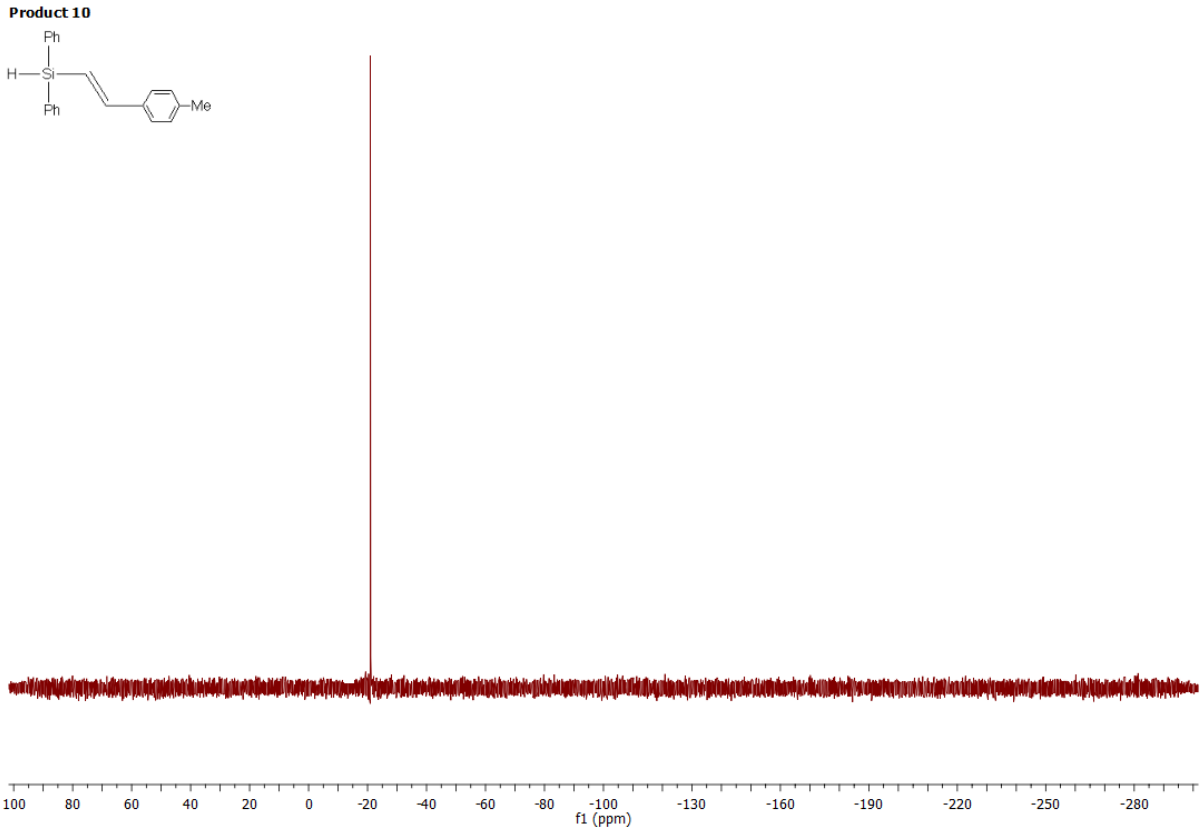



**Figure S24.** $^{29}$Si NMR (79 MHz, $CDCl_3$) of product **10**

*Analytical data of product 10:*

Isolated yield: 93% (279.1 mg); $^{1}$H NMR ($CDCl_3$, δ, ppm): 2.39 (s, 3H, C*H*$_3$), 5.30 (d, 1H, $J_{HH}$ = 3.2 Hz, Si*H*), 6.70 (dd, 1H, $J_{HH}$ = 19.0, 3.2 Hz, =C*H*Si), 7.11 (d, 2H, $J_{HH}$ = 19.1 Hz, =C*H*), 7.39 – 7.48 (m, 10H, -C$_6$*H*$_4$- and Ph), 7.66 – 7.69 (m, 4H, Ph); $^{13}$C NMR ($CDCl_3$, δ, ppm): 21.34 (*C*H$_3$), 120.11, 126.73, 128.10, 129.33, 129.78, 133.82, 135.25, 135.59, 138.66, 149.11; $^{29}$Si NMR ($CDCl_3$, δ, ppm): -20.96; MS: *m/z* (rel. intensity): 53 (12), 78 (10), 105 (22), 106 (10), 180 (14), 181 (40), 182 (18), 195 (11), 196 (12), 207 (12), 208 (24), 221 (26), 222 (81), 223 (48), 224 (16), 299 (29), 300 (100, $M^+$).

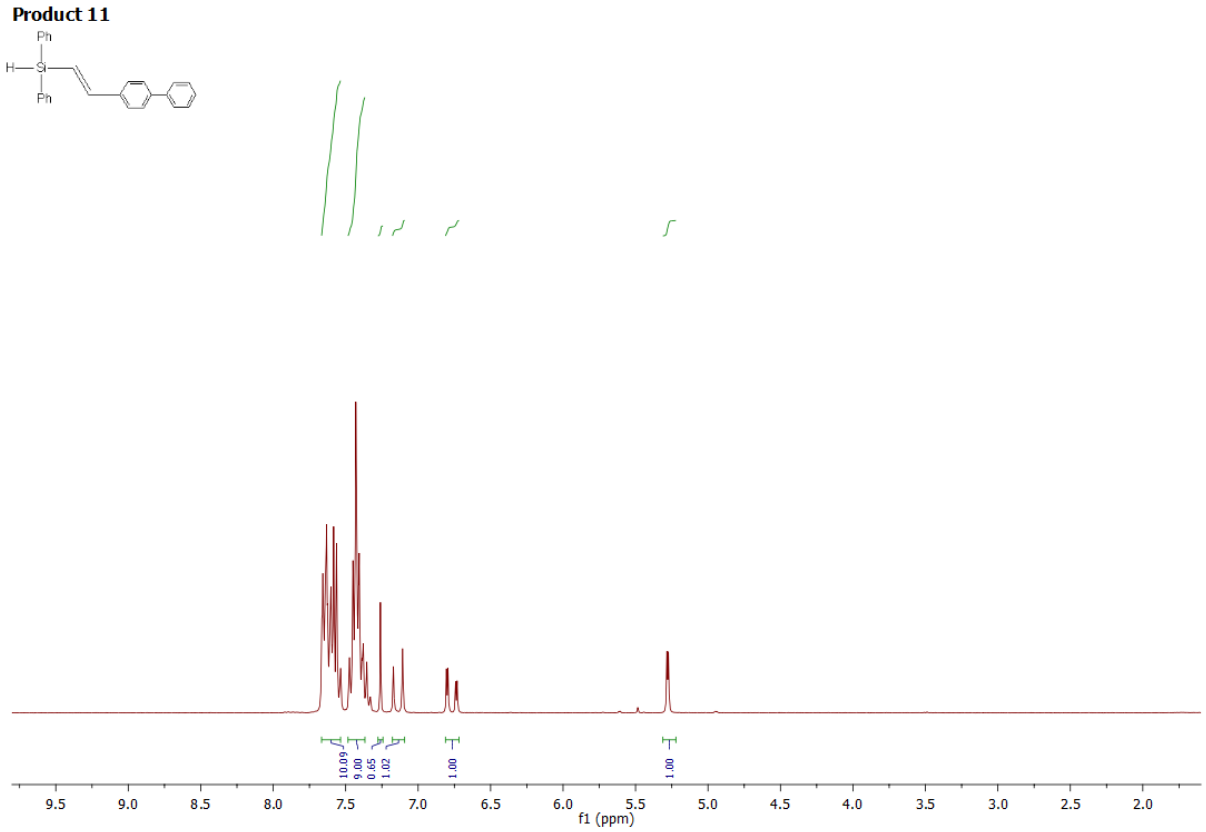



**Figure S25.** $^{1}H$ NMR (300 MHz, $CDCl_3$) of product **11**

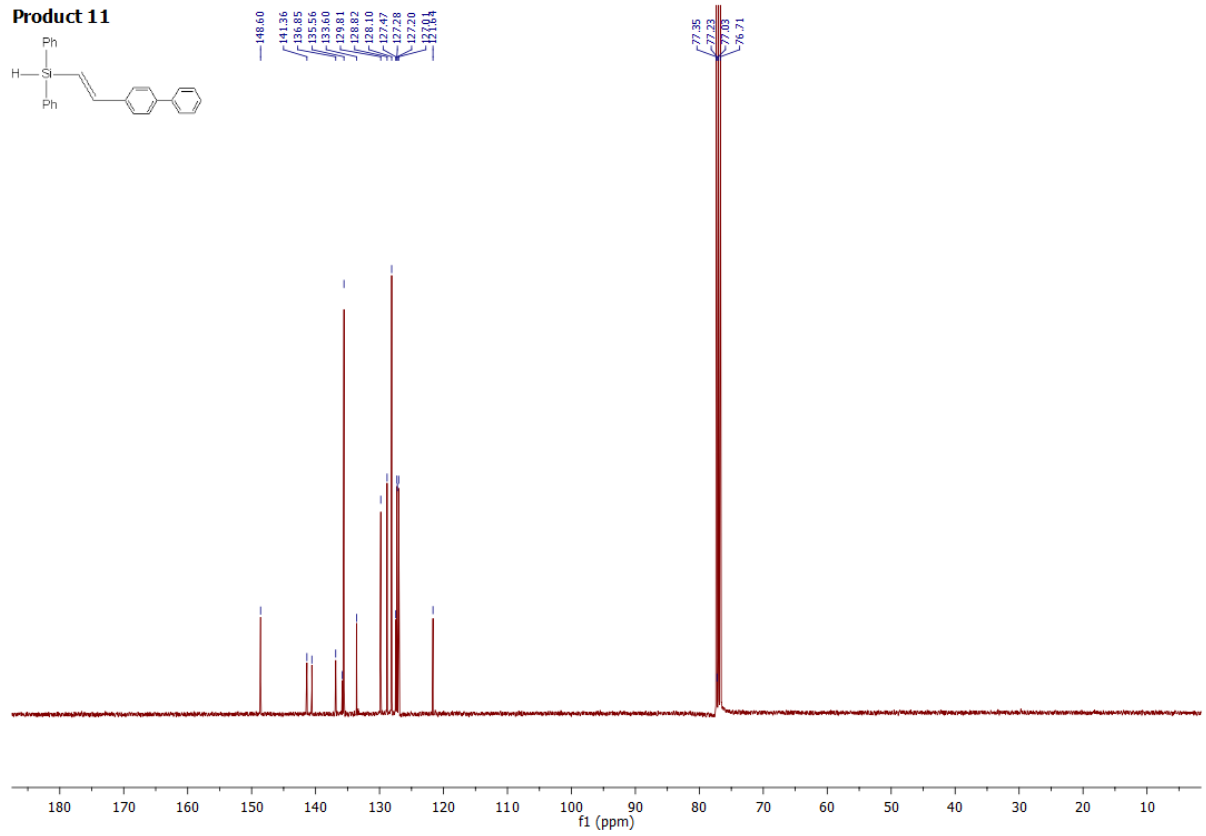



**Figure S26.** $^{13}C$ NMR (100 MHz, $CDCl_3$) of product **11**

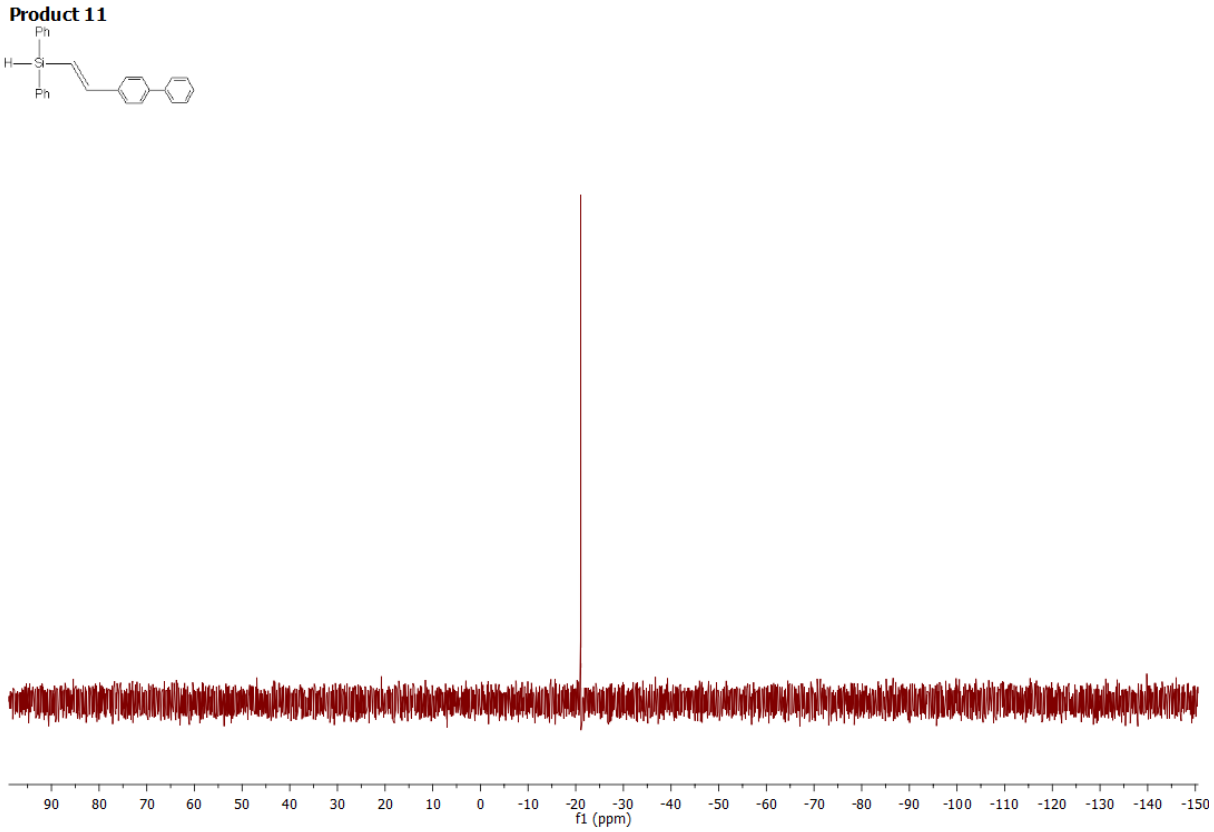



**Figure S27.** $^{29}$Si NMR (79 MHz, $CDCl_3$) of product **11**

*Analytical data of product 11:*

Isolated yield: 89% (325 mg); $^{1}$H NMR ($CDCl_3$, δ, ppm): 5.28 (d, 1H, $J_{HH}$ = 3.2 Hz, Si*H*), 6.77 (dd, 1H, $J_{HH}$ = 19.0, 3.2 Hz, =C*H*Si), 7.14 (d, 1H, $J_{HH}$ = 19.0 Hz, =C*H*), 7.37 – 7.48 (m, 10H, Ar), 7.53 – 7.68 (m, 9H, Ar); $^{13}$C NMR ($CDCl_3$, δ, ppm): 121.64, 127.01, 127.20, 127.28, 127.47, 128.10, 128.82, 129.81, 133.60, 135.56, 135.82, 136.85, 140.58, 141.36, 148.60; $^{29}$Si NMR ($CDCl_3$, δ, ppm): -21.15; MS: *m/z* (rel. intensity): 105 (15), 181 (32), 206 (20), 208 (17), 284 (95), 286 (46), 362 (100, $M^+$); anal. calcd. for $C_{26}H_{22}Si$ (%): C: 86.14, H: 6.12; found: C: 86.22, H: 6.20.

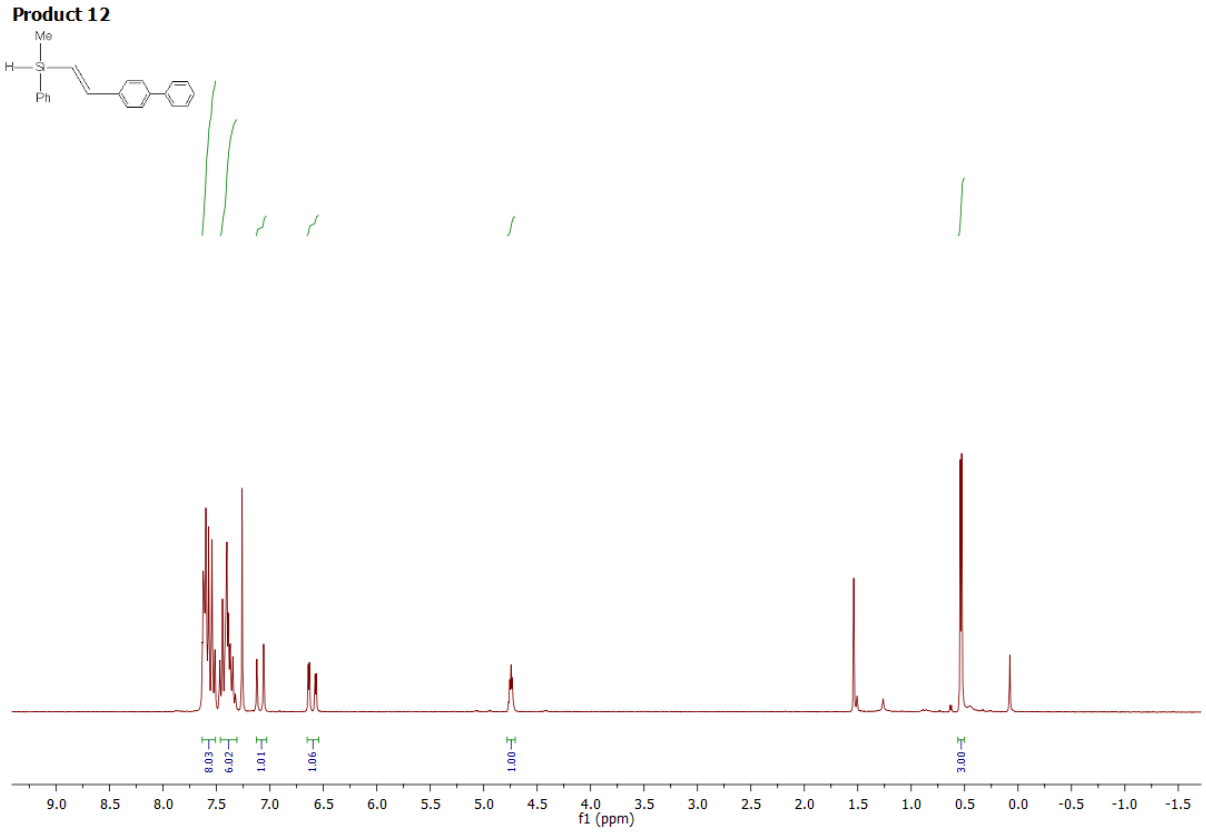



**Figure S28.** $^{1}H$ NMR (300 MHz, $CDCl_3$) of product **12**

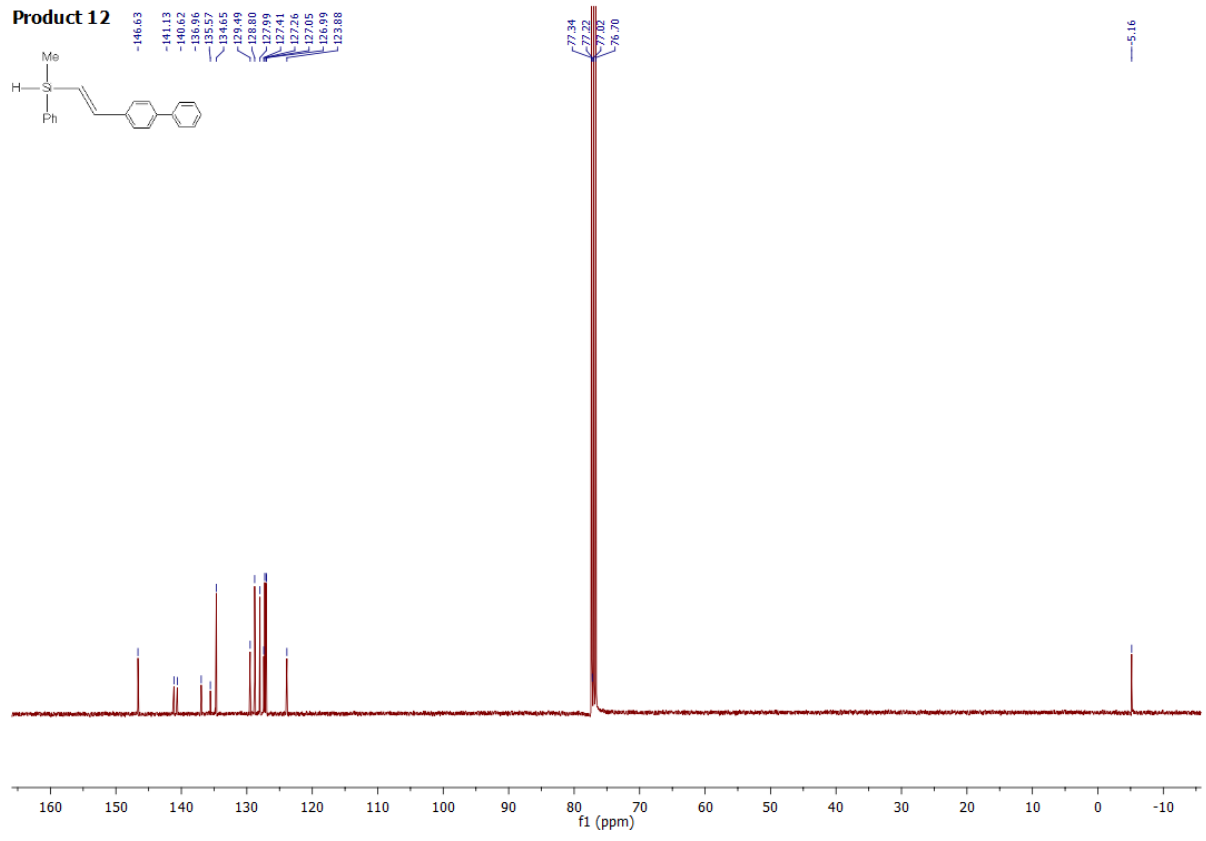



**Figure S29.** $^{13}C$ NMR (100 MHz, $CDCl_3$) of product **12**

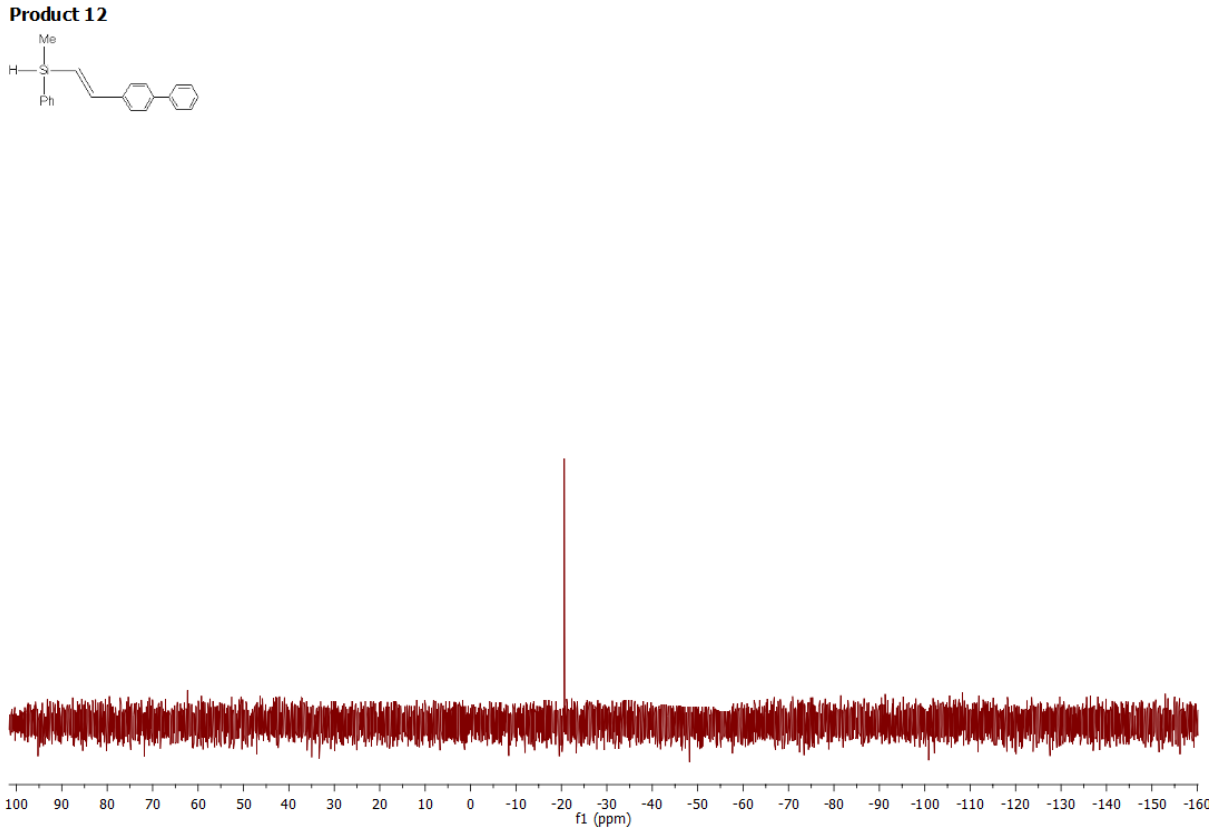



**Figure S30.** $^{29}$Si NMR (79 MHz, $CDCl_3$) of product **12**

*Analytical data of product 12:*

Isolated yield: 87% (261.1 mg); $^{1}$H NMR ($CDCl_3$, δ, ppm): 0.53 (d, 3H, $J_{HH}$ = 3.8 Hz, C*H*$_3$), 4.71-4.78 (m, 1H, Si*H*), 6.60 (dd, 1H, $J_{HH}$ = 19.0, 3.0 Hz, =C*H*Si), 7.09 (d, 1H, $J_{HH}$ = 19.0 Hz, =C*H*), 7.31 – 7.46 (m, 6H, Ar), 7.50 – 7.63 (m, 8H, Ar); $^{13}$C NMR ($CDCl_3$, δ, ppm): -5.16, 123.88, 126.99, 127.05, 127.26, 127.41, 127.99, 128.80, 129.49, 134.65, 135.57, 136.96, 140.62, 141.13, 146.63; $^{29}$Si NMR ($CDCl_3$, δ, ppm): -20.63; MS: *m/z* (rel. intensity): 105 (14), 121 (20), 146 (12), 178 (15), 222 (22), 223 (10), 285 (92), 286 (25), 299 (13), 300 (100, $M^+$); anal. calcd. for $C_{21}H_{20}Si$ (%): C: 83.94, H: 6.71; found: C: 83.99, H: 6.80.

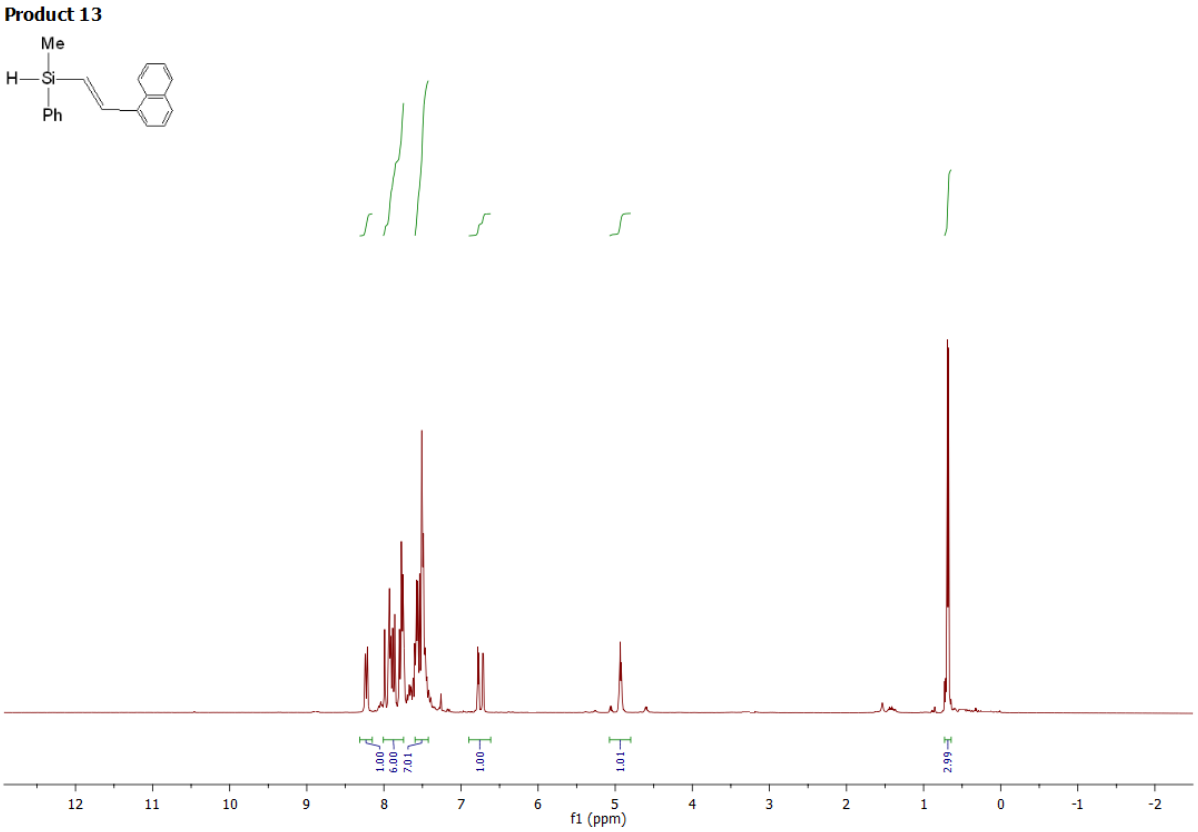



**Figure S31.** $^{1}H$ NMR (300 MHz, $CDCl_3$) of product **13**

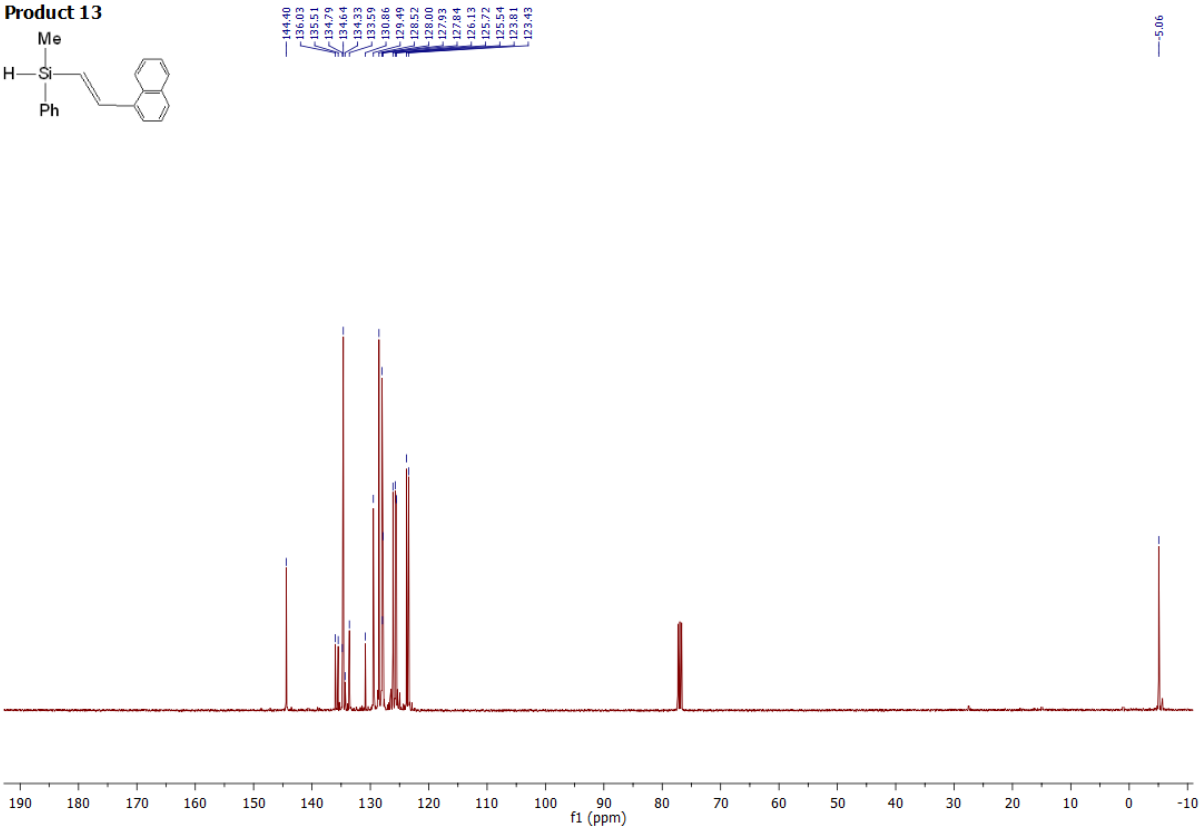



**Figure S32.** $^{13}C$ NMR (100 MHz, $CDCl_3$) of product **13**

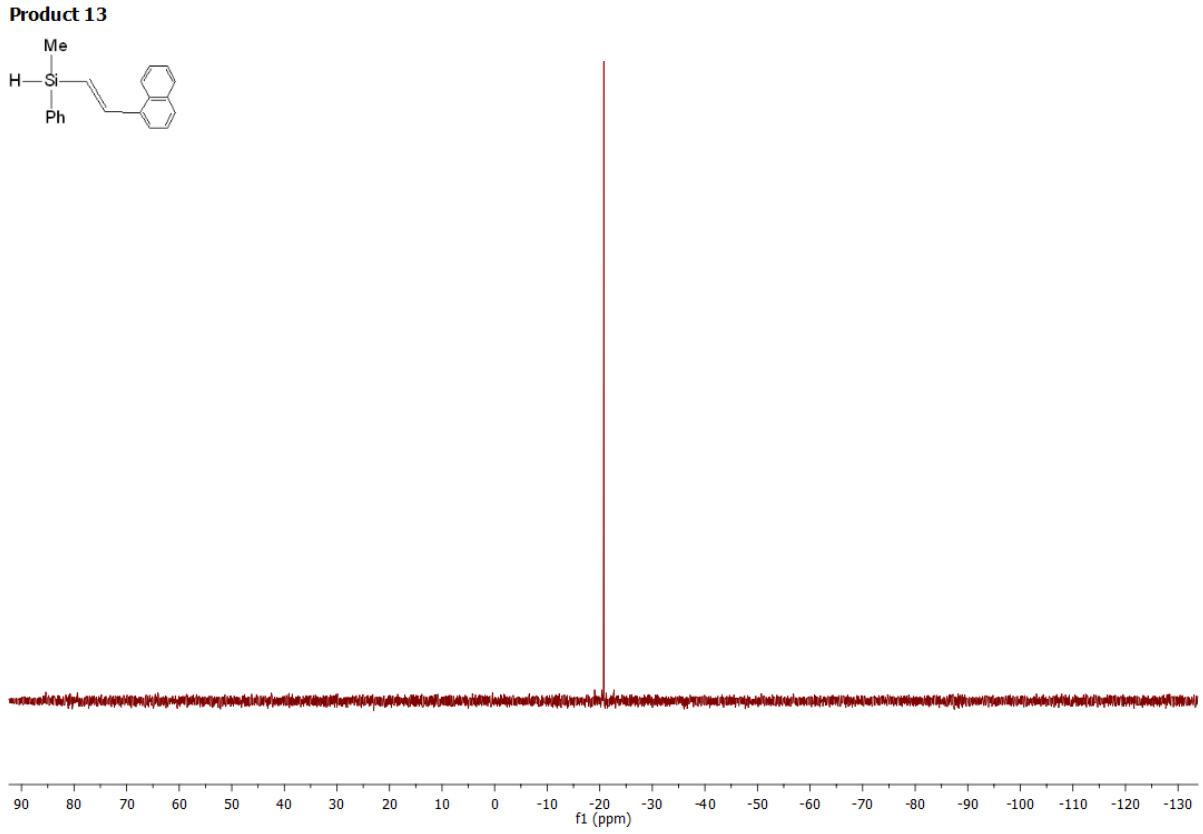



**Figure S33.** $^{29}Si$ NMR (79 MHz, $CDCl_3$) of product **13**

*Analytical data of product 13:*

Isolated yield: 89% (244 mg); $^{1}H$ NMR ($CDCl_3$, δ, ppm): 0.68 (d, 3H, $J_{HH}$ = 3.8 Hz, C*H*$_3$), 4.92 – 4.95 (m, 1H, Si*H*), 6.75 (dd, 1H, $J_{HH}$ = 18.8, 3.0 Hz, =C*H*Si), 7.42 – 7.60 (m, 7H, =C*H* and Ar), 7.74 – 8.01 (m, 6H, Ar), 8.23 (d, 1H, $J_{HH}$ = 7.7 Hz, Ar); $^{13}C$ NMR ($CDCl_3$, δ, ppm): -5.06, 123.43, 123.81, 125.54, 125.72, 126.13, 127.84, 127.93, 128.00, 128.52, 129.49, 130.86, 133.59, 134.33, 134.64, 134.79, 135.51, 136.03, 144.40; $^{29}Si$ NMR ($CDCl_3$, δ, ppm): -20.77; MS: *m/z* (rel. intensity): 105 (15), 152 (14), 181 (26), 195 (27), 196 (24), 197 (11), 259 (87), 260 (29), 273 (28), 274 (100, $M^+$); anal. calcd. for $C_{19}H_{18}Si$ (%): C: 83.15, H: 6.01; found: C: 83.29, H: 6.22.

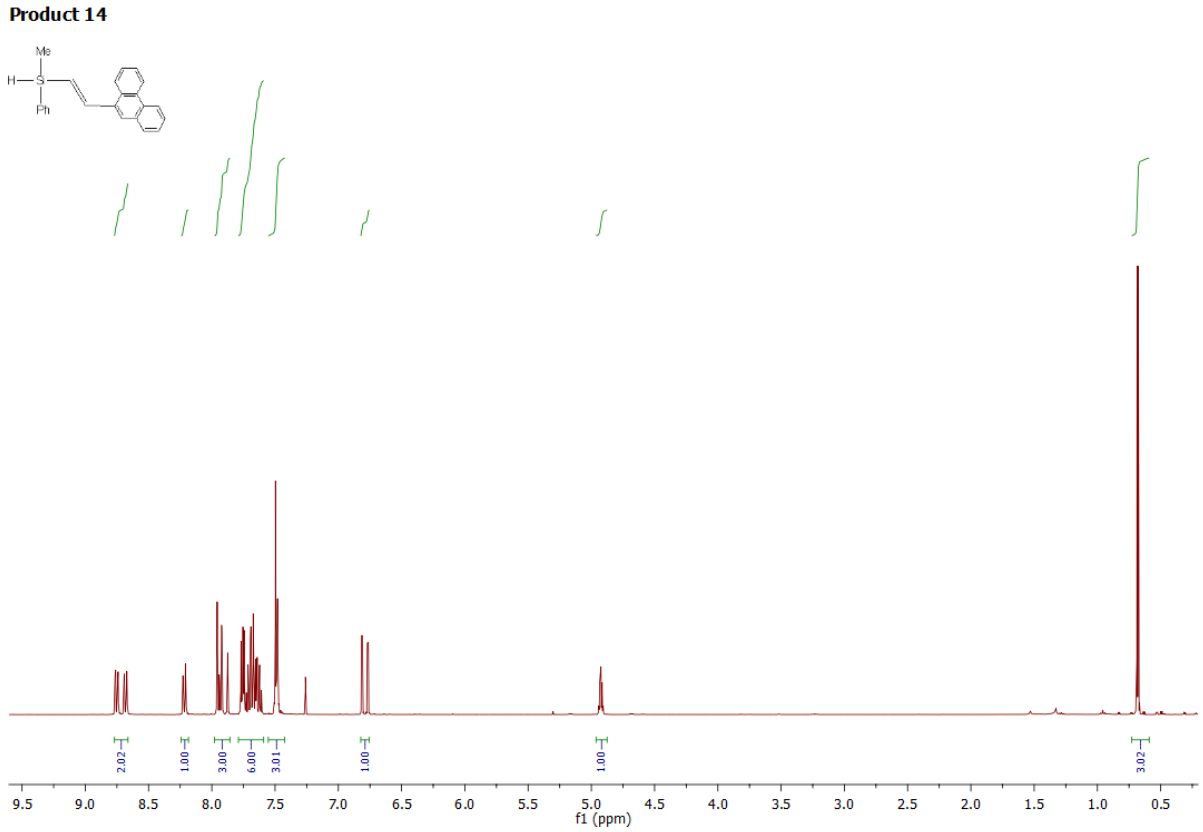



**Figure S34.** $^{1}H$ NMR (300 MHz, $CDCl_3$) of product **14**

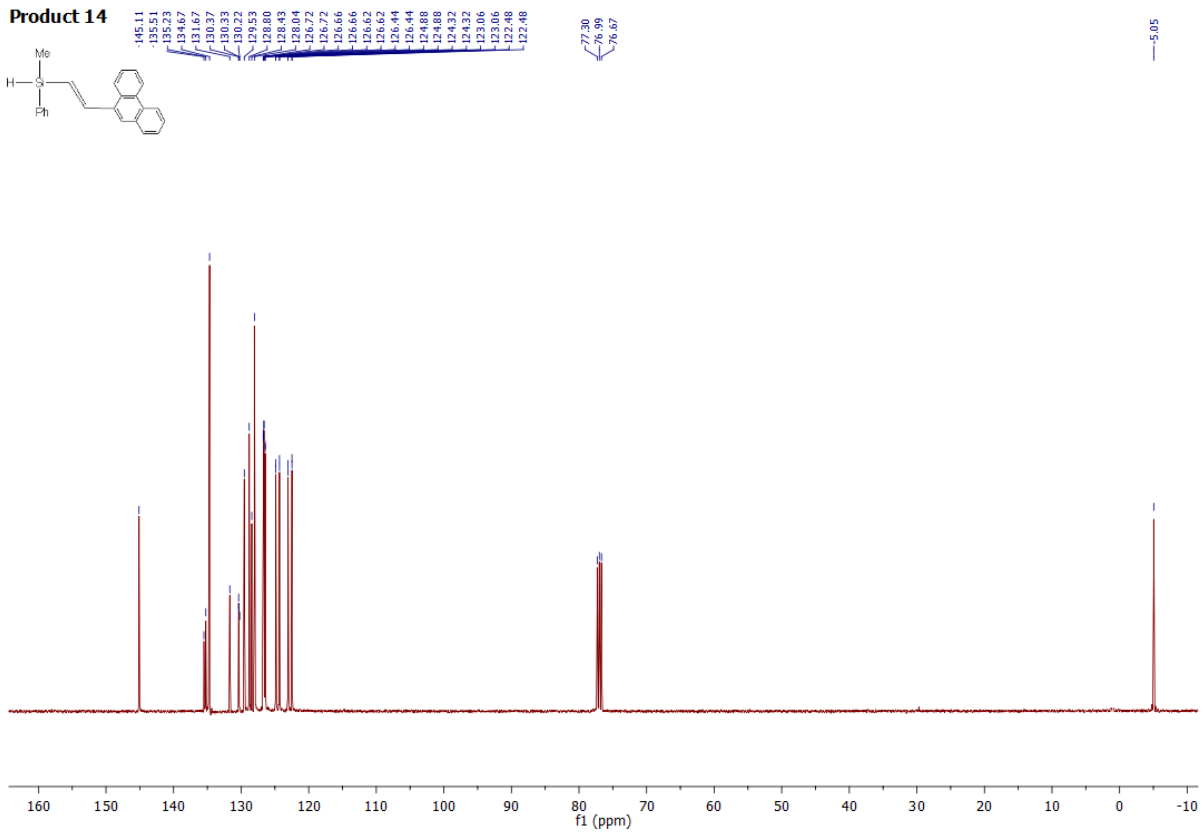



**Figure S35.** $^{13}C$ NMR (100 MHz, $CDCl_3$) of product **14**

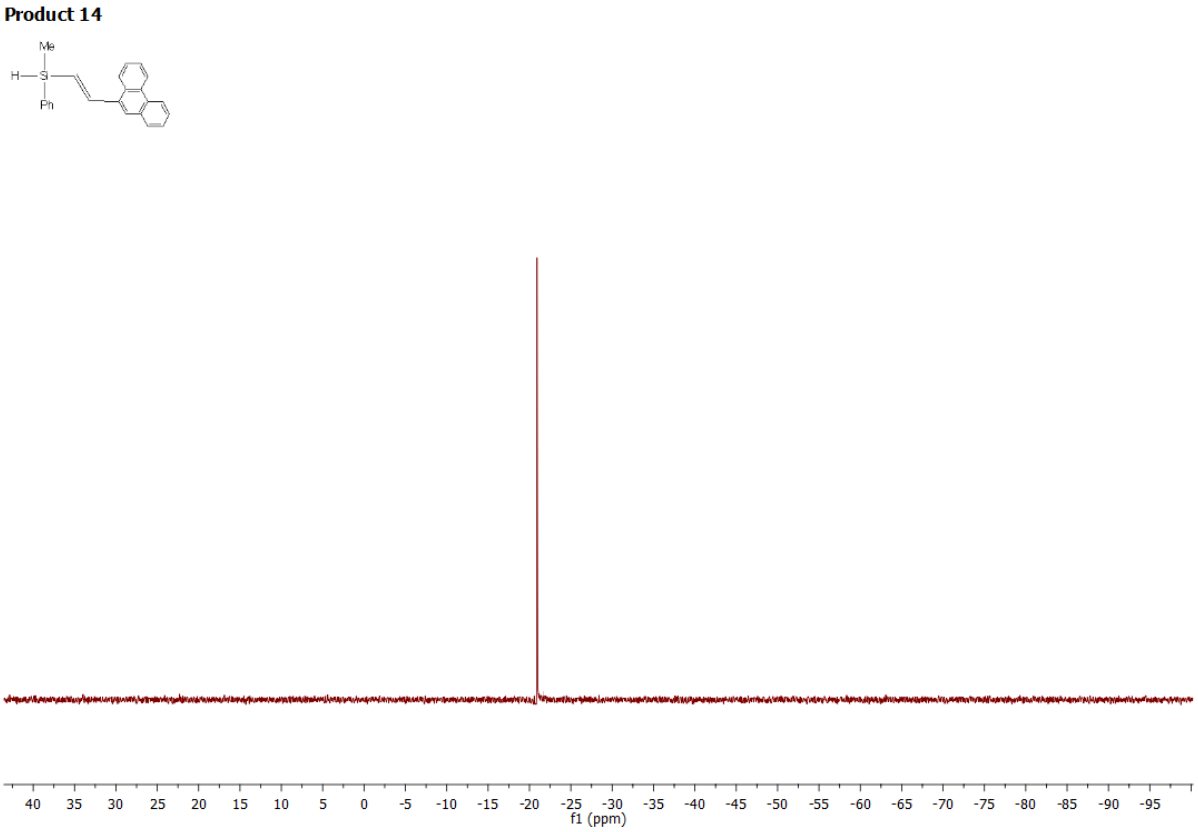



**Figure S36.** $^{29}$Si NMR (79 MHz, $CDCl_3$) of product **14**

*Analytical data of product 14:*

Isolated yield: 87% (282 mg);$^{1}$H NMR ($CDCl_3$, δ, ppm): 0.68 (d, 3H, $J_{HH}$ = 3.8 Hz, C*H*$_3$), 4.88 – 4.97 (m, 1H, Si*H*),6.79 (dd, 1H, $J_{HH}$ = 18.7, 3.0 Hz, =C*H*Si), 7.42 – 7.55 (m, 3H, Ar), 7.59 – 7.79 (m, 6H, Ar), 7.86 – 7.98 (m, 3H, =C*H* and Ar), 8.18 – 8.24 (m, 1H, Ar), 8.67 – 8.77 (m, 2H, Ar); $^{13}$C NMR ($CDCl_3$, δ, ppm): -5.05 (*C*H$_3$), 122.48, 123.06, 124.32, 124.88, 126.44, 126.64 (d, *J* = 3.7 Hz), 126.72, 128.04, 128.43, 128.80, 129.53, 130.22, 130.33, 130.37, 131.67, 134.67, 135.23, 135.51, 145.11; $^{29}$Si NMR ($CDCl_3$, δ, ppm): -20.91; MS: *m/z* (rel. intensity): 105 (10), 231 (14), 246 (10), 309 (98), 310 (37), 324 (100, $M^+$); anal. calcd. for $C_{23}H_{20}Si$ (%): C: 85.13, H: 6.21; found: C: 85.30, H: 6.42.

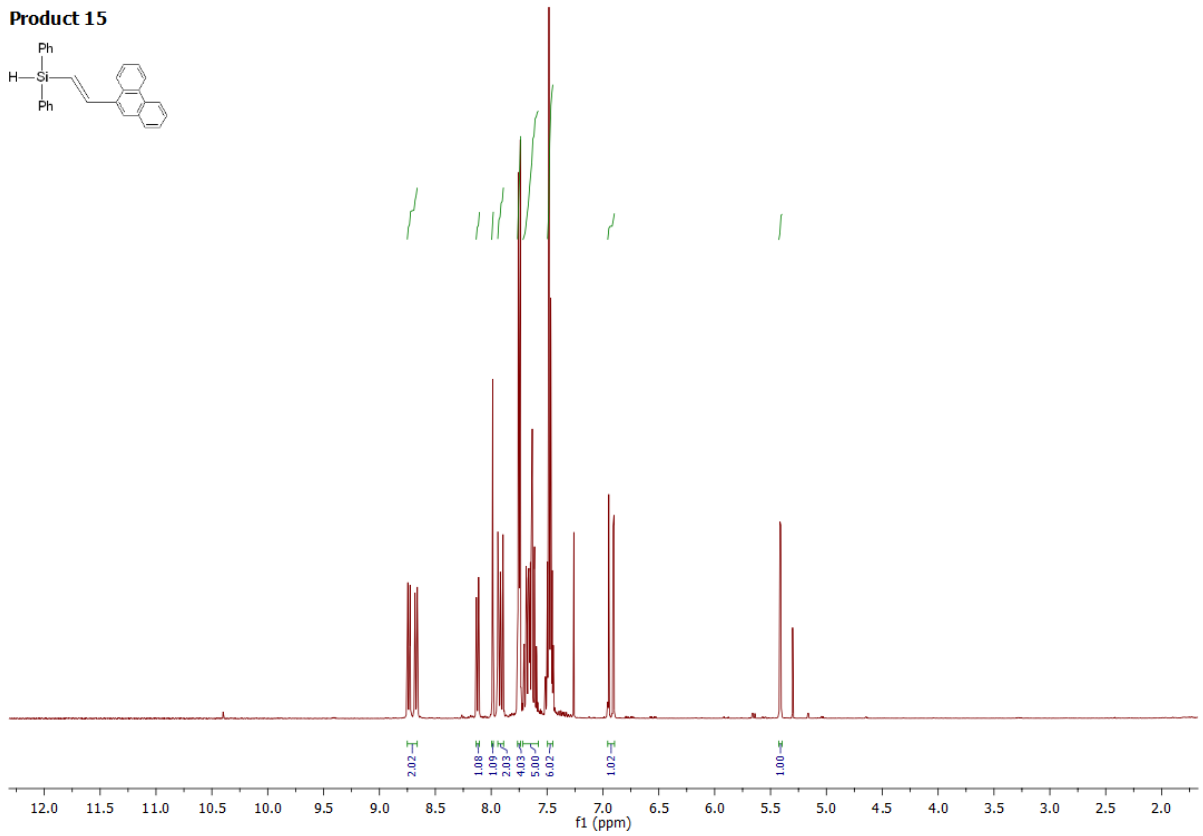



**Figure S37.** $^{1}$H NMR (400 MHz, $CDCl_3$) of product **15**

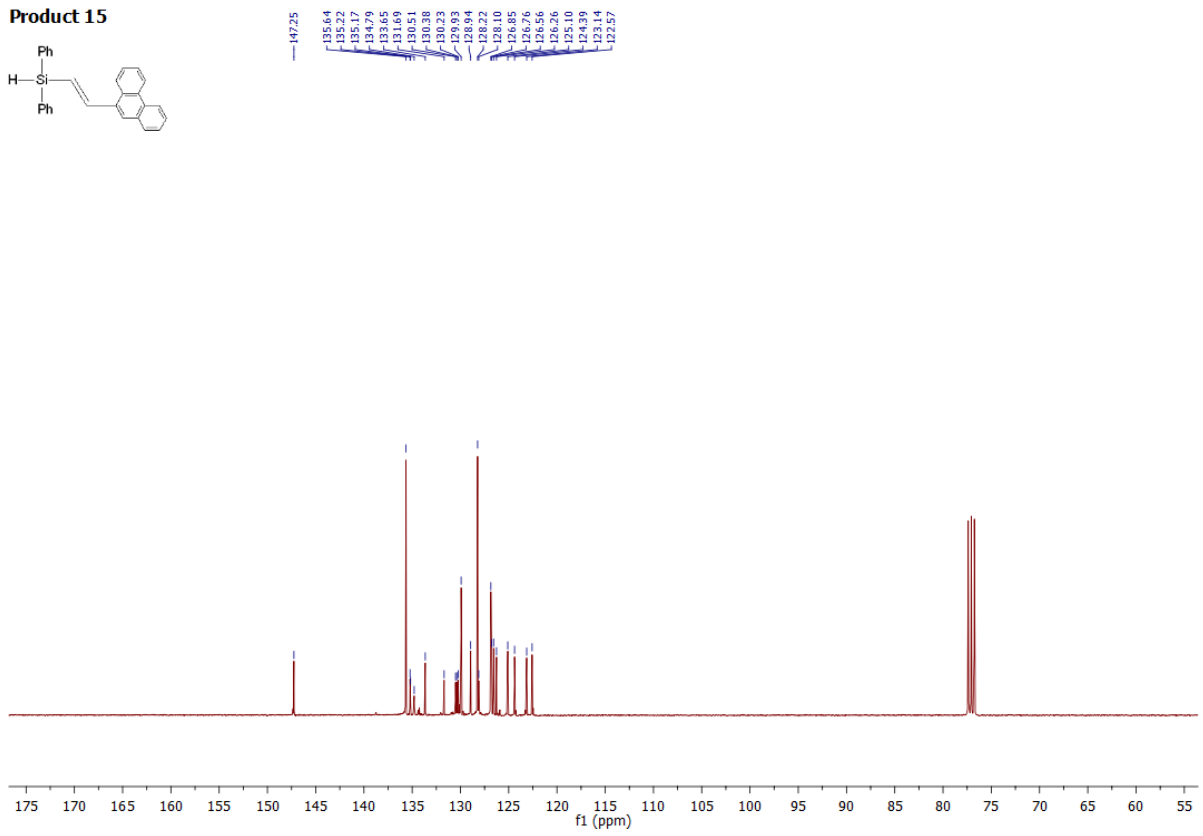



**Figure S38.** $^{13}$C NMR (100 MHz, $CDCl_3$) of product **15**

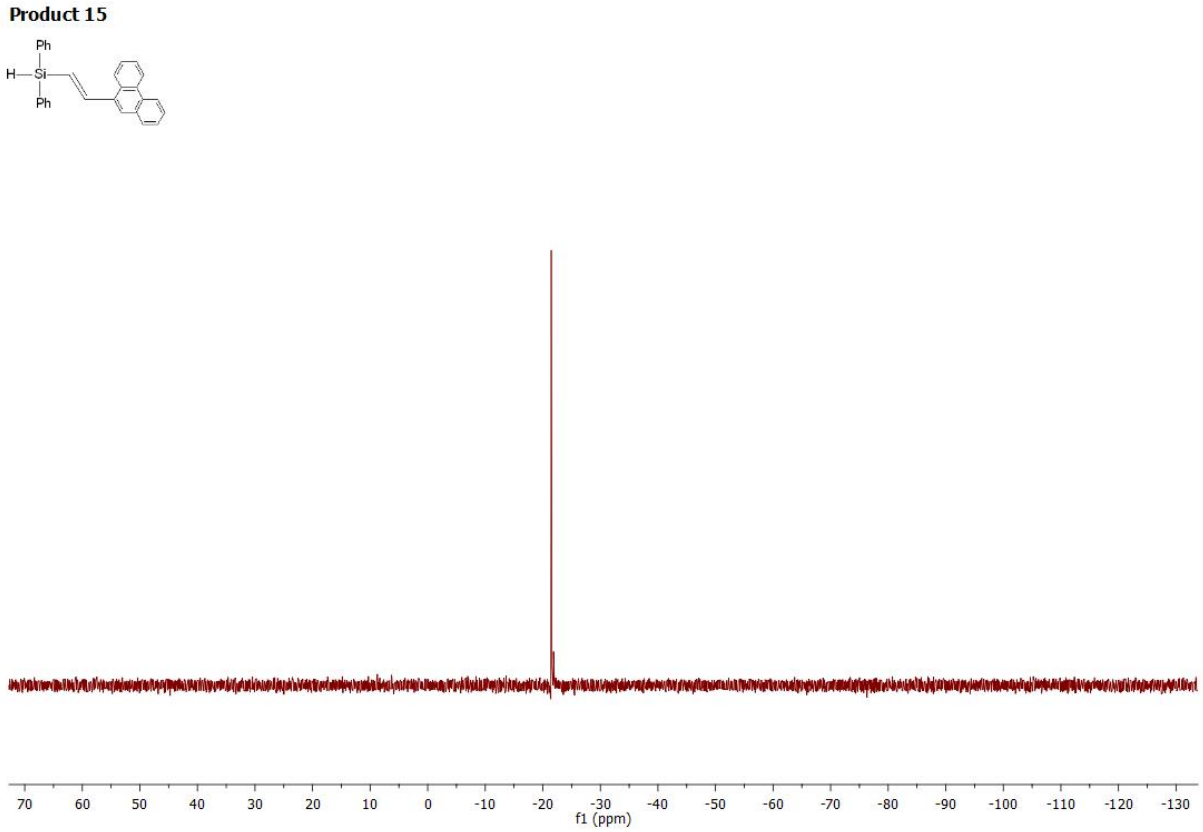



**Figure S39.** $^{29}$Si NMR (79 MHz, $CDCl_3$) of product **15**

*Analytical data of product 15:*

Isolated yield: 89% (343.7 mg); $^{1}$H NMR ($CDCl_3$, δ, ppm): 5.41 (d, 1H, *JHH* = 3.2 Hz, Si*H*), 6.93 (dd, 1H, $J_{HH}$ = 18.7, 3.2 Hz, =C*H*Si), 7.45 – 7.50 (m, 6H, =C*H* and Ar), 7.58 – 7.72 (m, 5H, Ar), 7.74 – 7.76 (m, 4H, Ar), 7.89 – 7.94 (m, 2H, Ar), 7.98 – 8.0 (m, 1H, Ar), 8.10 – 8.14 (m, 1H, Ar); $^{13}$C NMR ($CDCl_3$, δ, ppm): 122.57, 123.14, 124.39, 125.10, 126.26,126.56, 126.76, 126.85, 128.10, 128.22, 128.94, 129.93, 130.23, 130.38, 130.51, 131.69, 133.65, 134.79, 135.17, 135.22, 135.64, 147.25; $^{29}$Si NMR ($CDCl_3$, δ, ppm): -21.46; MS: *m/z* (rel. intensity): 105 (14), 179 (18), 184 (13), 202 (21), 203 (13), 307 (28), 308 (57), 309 (31), 310 (11), 386 (100, $M^+$); anal. calcd. for $C_{28}H_{22}Si$ (%): C: 87.00, H: 5.74; found: C: 87.12, H: 5.82.

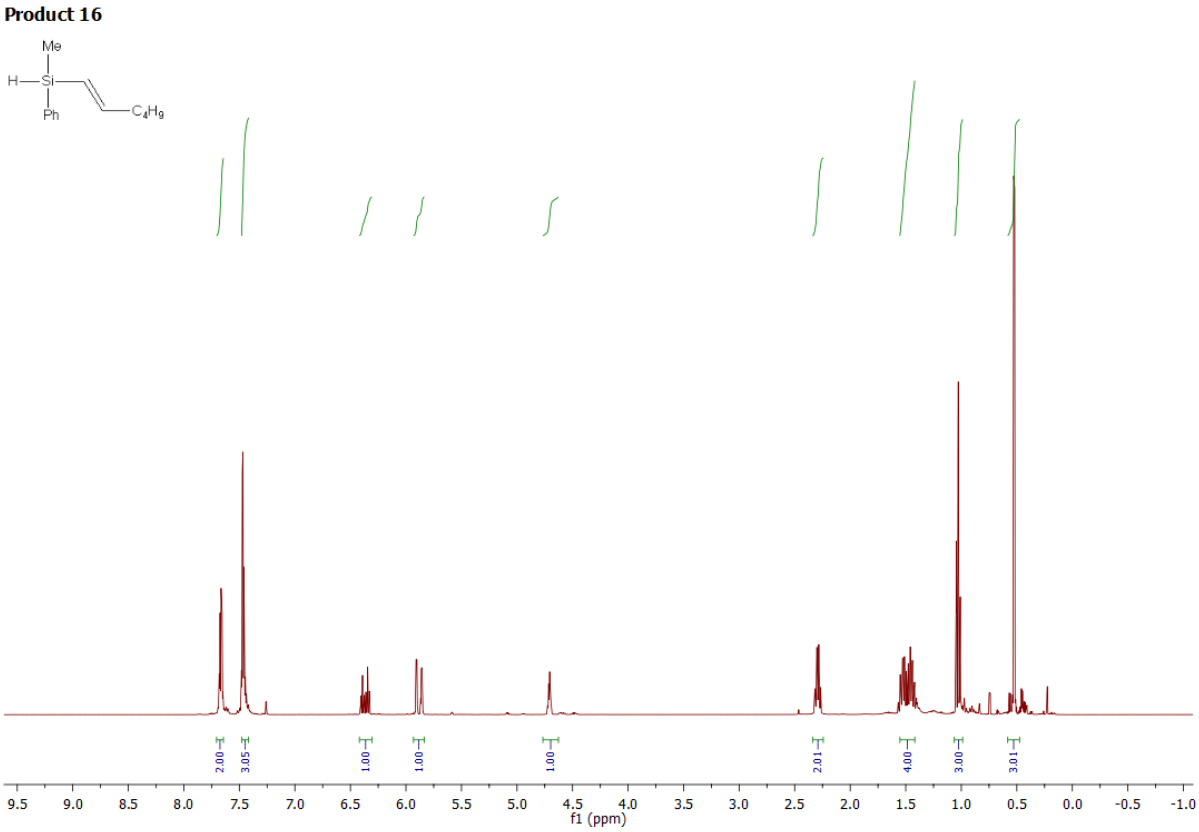



**Figure S40.** $^{1}$H NMR (400 MHz, $CDCl_3$) of product **16**

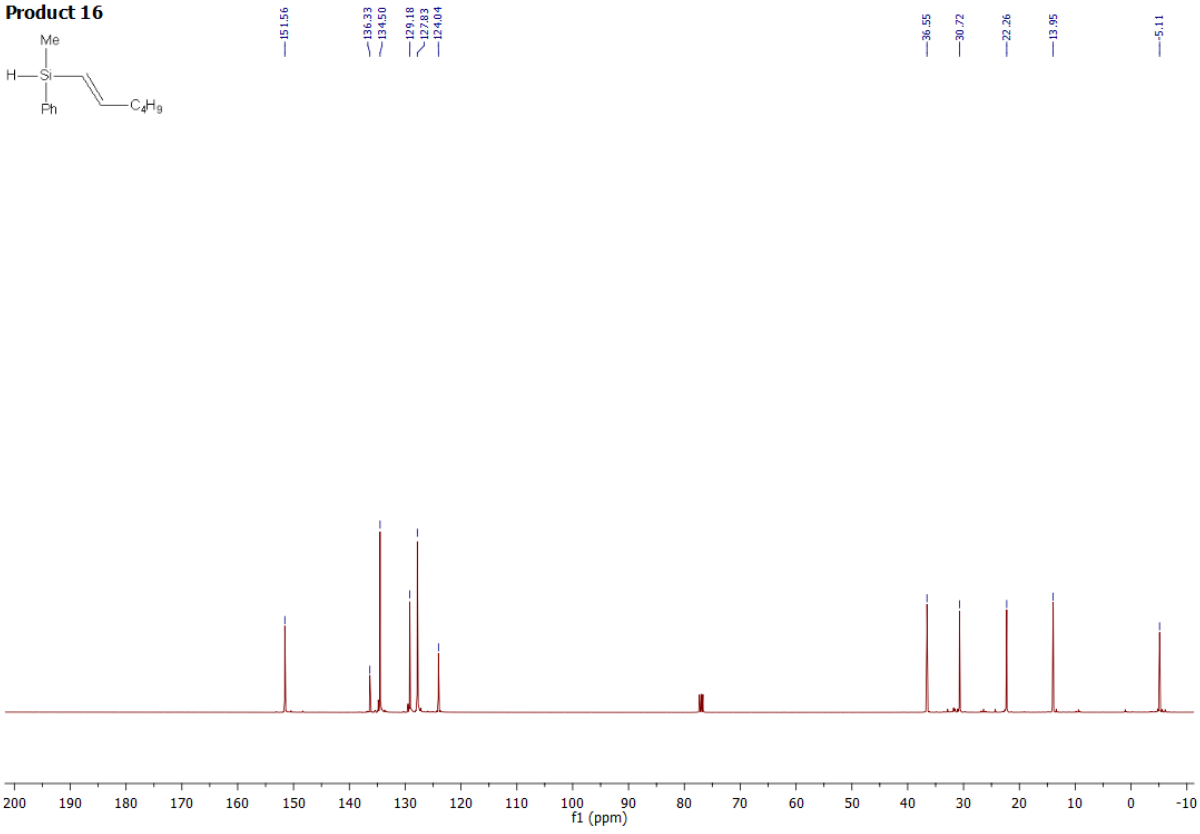



**Figure S41.** $^{13}$C NMR (100 MHz, $CDCl_3$) of product **16**

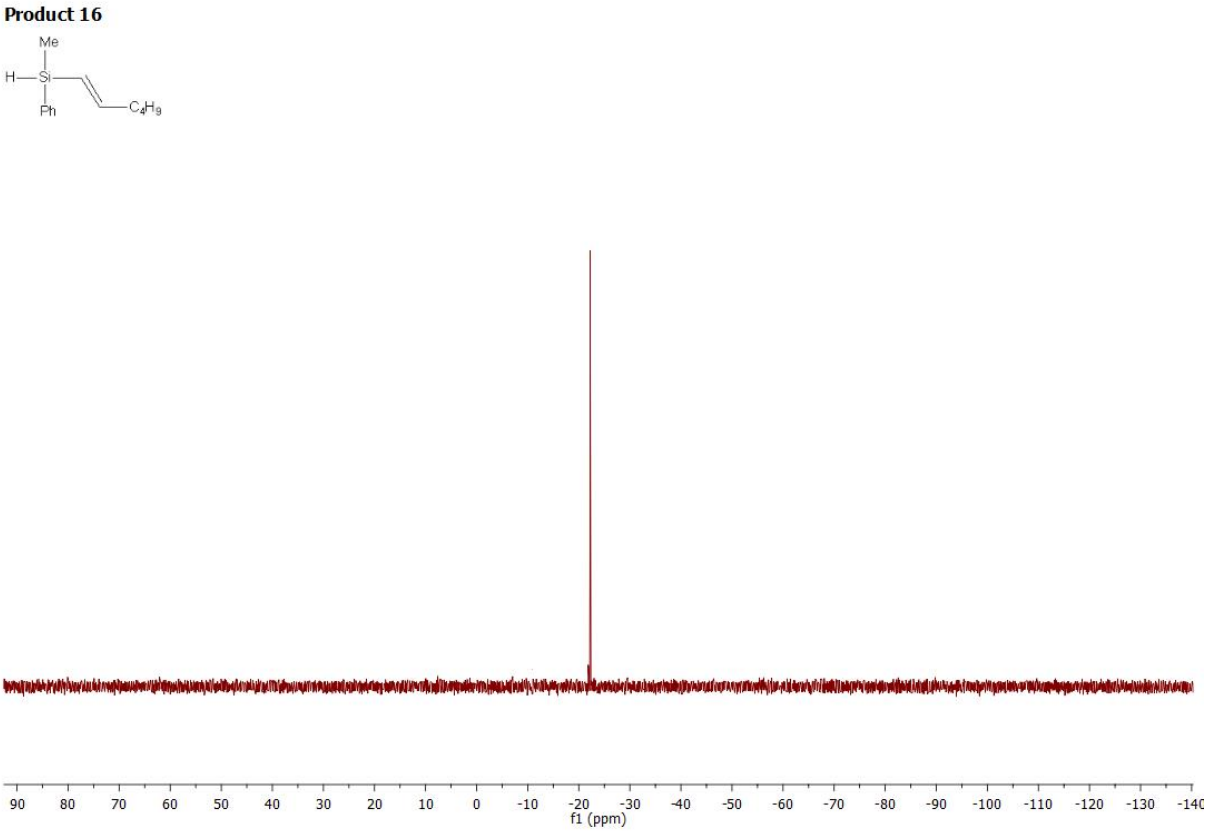



**Figure S42.** $^{29}$Si NMR (79 MHz, $CDCl_3$) of product **16**

*Analytical data of product 16:*

Isolated yield: 94% (191.9 mg); $^{1}$H NMR ($CDCl_3$, δ, ppm): 0.52 (d, 3H, $J_{HH}$ = 3.8 Hz, C*H*$_3$), 1.03 (d, 3H, $J_{HH}$ = 7.2 Hz, -$(CH_2)_3$C*H*$_3$), 1.42 – 1.55 (m, 4H, -(C*H*$_2$)$_2$CH$_3$), 2.24 – 2.34 (m, 2H, =CHC*H*$_2$), 4.64 – 4.75 (m, 1H, Si*H*), 5.84 – 5.93 (m, 1H, =C*H*Si), 6.37 (dt, 1H, $J_{HH}$ = 18.5, 6.3 Hz, =C*H*CH$_2$), 7.42 – 7.48 (m, 3H, Ph), 7.64 – 7.71 (m, 2H, Ph); $^{13}$C NMR ($CDCl_3$, δ, ppm): -5.11 (*C*H$_3$), 13.95, 22.26, 30.72, 36.55, 124.04, 127.83, 129.18, 134.50, 136.33, 151.66; $^{29}$Si NMR ($CDCl_3$, δ, ppm): -22.21; MS: *m/z* (rel. intensity): 105 (17), 121 (30), 202 (10), 204 (100, $M^+$); anal. calcd. for $C_{13}H_{20}Si$ (%): C: 76.40, H: 9.86; found: C: 76.51, H: 9.90.

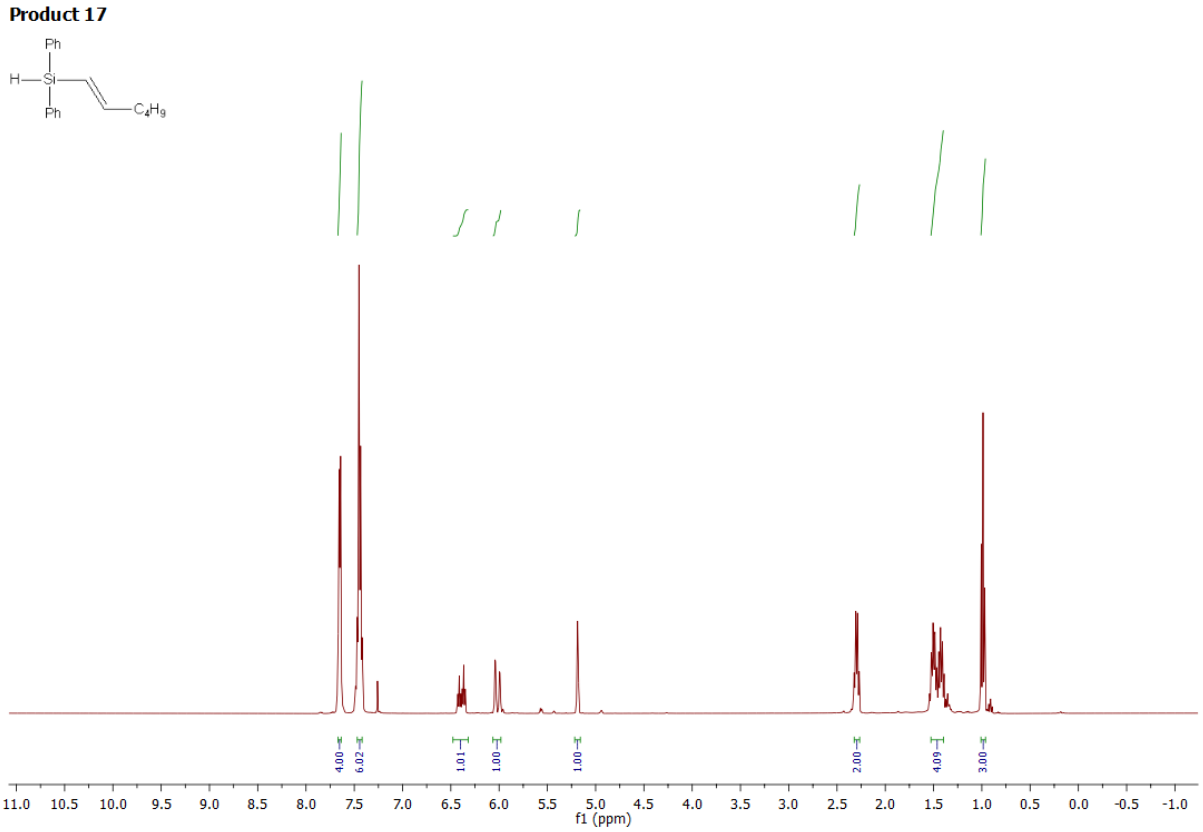



**Figure S43.** $^{1}$H NMR (400 MHz, $CDCl_3$) of product **17**

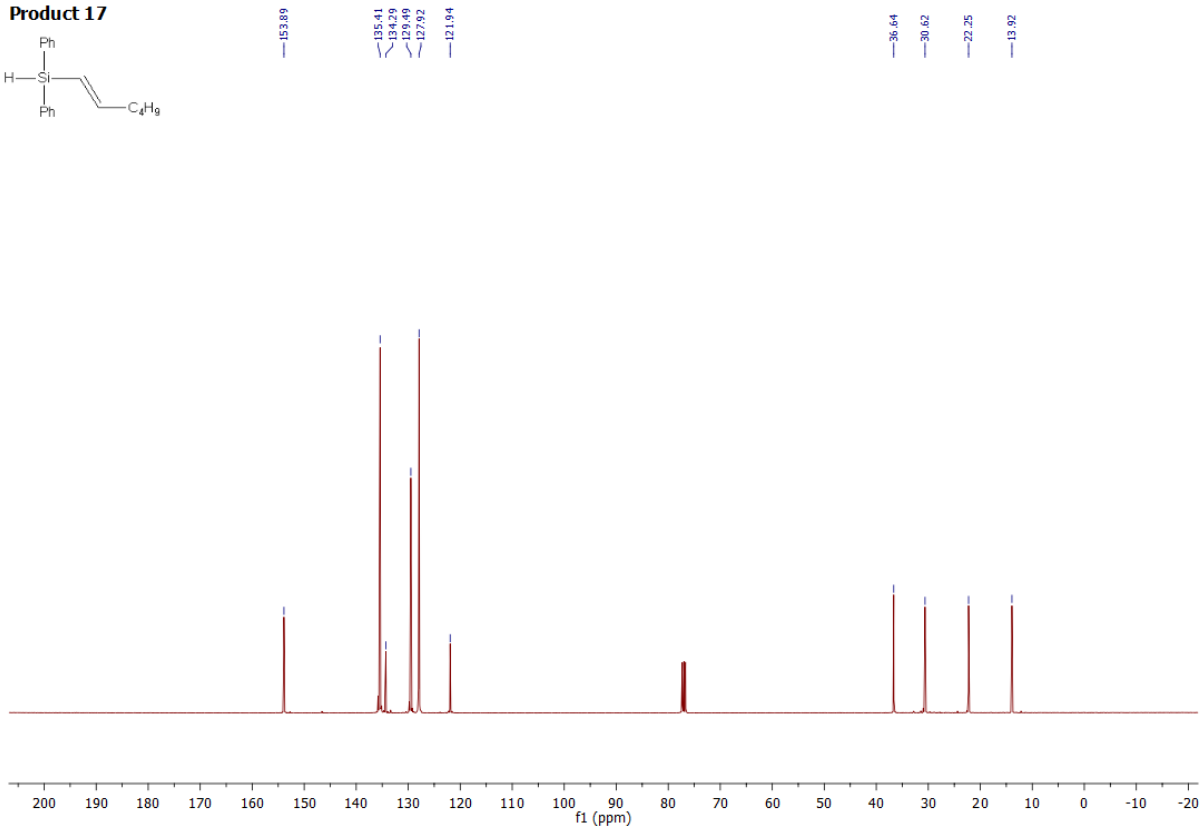



**Figure S44.** $^{13}$C NMR (100 MHz, $CDCl_3$) of product **17**

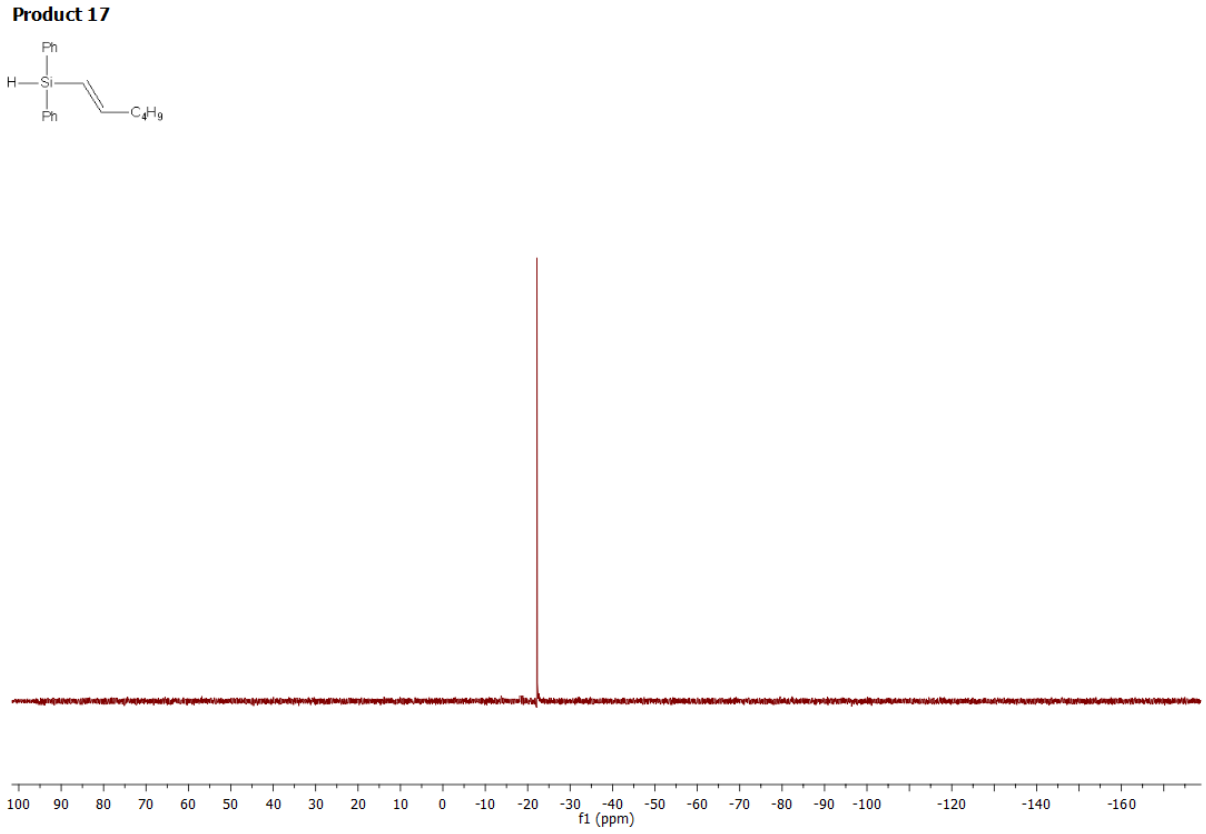



**Figure S45.** $^{29}$Si NMR (79 MHz, $CDCl_3$) of product **17**

*Analytical data of product 17:*

Isolated yield: 92% (244.8 mg); $^{1}$H NMR ($CDCl_3$, δ, ppm): 0.99 (t, 3H, $J_{HH}$ = 7.2 Hz, -$(CH_2)_3CH_3$), 1.40 – 1.53 (m, 4H, -$(CH_2)_2CH_3$), 2.27 – 2.32 (m, 2H, =$CHCH_2$), 5.18 (d, 1H, $J_{HH}$ = 3.0 Hz, Si*H*), 5.98 – 6.07 (m, 1H, =C*H*Si), 6.39 (dt, 1H, $J_{HH}$ = 18.5, 6.2 Hz, =C*H*$CH_2$), 7.42 – 7.47 (m, 6h, Ph), 7.64 – 7.70 (m, 4H, Ph); $^{13}$C NMR ($CDCl_3$, δ, ppm): 13.92, 22.25, 30.62, 36.64, 121.94, 127.92, 129.49, 134.29, 135.41, 153.89; $^{29}$Si NMR ($CDCl_3$, δ, ppm): -22.20; MS: *m/z* (rel. intensity): 53 (18), 105 (42), 106 (16), 145 (16), 146 (17), 181 (33), 183 (48), 184 (19), 188 (19), 189 (26), 259 (17), 265 (100), 266 (28, $M^+$).

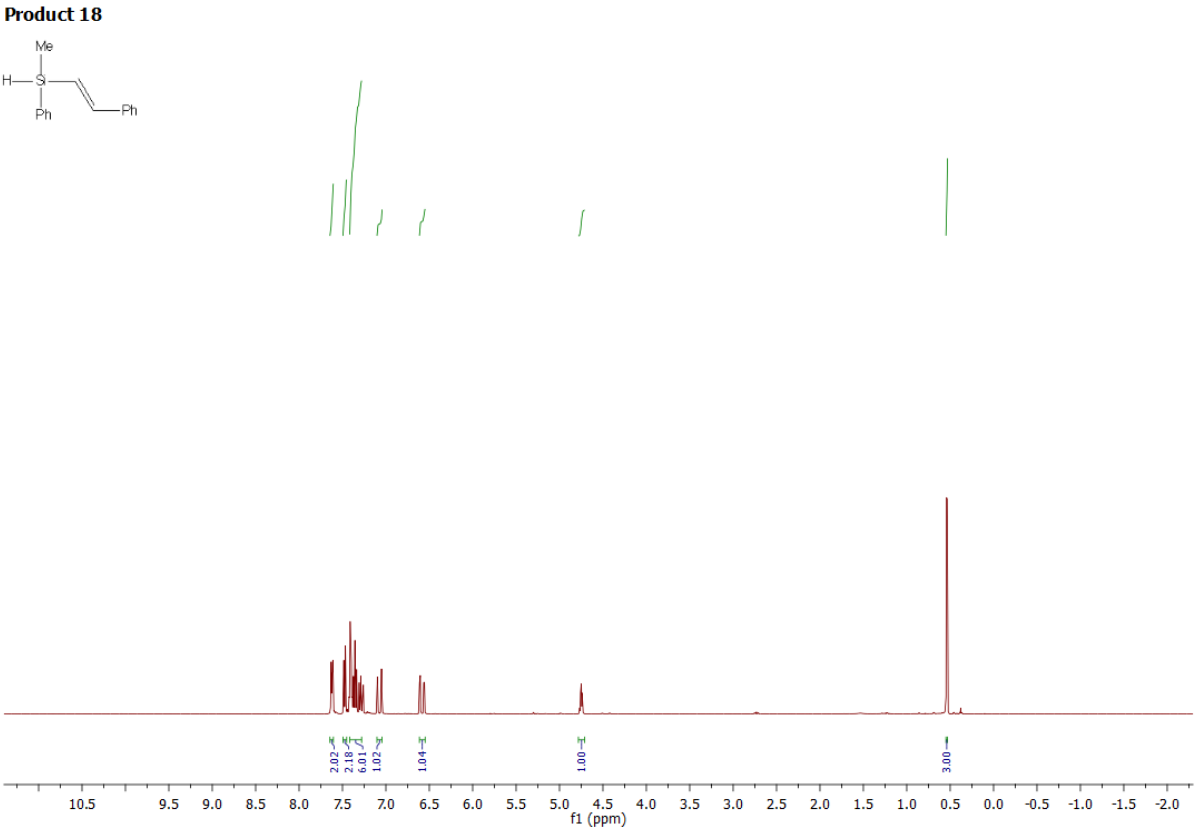



**Figure S46.** $^{1}H$ NMR (400 MHz, $CDCl_3$) of product **18**

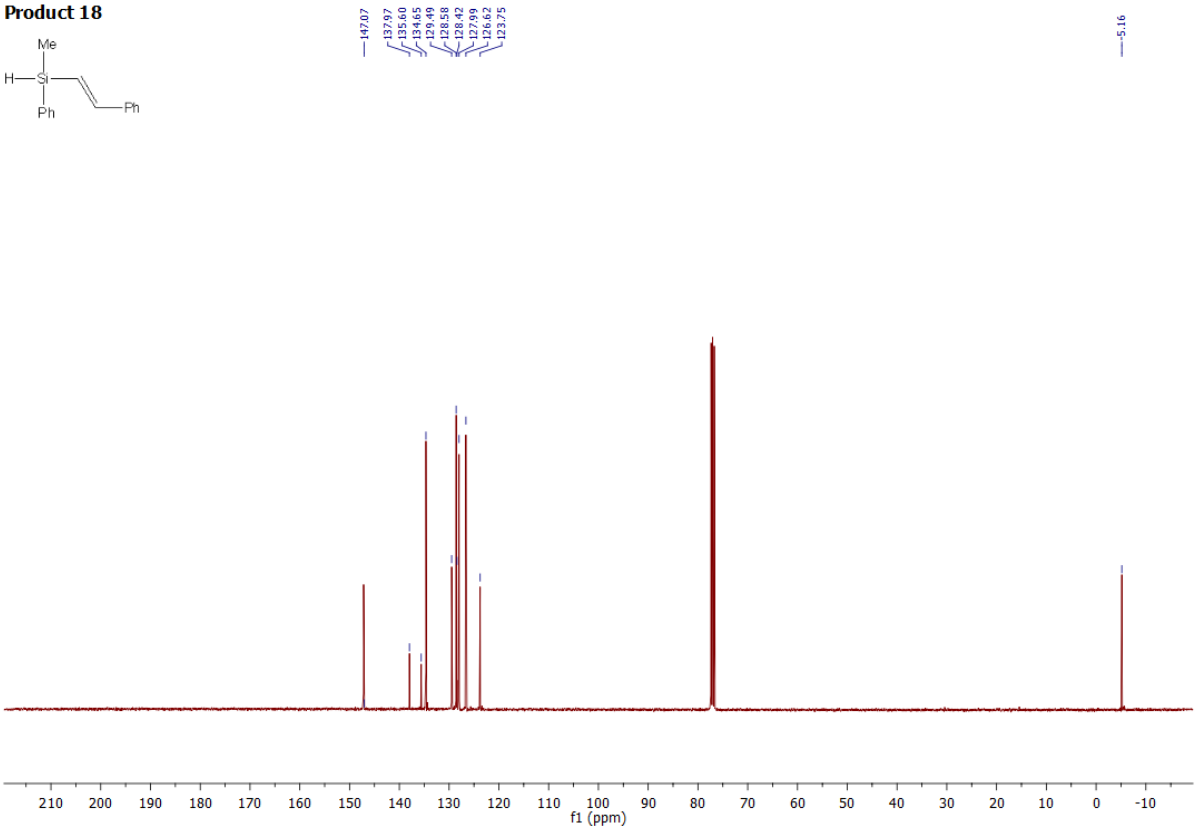



**Figure S47.** $^{13}C$ NMR (100 MHz, $CDCl_3$) of product **18**

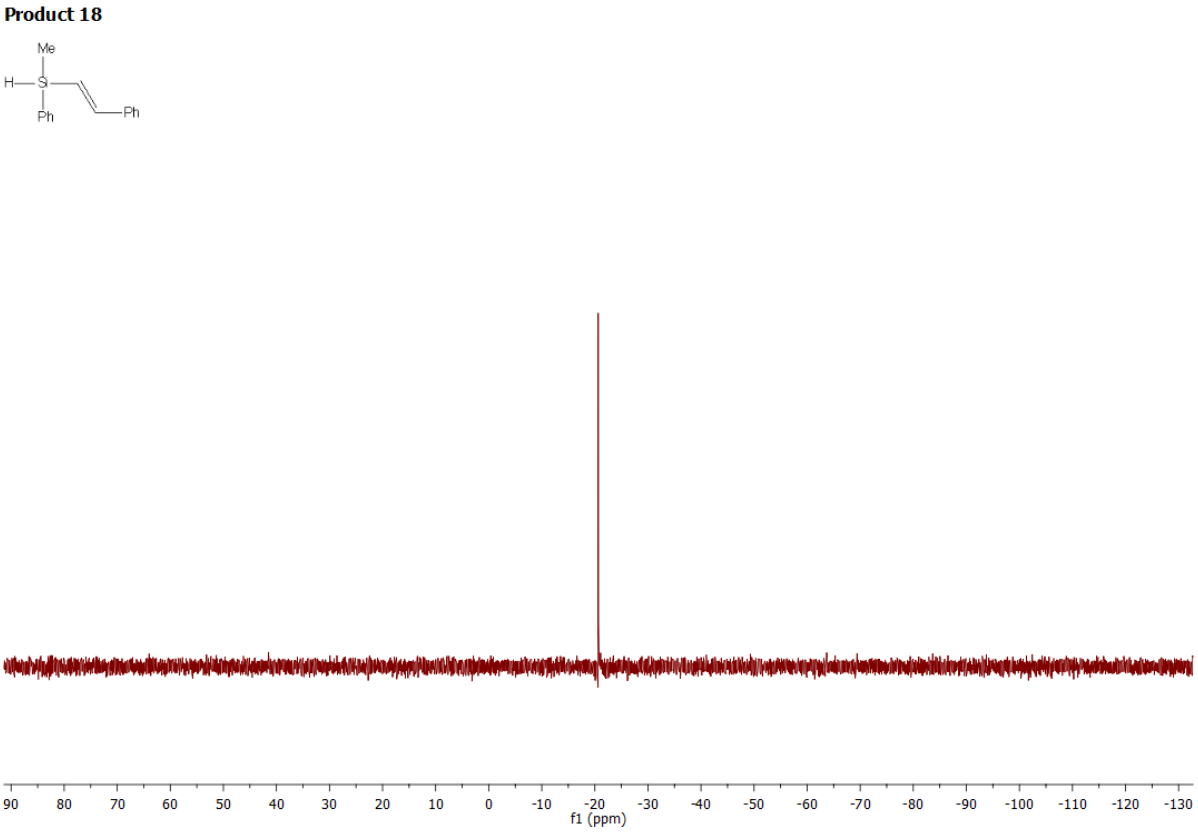



**Figure S48.** $^{29}$Si NMR (79 MHz, $CDCl_3$) of product **18**

*Analytical data of product 18:*

Isolated yield: 91% (203.9 mg); $^{1}$H NMR ($CDCl_3$, δ, ppm): 0.54 (d, 3H, $J_{HH}$ = 3.8 Hz, C*H*$_3$), 4.75 (d, 1H, $J_{HH}$ = 3.6 Hz, Si*H*), 6.58 (dd, 1H, $J_{HH}$ = 19.1, 3.0 Hz, =C*H*Si), 7.07 (d, 1H, $J_{HH}$ = 19.1 Hz, =C*H*), 7.28 – 7.42 (m, 6H, Ph), 7.45 – 7.50 (m, 2H, Ph), 7.60 – 7.64 (m, 2H, Ph); $^{13}$C NMR ($CDCl_3$, δ, ppm): -5.16 (*C*H$_3$), 123.75, 126.62, 127.99, 128.42, 128.58, 129.49, 134.65, 135.60, 137.97, 147.07; $^{29}$Si NMR ($CDCl_3$, δ, ppm): -20.64; MS: *m/z* (rel. intensity): 105 (55), 106 (16), 120 (30), 121 (14), 131 (25), 145 (33), 146 (63), 147 (19), 209 (68), 210 (17), 223 (100), 224 (75, M$^+$); anal. calcd. for $C_{15}H_{16}Si$ (%): C: 80.30, H: 7.19; found: C: 80.45, H: 7.31.

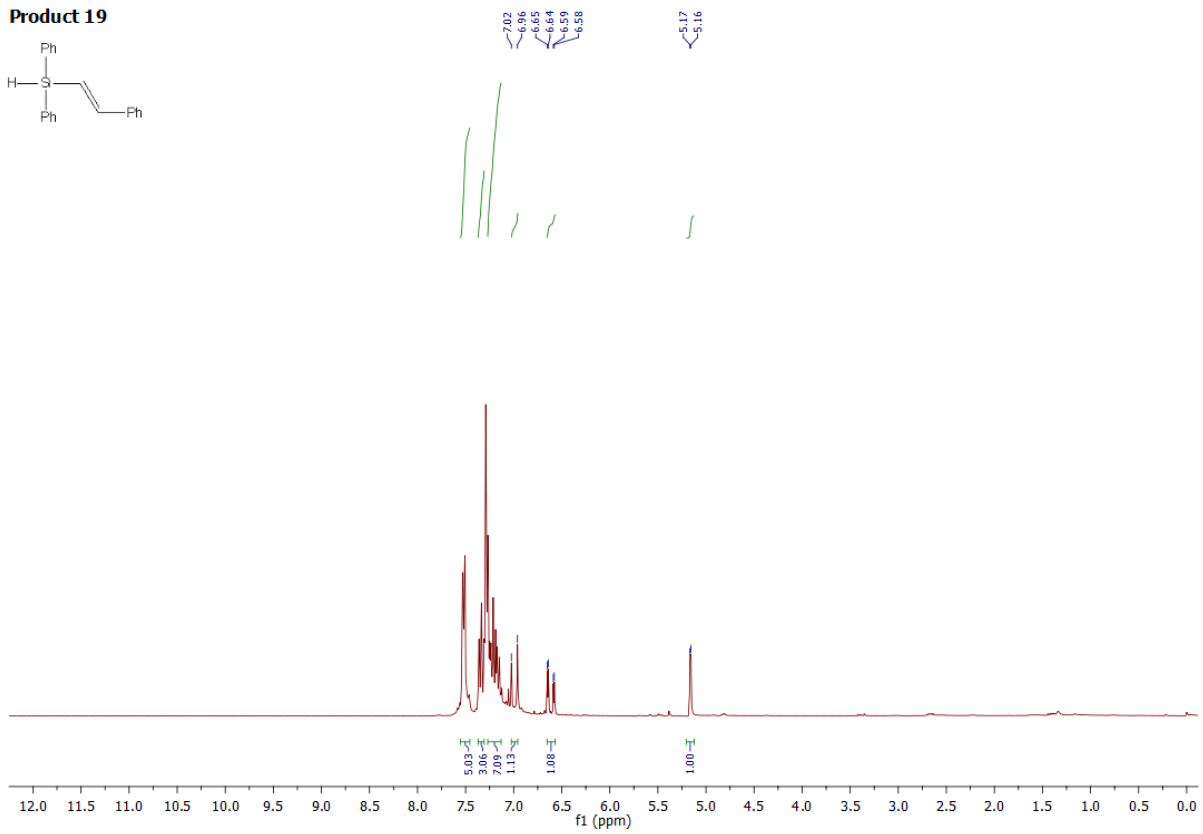



**Figure S49.** $^{1}H$ NMR (300 MHz, $CDCl_3$) of product **19**

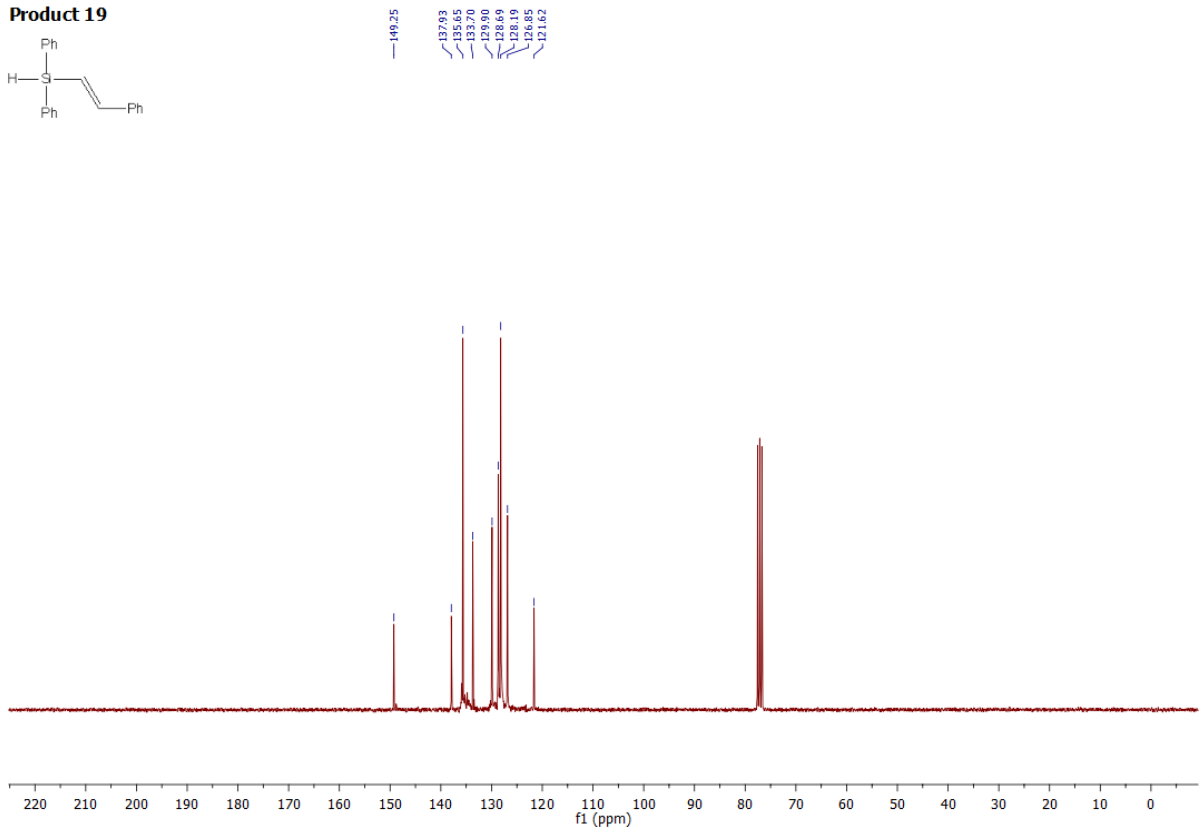



**Figure S50.** $^{13}C$ NMR (75 MHz, $CDCl_3$) of product **19**

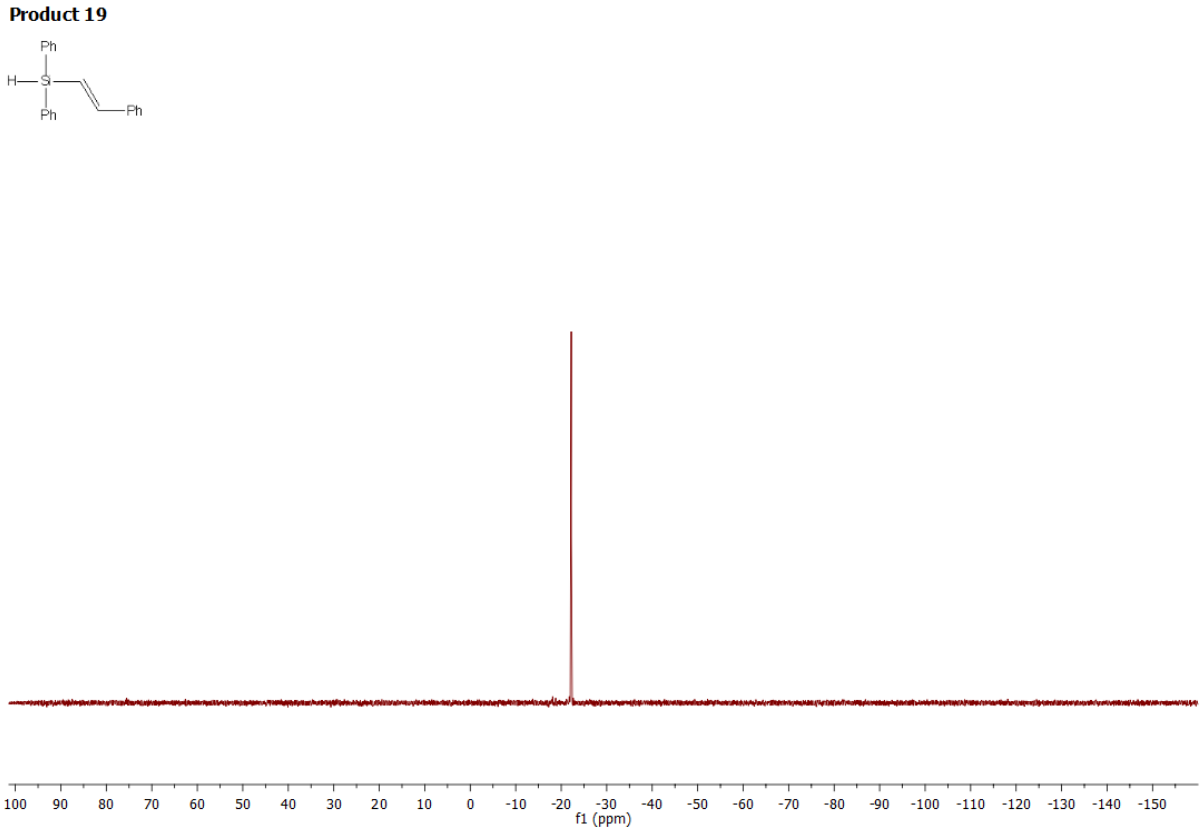



**Figure S51.** $^{29}$Si NMR (79 MHz, $CDCl_3$) of product **19**

*Analytical data of product 19:*

Isolated yield: 90% (257.5 mg); $^{1}$H NMR ($CDCl_3$, δ, ppm): 5.16 (d, 1H, $J_{HH}$ = 3.1 Hz, Si*H*), 6.61 (dd, 1H, $J_{HH}$ = 19.0, 3.2 Hz, =C*H*Si), 6.99 (d, 1H, $J_{HH}$ = 19.0 Hz, =C*H*), 7.12 – 7.27 (m, 7H, Ph), 7.31 – 7.37 (m, 3H, Ph), 7.45 – 7.55 (m, 5H, Ph); $^{13}$C NMR ($CDCl_3$, δ, ppm): 121.62, 126.85, 128.19, 128.69, 129.90, 133.70, 135.65, 137.93, 149.25; $^{29}$Si NMR($CDCl_3$, δ, ppm): -22.10; MS: *m/z* (rel. intensity): 53 (10), 105 (27), 106 (12), 130 (19), 131 (19), 132 (12), 181 (14), 205 (12), 207 (19), 208 (29), 209 (32), 210 (34), 285 (78), 286 (100, $M^+$).

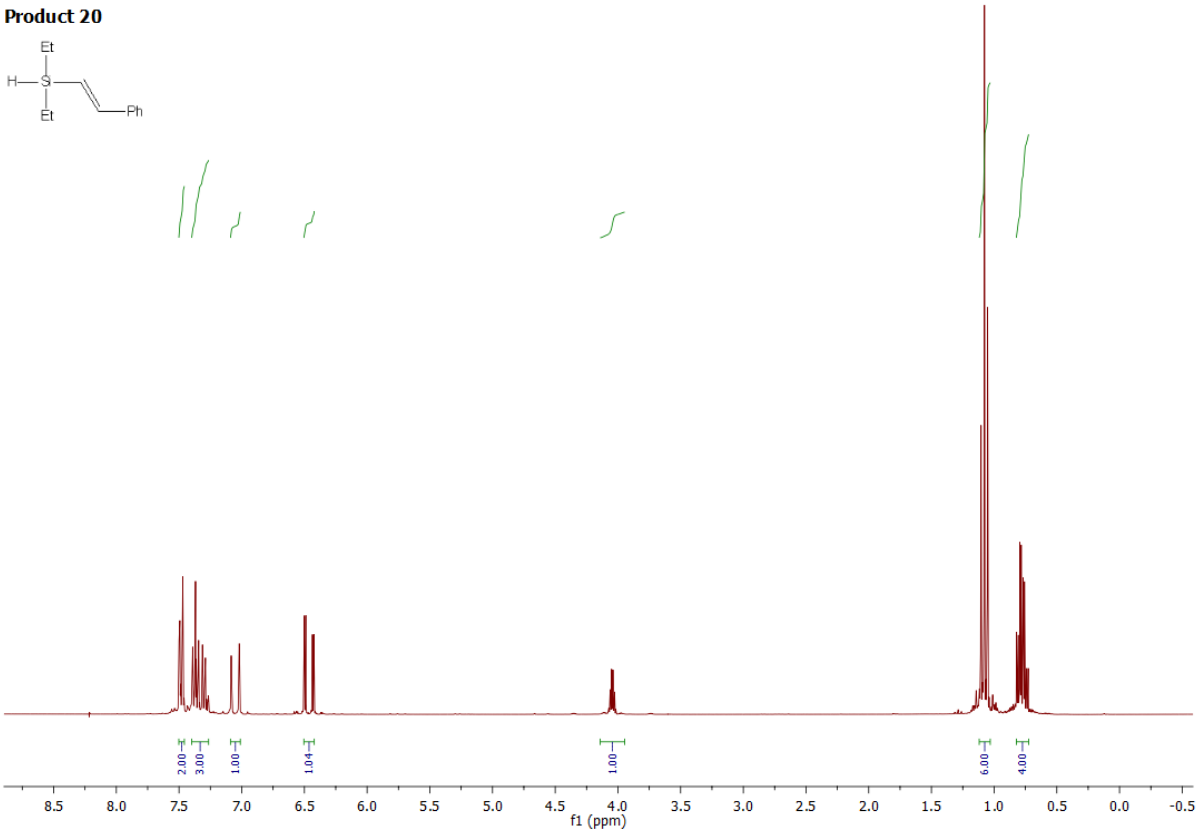



**Figure S52.** $^{1}$H NMR (300 MHz, $CDCl_3$) of product **20**

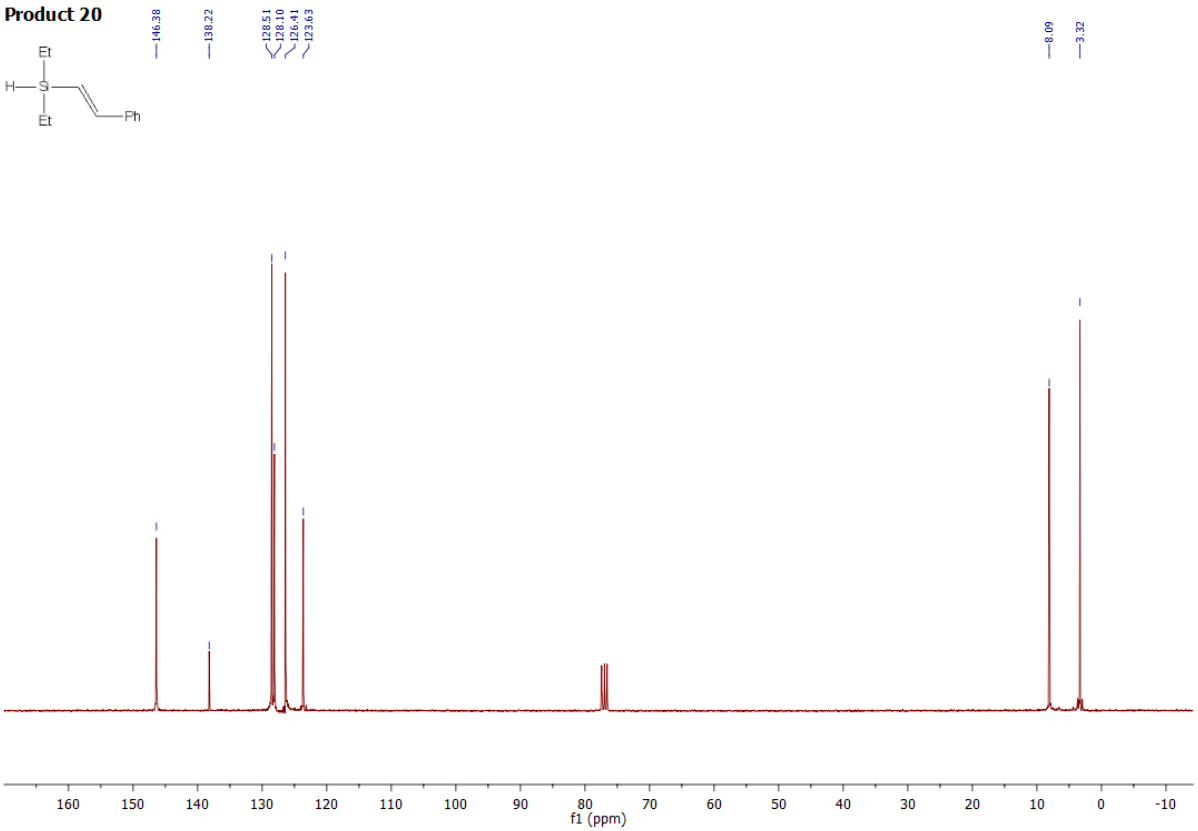



**Figure S53.** $^{13}$C NMR (75 MHz, $CDCl_3$) of product **20**

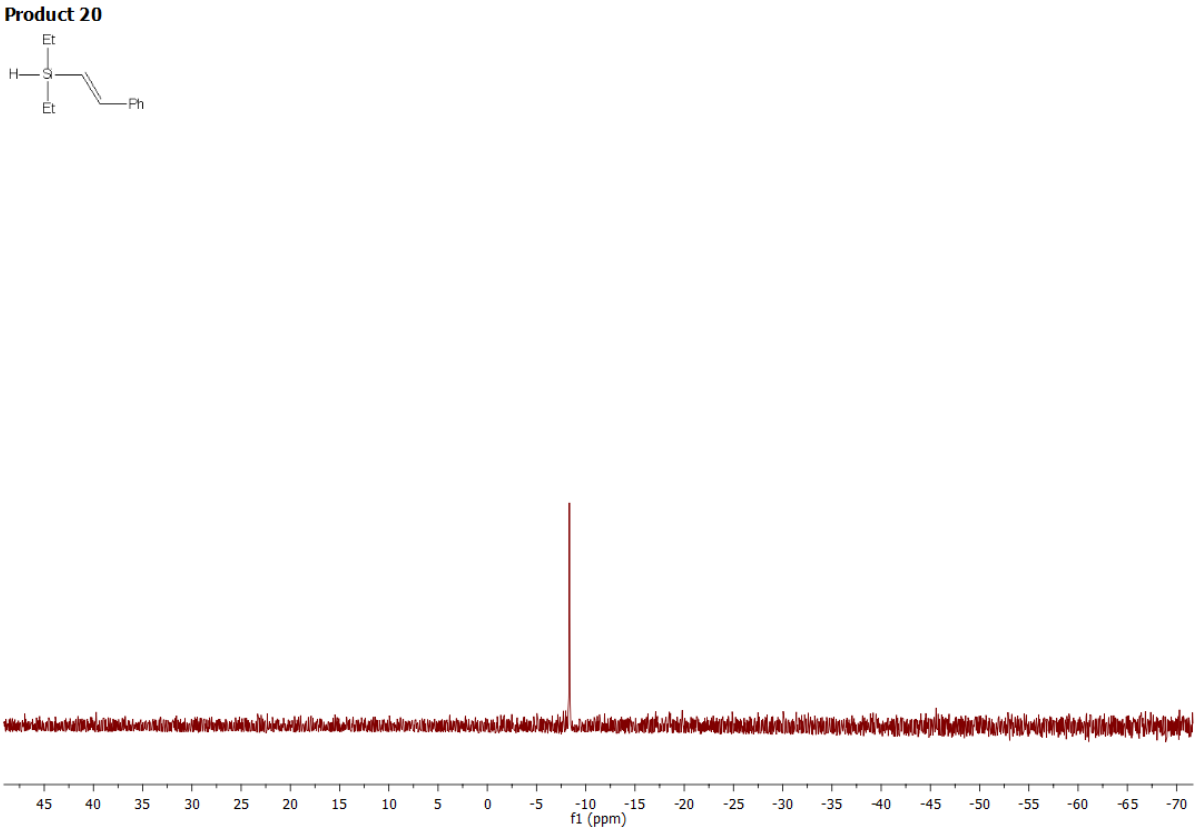



**Figure S54.** $^{29}$Si NMR (79 MHz, $CDCl_3$) of product **20**

*Analytical data of product 20:*

Isolated yield: 90% (171.1 mg); $^{1}$H NMR ($CDCl_3$, δ, ppm): 0.71-0.83 (m, 4H, $CH_3CH_2$-), 1.03-1.12 (m, 6H, $CH_3CH_2$-), 4.01 – 4.07 (m, 1H, Si*H*), 6.46 (dd, 1H, $J_{HH}$ = 19.3, 3.4 Hz, =C*H*Si), 7.05 (d, 1H, $J_{HH}$ = 19.2 Hz, =C*H*), 7.26 – 7.40 (m, 3H, Ph), 7.46 – 7.50 (m, 2H, Ph); $^{13}$C NMR ($CDCl_3$, δ, ppm): 3.32 ($CH_3$), 8.09 ($CH_2$), 123.63, 126.41, 128.51, 138.22, 146.38; $^{29}$Si NMR ($CDCl_3$, δ, ppm): -8.34; MS: *m/z* (rel. intensity): 58 (11), 105 (23), 131 (81), 132 (14), 133 (76), 134 (11), 149 (11), 159 (34), 161 (100), 162 (19), 190 (27, $M^+$); anal. calcd. for $C_{12}H_{18}Si$ (%): C: 75.71, H: 9.53; found: C: 75.80, H: 9.55.

## 1.2. NMR spectra and analytical data of symmetrical *E*,*E*-divinylsilanes

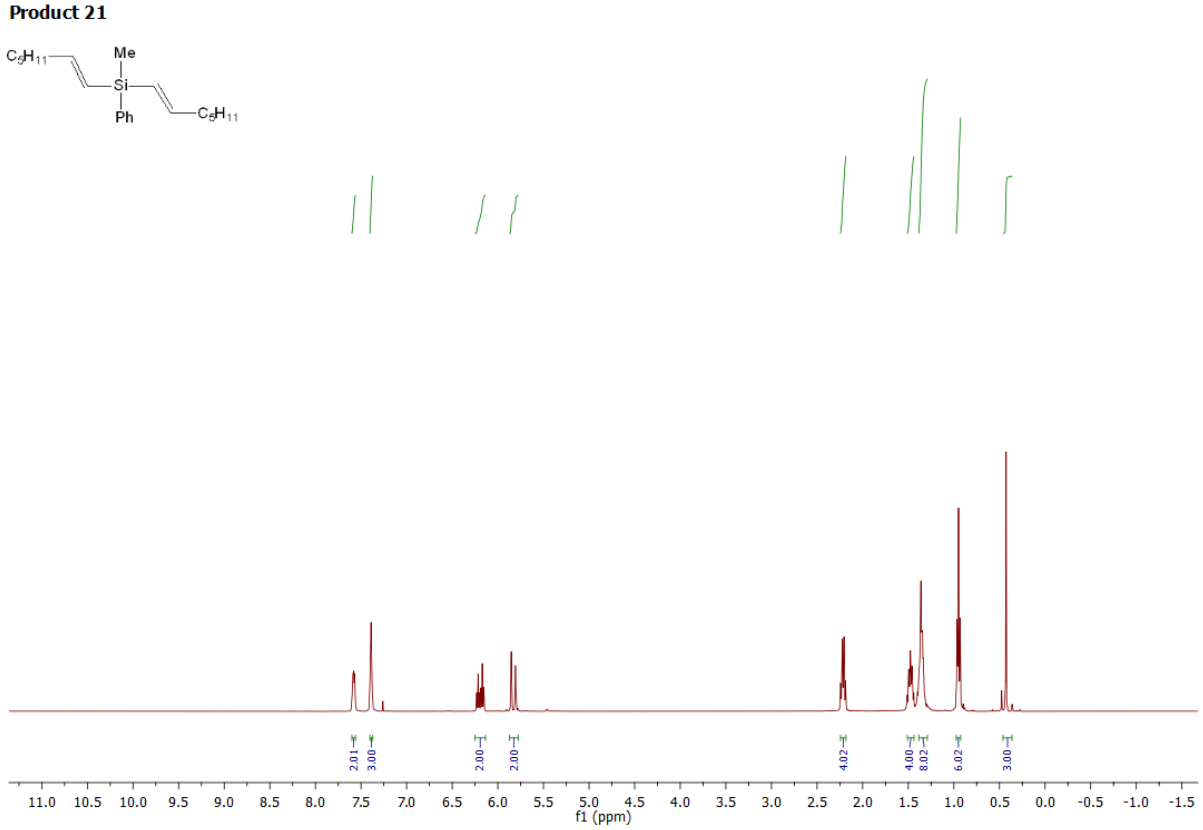



**Figure S55.** $^{1}H$ NMR (400 MHz, $CDCl_3$) of product **21**

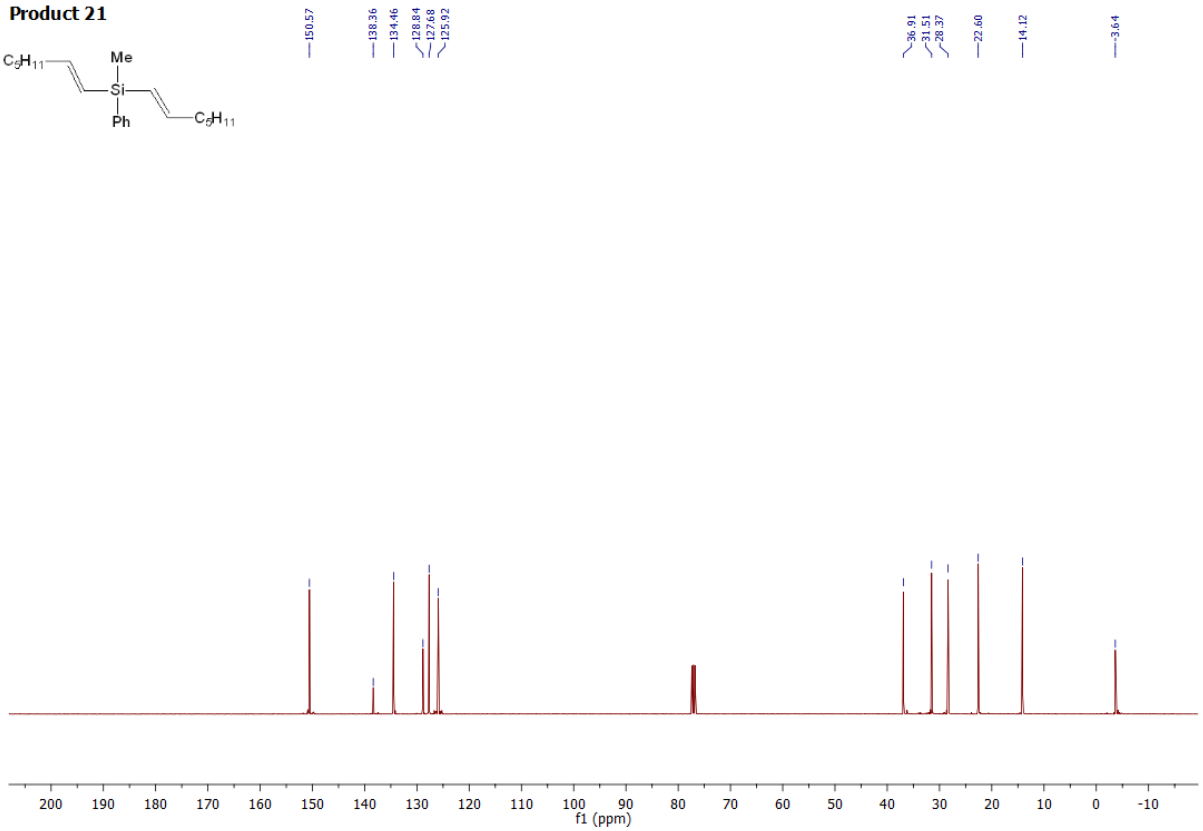



**Figure S56.** $^{13}C$ NMR (100 MHz, $CDCl_3$) of product **21**

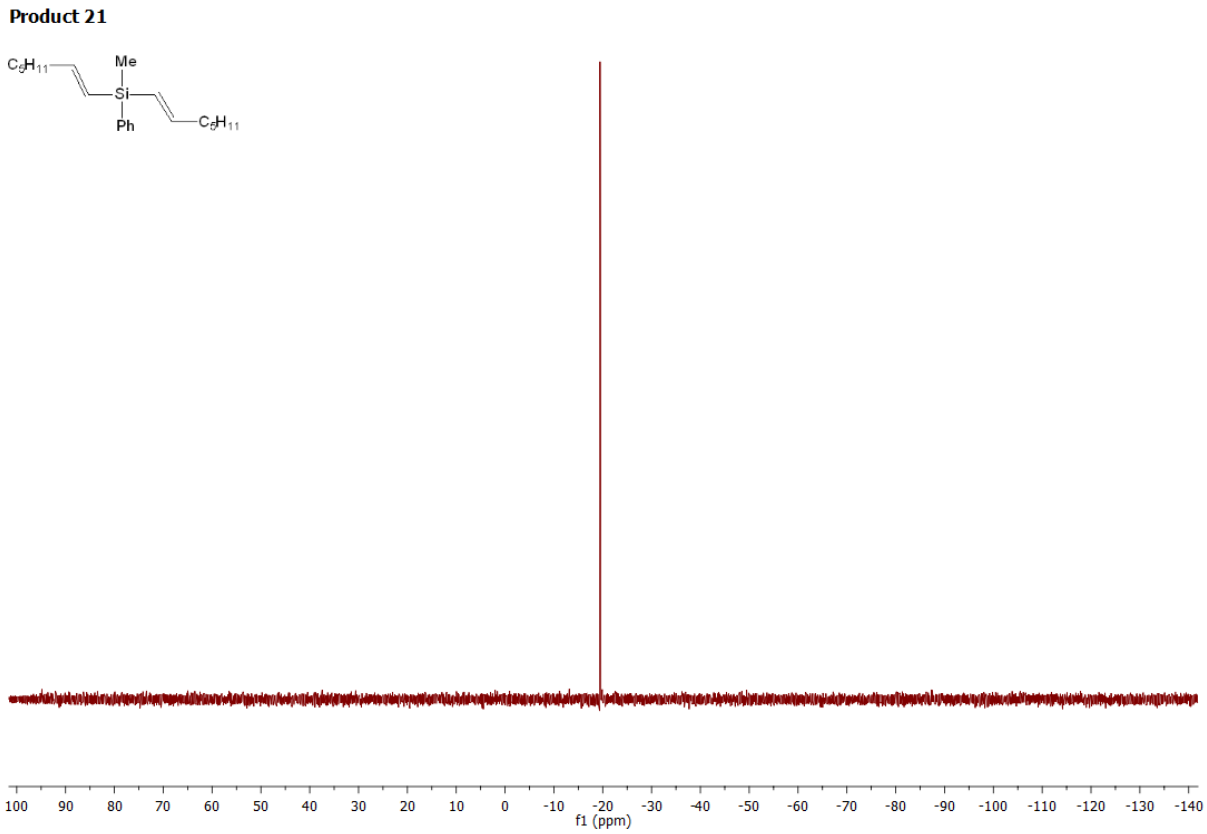



**Figure S57.** $^{29}$Si NMR (79 MHz, $CDCl_3$) of product **21**

*Analytical data of product 21:*

Isolated yield: 92% (318 mg): $^{1}$H NMR ($CDCl_3$, δ, ppm): 0.43 (s, 3H, C*H*$_3$), 0.95 (t, 6H, $J_{HH}$ = 6.8 Hz, -(CH$_2$)$_4$C*H*$_3$), 1.29 – 1.38 (m, 8H, -(C*H*$_2$)$_4$CH$_3$), 1.44 – 1.51 (m, 4H, -(C*H*$_2$)$_4$CH$_3$),2.18 – 2.24 (m, 4H, =CHC*H*$_2$), 5.83 (d, 2H, $J_{HH}$ = 18.5 Hz, =C*H*Si), 6.19 (dt, 2H, $J_{HH}$ = 18.5, 6.2 Hz, =C*H*CH$_2$), 7.37– 7.40 (m, 3H, Ph), 7.55 – 7.60 (m, 2H, Ph); $^{13}$C NMR ($CDCl_3$, δ, ppm): -3.64 (*C*H$_3$), 14.12, 22.60, 28.37, 31.51, 36.91, 125.92, 127.68, 128.84, 134.46, 138.36, 150.57; $^{29}$Si NMR ($CDCl_3$, δ, ppm): -19.46; MS: *m/z* (rel. intensity): 95 (20), 105 (21), 107 (15), 121 (66), 122 (19), 145 (43), 146 (20), 174 (17), 159 (25), 160 (17), 173 (27), 174 (22), 216 (19), 217 (42), 218 (15), 237 (99), 238 (27), 243 (82), 245 (31), 299 (100), 300 (25), 314 (2, M$^+$); anal. calcd. for $C_{21}H_{34}Si$ (%): C: 80.18, H: 10.89; found: C: 80.32, H: 10.99.

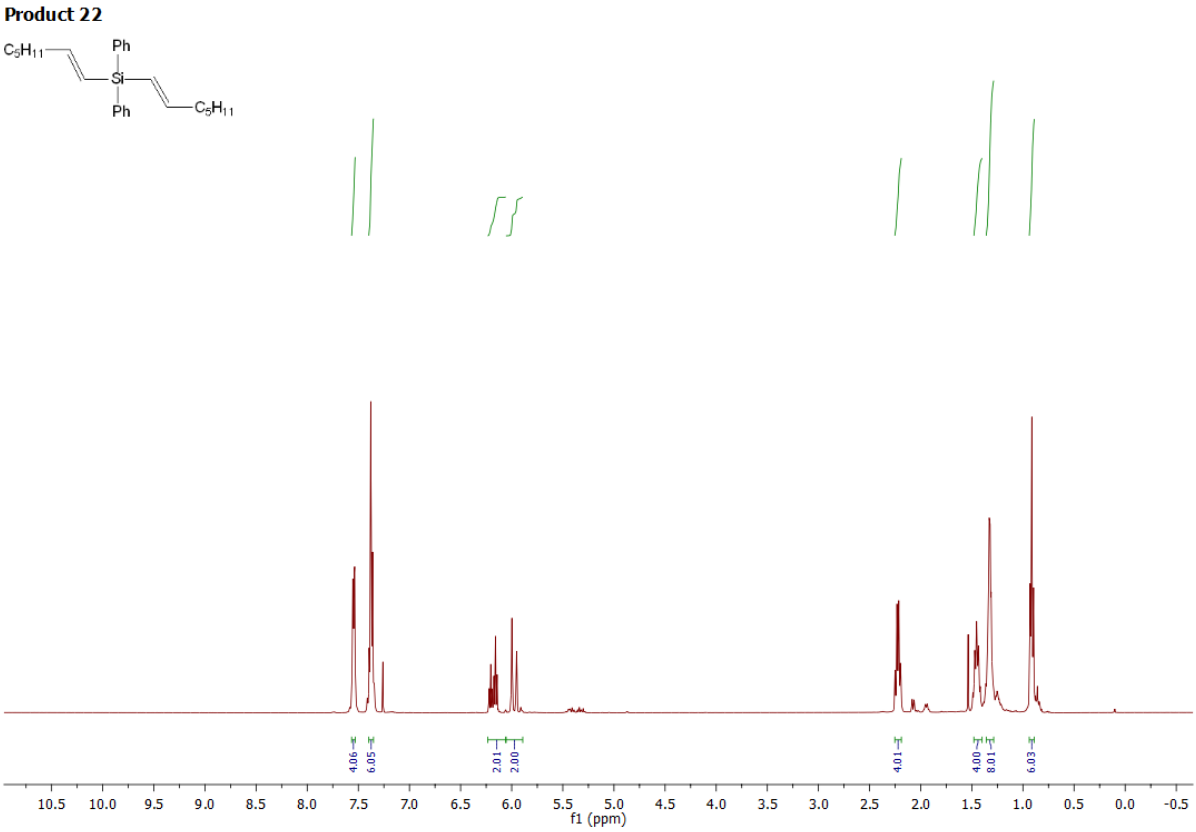



**Figure S58.** $^{1}H$ NMR (400 MHz, $CDCl_3$) of product **22**

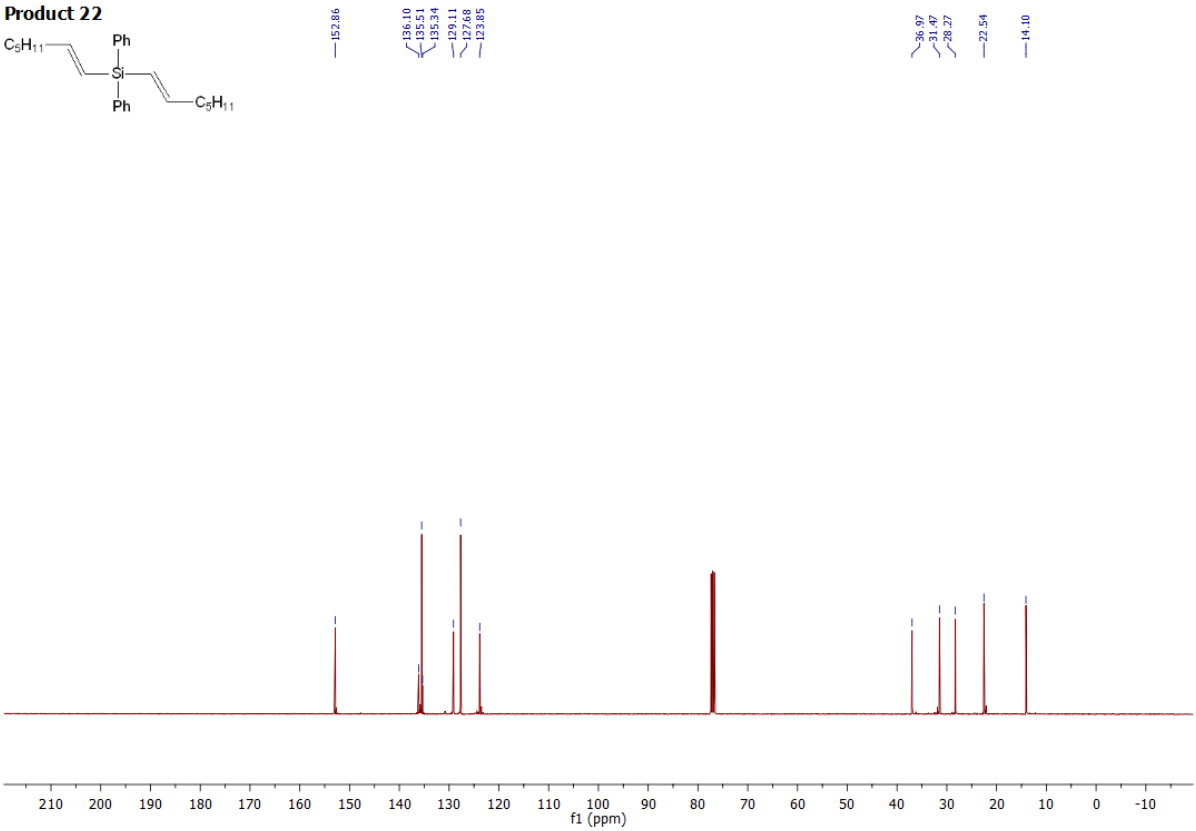
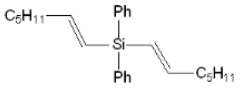



**Figure S59.** $^{13}C$ NMR (100 MHz, $CDCl_3$) of product **22**

**Product 22**



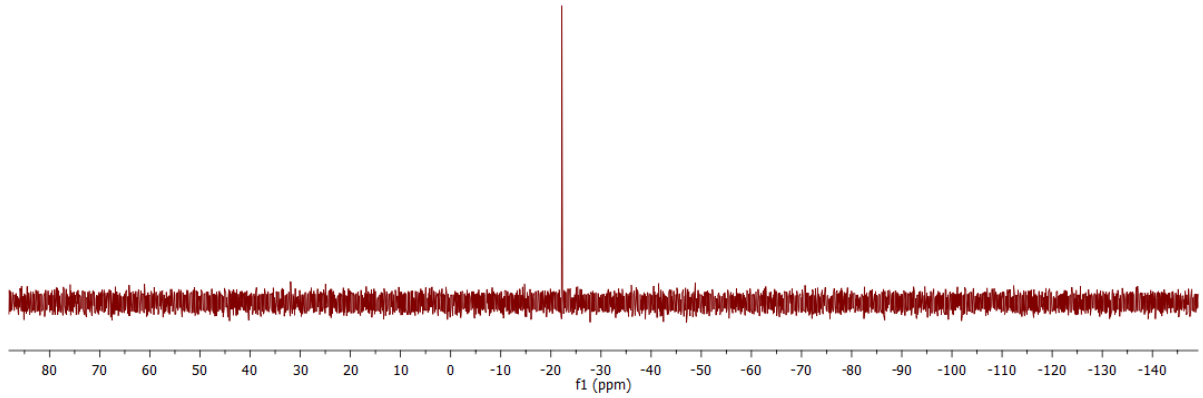




**Figure S60.** $^{29}$Si NMR (79 MHz, $CDCl_3$) of product **22**

*Analytical data of product 22:*

Isolated yield: 90% (372.5 mg); $^{1}$H NMR ($CDCl_3$, δ, ppm): 0.91 (t, 6H, $J_{HH}$ = 6.8 Hz, -$(CH_2)_4CH_3$), 1.29 – 1.36 (m, 8H, -$(CH_2)_4CH_3$), 1.40 – 1.48 (m, 4H, -$(CH_2)_4CH_3$), 2.19 – 2.25 (m, 4H, =$CHCH_2$), 5.98 (d, 2H, $J_{HH}$ = 19.3 Hz, =CHSi), 6.18 (dt, 2H, $J_{HH}$ = 18.5, 6.2 Hz, =$CHCH_2$), 7.35 – 7.40 (m, 6H, Ph), 7.53 – 7.57 (m, 4H, Ph); $^{13}$C NMR ($CDCl_3$, δ, ppm): 14.10, 22.54, 28.27, 31.47, 36.97, 123.85, 127.68, 129.11, 135.34, 135.51, 136.10, 152.68; $^{29}$Si NMR ($CDCl_3$, δ, ppm): -22.19; MS: *m/z* (rel. intensity): 105 (11), 183 (17), 279 (17), 280 (100), 281 (34), 299 (65), 300 (19), 305 (63), 306 (22), 376 (2, $M^+$); anal. calcd. for $C_{26}H_{36}Si$ (%): C: 82.91, H: 9.63; found: C: 82.80, H: 9.55.

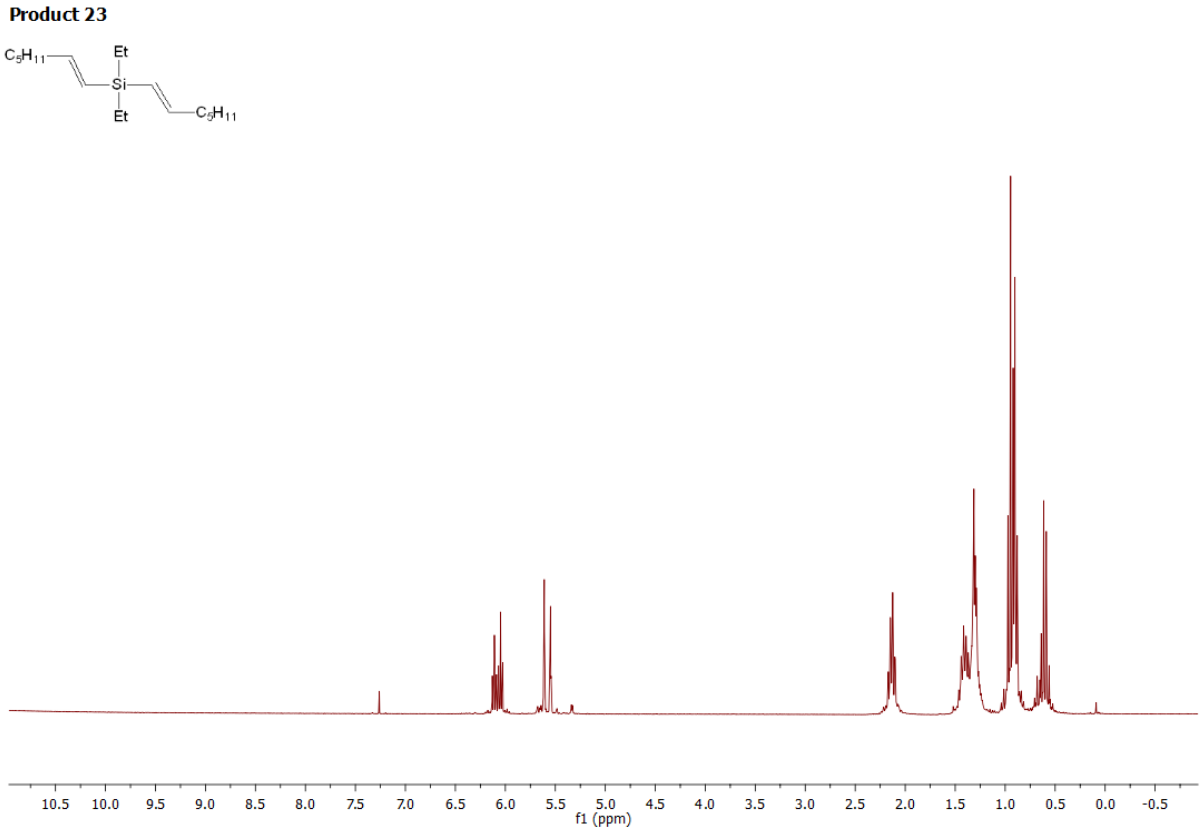



**Figure S61.** $^{1}$H NMR (400 MHz, $CDCl_3$) of product **23**

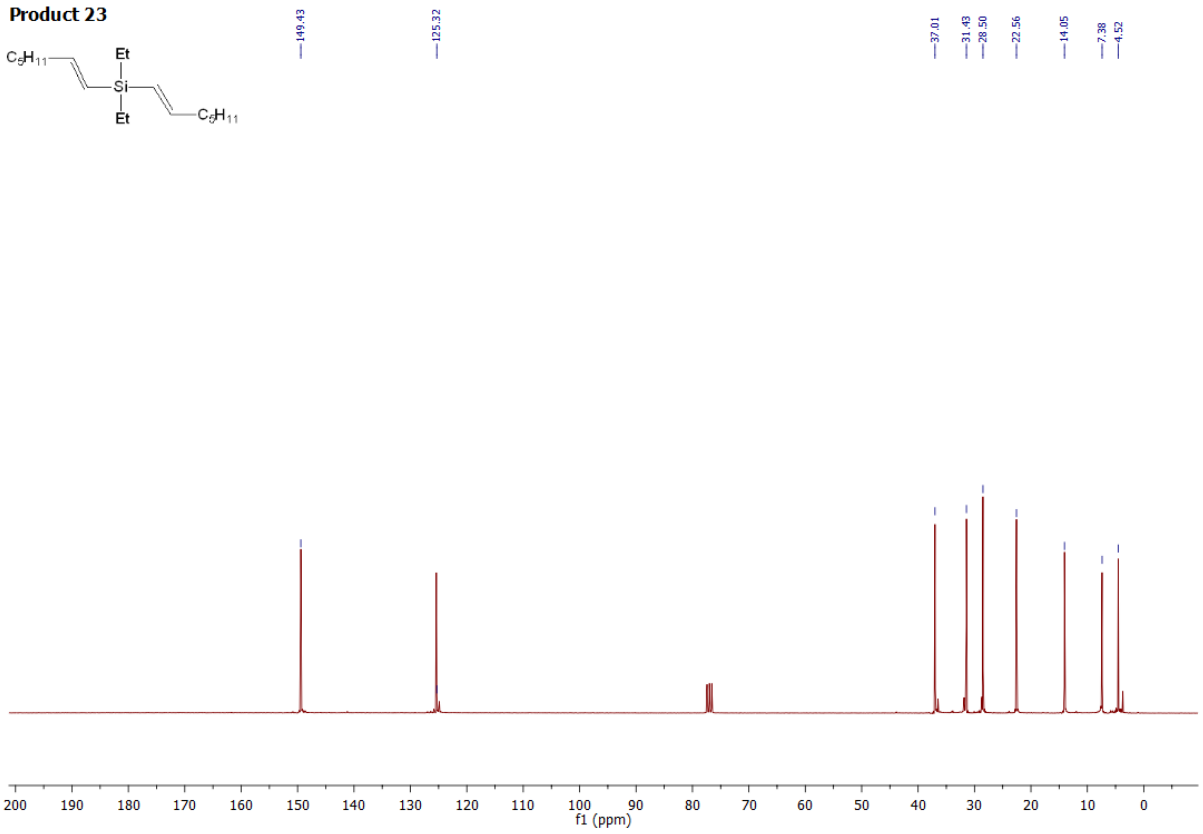



**Figure S62.** $^{13}$C NMR (100 MHz, $CDCl_3$) of product **23**

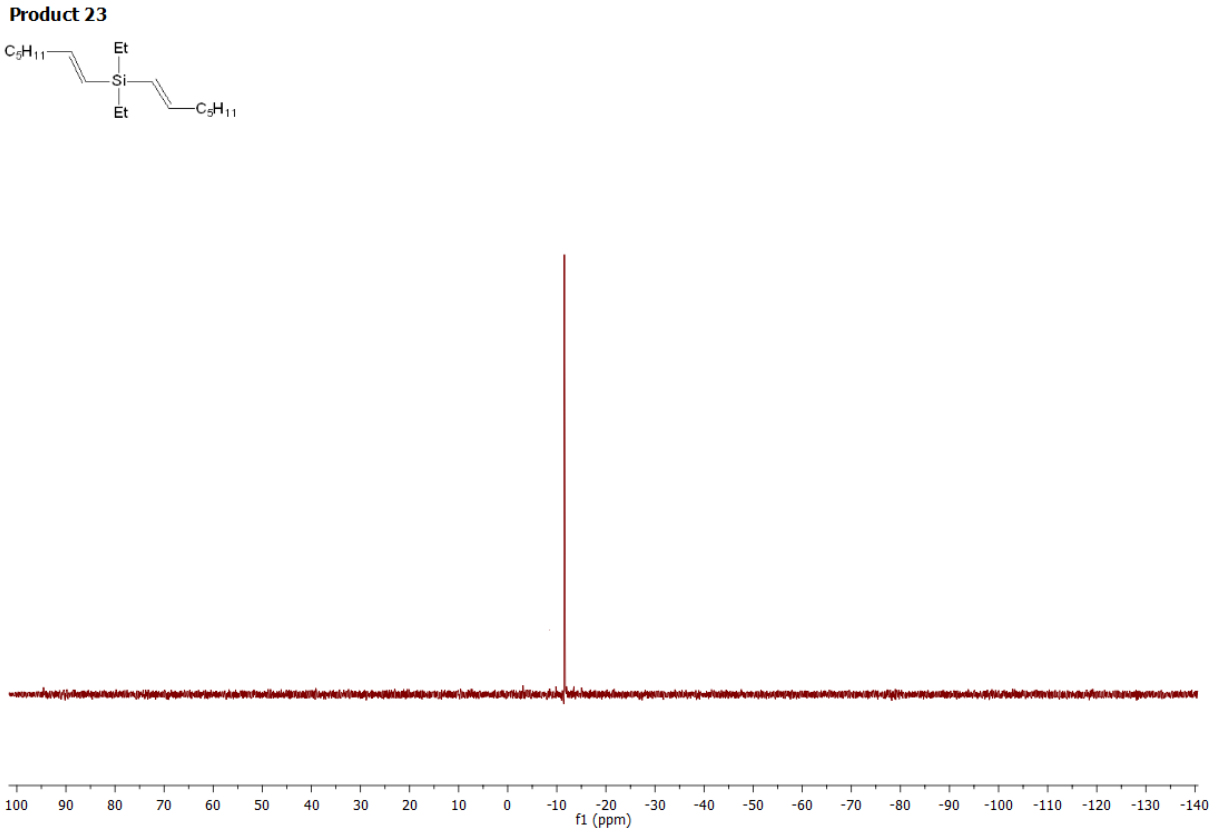



**Figure S63.** $^{29}$Si NMR (79 MHz, $CDCl_3$) of product **23**

*Analytical data of product 23:*

Isolated yield: 92% (283.6 mg); $^{1}$H NMR ($CDCl_3$, δ, ppm): 0.53 – 0.68 (m, 4H, $CH_3CH_2$-), 0.86 – 1.00 (m, 12H, -$(CH_2)_4CH_3$), 1.25 – 1.45 (m, 12H, -$(CH_2)_4CH_3$), 2.07 – 2.20 (m, 4H, =$CHCH_2$), 5.58 (d, 2H, $J_{HH}$ = 18.6 Hz, =C*H*Si), 6.08 (dt, 2H, $J_{HH}$ = 18.6, 6.3 Hz, =C*H*$CH_2$); $^{13}$C NMR ($CDCl_3$, δ, ppm): 4.52 (*C*$H_3$), 7.38 (*C*$H_2$), 14.05, 22.56, 28.50, 31.43, 37.01, 125.32, 149.43; $^{29}$Si NMR ($CDCl_3$, δ, ppm): -11.55; MS: *m/z* (rel. intensity): 59 (28), 83 915), 85 (18), 87 (18), 95 (27), 97 (36), 99 (32), 111 (30), 113 (25), 125 (38), 127 (17), 153 (25), 183 (17), 223 (40), 251 (100), 252 (21), 280 (2, $M^+$); anal. calcd. for $C_{18}H_{36}Si$ (%): C: 77.06, H: 12.96; found: C: 77.12, H: 12.99.

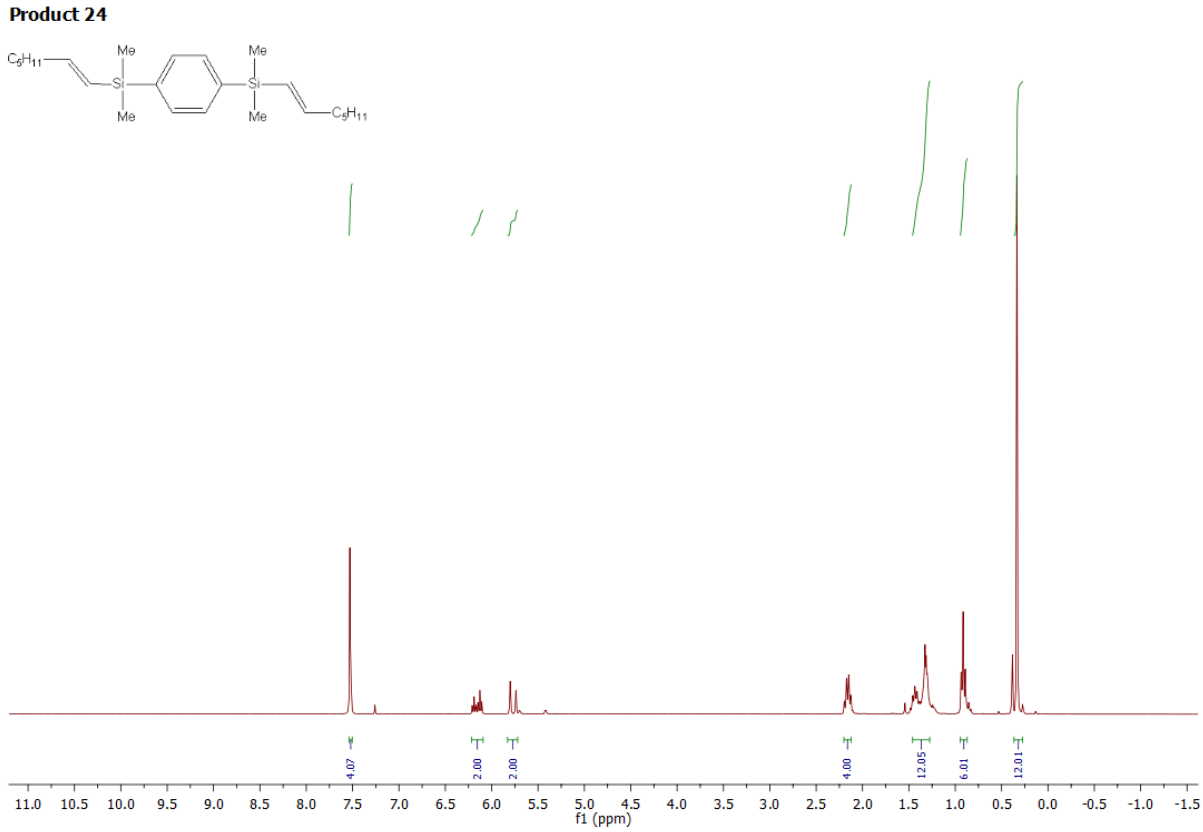



**Figure S64.** $^{1}H$ NMR (400 MHz, $CDCl_3$) of product **24**

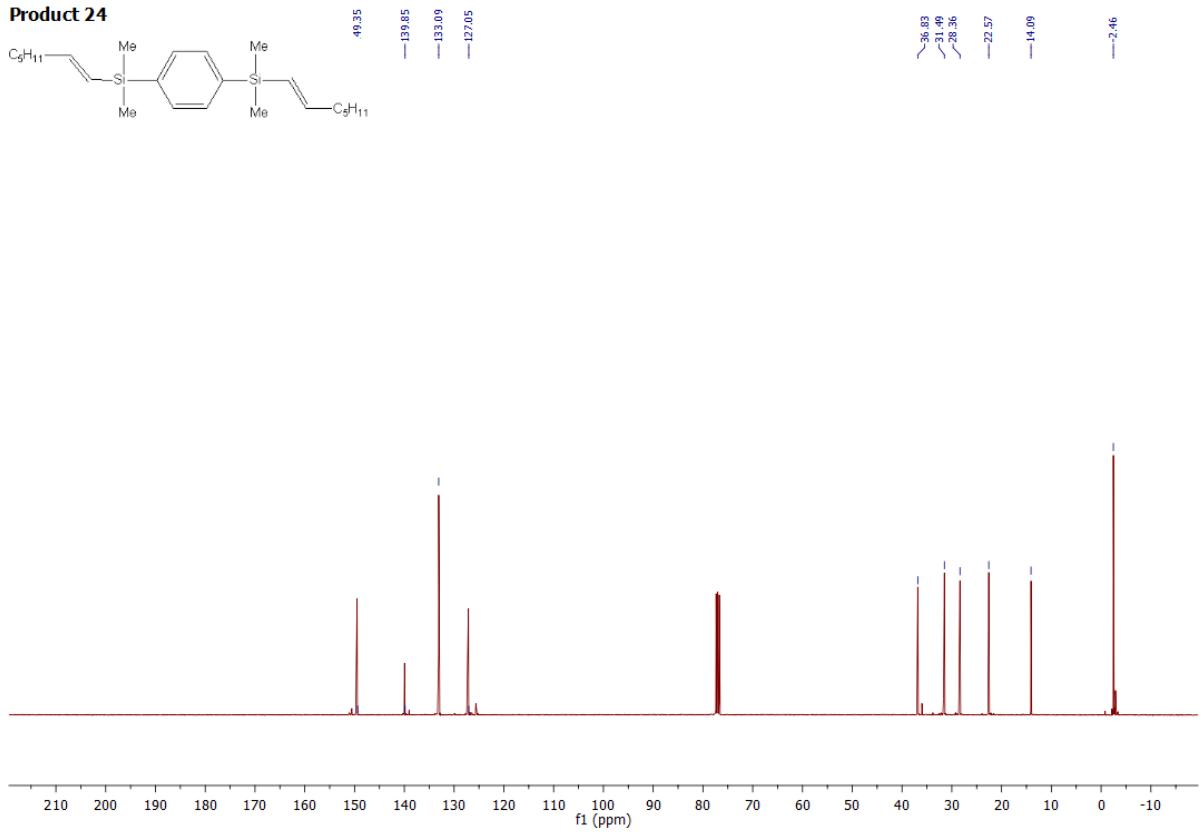



**Figure S65.** $^{13}C$ NMR (100 MHz, $CDCl_3$) of product **24**

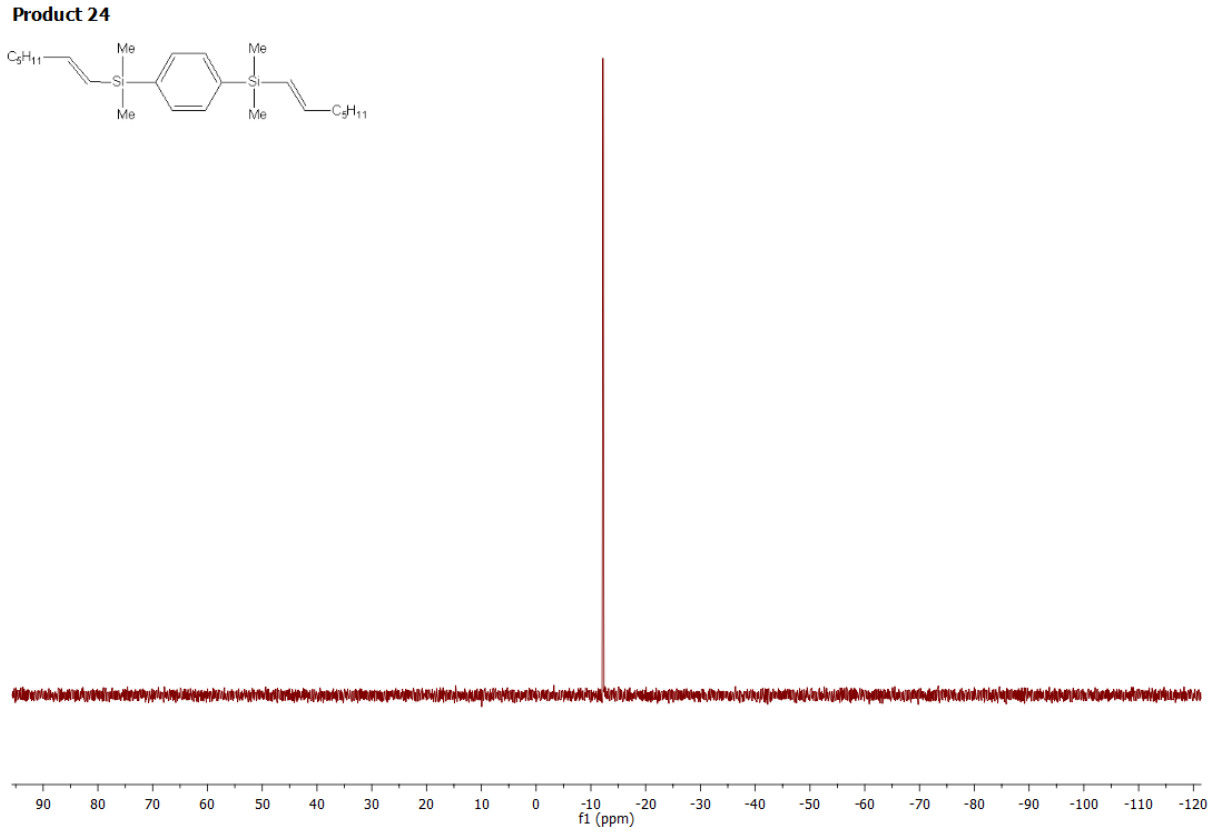



**Figure S66.** $^{29}$Si NMR (79 MHz, $CDCl_3$) of product **24**

*Analytical data of product 24:*

Isolated yield: 94% (399.4 mg); $^{1}$H NMR ($CDCl_3$, δ, ppm): 0.33 (s, 12H, C*H*$_3$), 0.91 (t, 6H, $J_{HH}$ = 6.7 Hz, -(CH$_2$)$_4$C*H*$_3$), 1.28 – 1.46 (m, 12H, -(C*H*$_2$)$_4$C*H*$_3$), 2.12 – 2.20 (m, 4H, =CHC*H*$_2$), 5.77 (d, 2H, $J_{HH}$ = 18.6 Hz, =C*H*Si), 6.16 (dt, 2H, $J_{HH}$ = 18.6, 6.2 Hz, =C*H*CH$_2$), 7.50 – 7.54 (m, 4H, Ph); $^{13}$C NMR ($CDCl_3$, δ, ppm): -2.46 (*C*H$_3$), 14.09, 22.57, 28.36, 31.49, 36.83, 127.05, 133.09, 139.85, 149.35; $^{29}$Si NMR ($CDCl_3$, δ, ppm): -12.20; MS: *m/z* (rel. intensity): 59 (41), 73 (28), 95 (17), 99 (16), 131 (19), 155 (25), 159 (16), 179 (21), 193 (17), 215 (17), 217 (16), 231 (63), 232 (23), 275 (15), 290 (60), 291 (20), 314 (17), 327 (20), 329 (27), 371 (100), 372 (38), 373 (15), 386 (2, $M^+$); anal. calcd. for $C_{24}H_{42}Si_2$ (%): C: 74.53, H: 10.95; found: C: 74.60, H: 10.99.

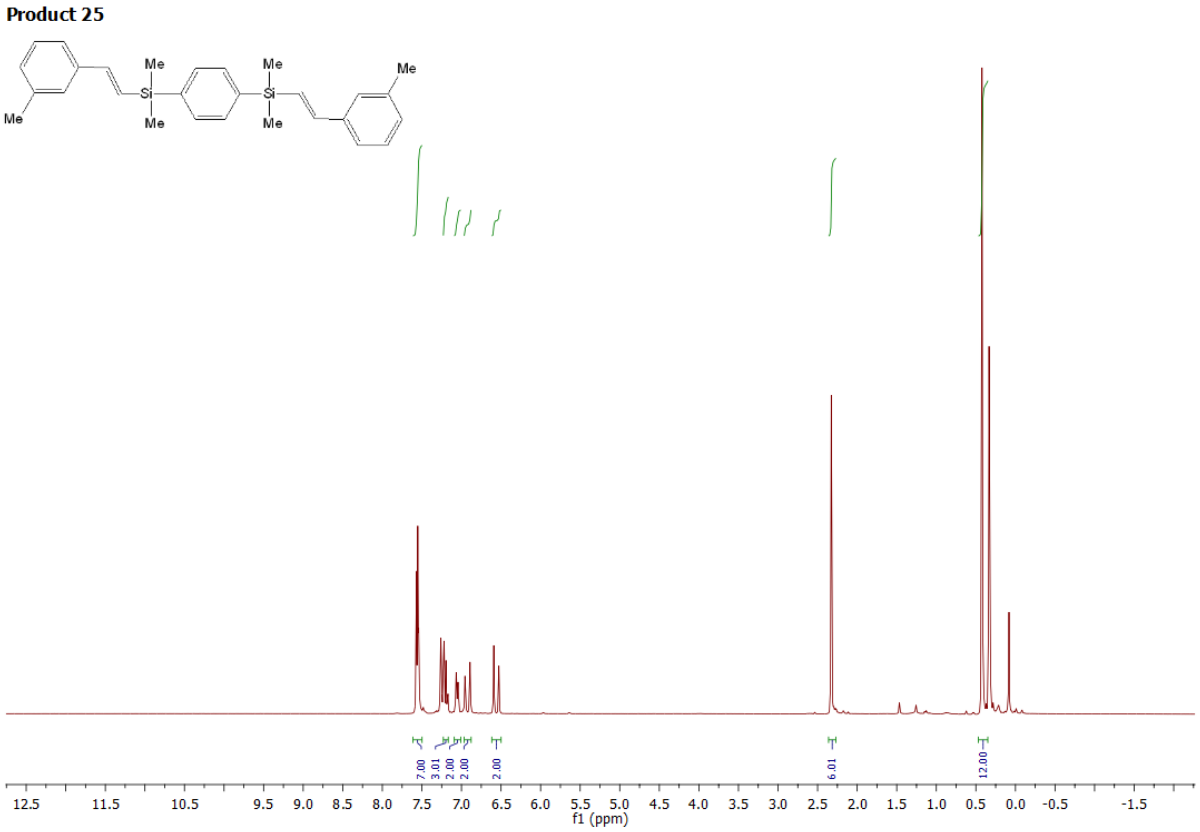



**Figure S67.** $^{1}H$ NMR (300 MHz, $CDCl_3$) of product **25**

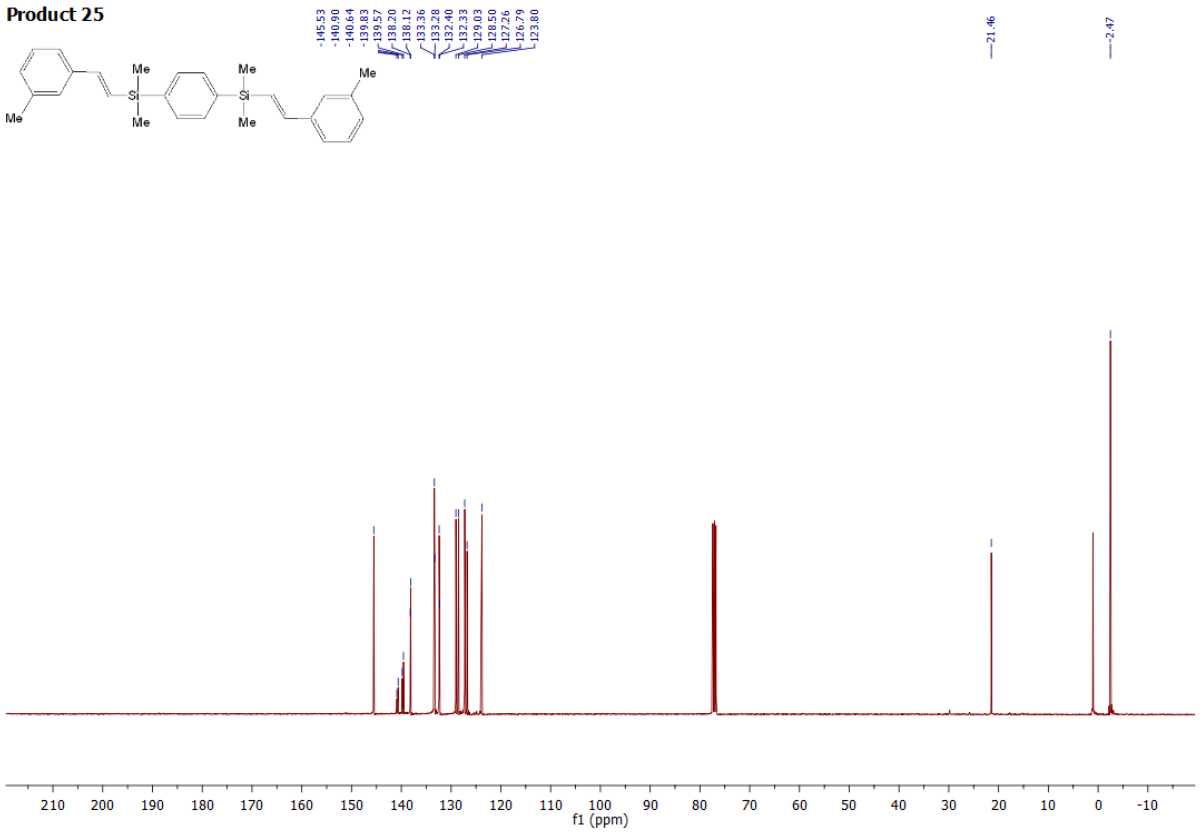



**Figure S68.** $^{13}C$ NMR (100 MHz, $CDCl_3$) of product **25**

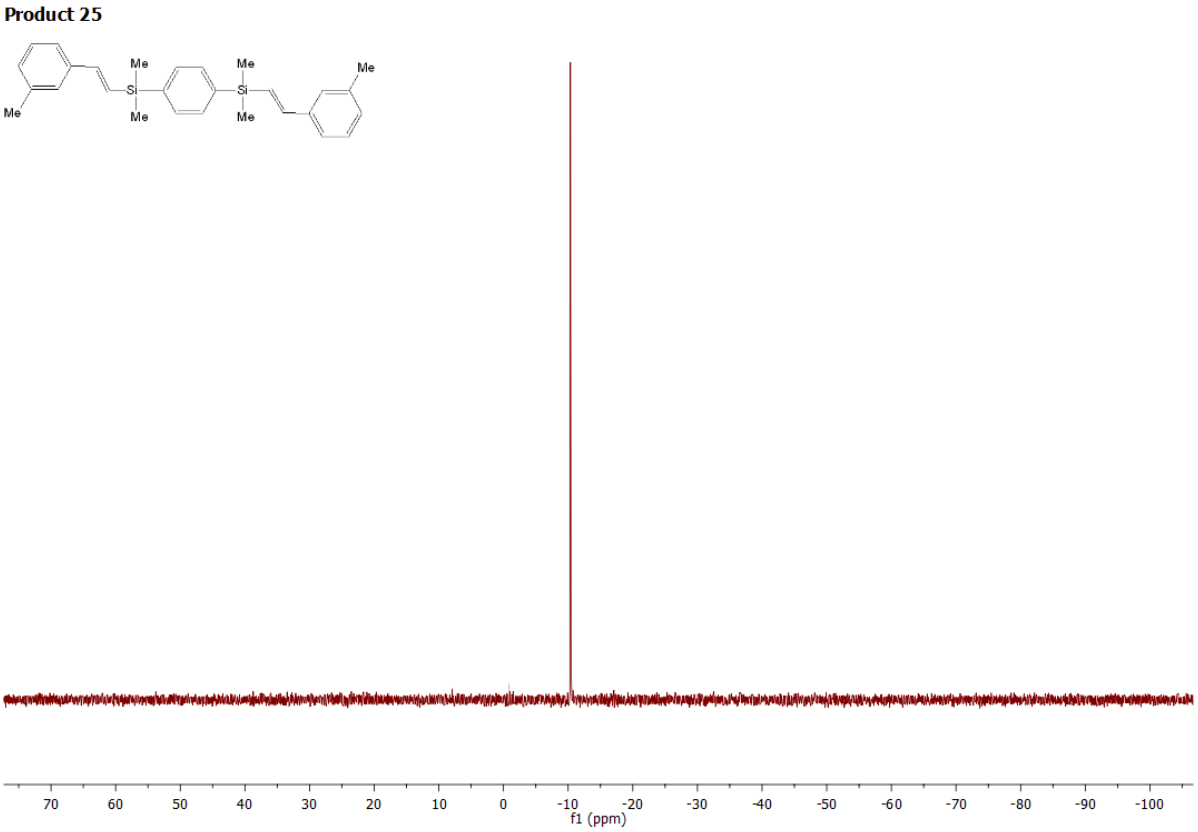



**Figure S69.** $^{29}$Si NMR (79 MHz, $CDCl_3$) of product **25**

*Analytical data of product 25:*

Isolated yield: 90% (422 mg); $^{1}$H NMR ($CDCl_3$, δ, ppm): 0.42 (s, 12H, C*H*$_3$), 2.33 (s, 6H, C*H*$_3$), 6.56 (d, 2H, $J_{HH}$ = 19.1 Hz, =C*H*Si), 7.01 (d, 2H, $J_{HH}$ = 19.1 Hz, =C*H*), 7.05 (2H, $J_{HH}$ = 6.9 Hz, -C$_6$*H*$_4$-), 7.17 – 7.23 (m, 3H, -C$_6$*H*$_4$-), 7.50 – 7.61 (m, 7H, -C$_6$*H*$_4$-); $^{13}$C NMR ($CDCl_3$, δ, ppm): -2.42 (Si*C*H$_3$), 21.46 (*C*H$_3$), 123.80, 126.79, 128.50, 129.03, 132.37 (d, *J* = 6.7 Hz), 133.32 (d, *J* = 7.9 Hz), 138.16 (d, *J* = 8.8 Hz), 139.57, 139.83, 140.64, 140.90, 145.53; $^{29}$Si NMR ($CDCl_3$, δ, ppm): -10.42; MS: *m/z* (rel. intensity): 59 (19), 115 (10), 149 (11), 157 (16), 158 (25), 159 (65), 160 (24), 161 (12), 173 (20), 175 (36), 176 (16), 217 (11), 230 (13), 231 (21), 232 (100), 234 (51), 235 (20), 236 (12), 237 (12), 251 (34), 252 (22), 310 (15), 319 (12), 334 (30), 335 (13), 353 (15), 411 (83), 412 (34), 413 (14), 426 (6, $M^+$); anal. calcd. for $C_{28}H_{34}Si_2$ (%): C: 78.81, H: 8.03; found: C: 78.95, H: 8.14.

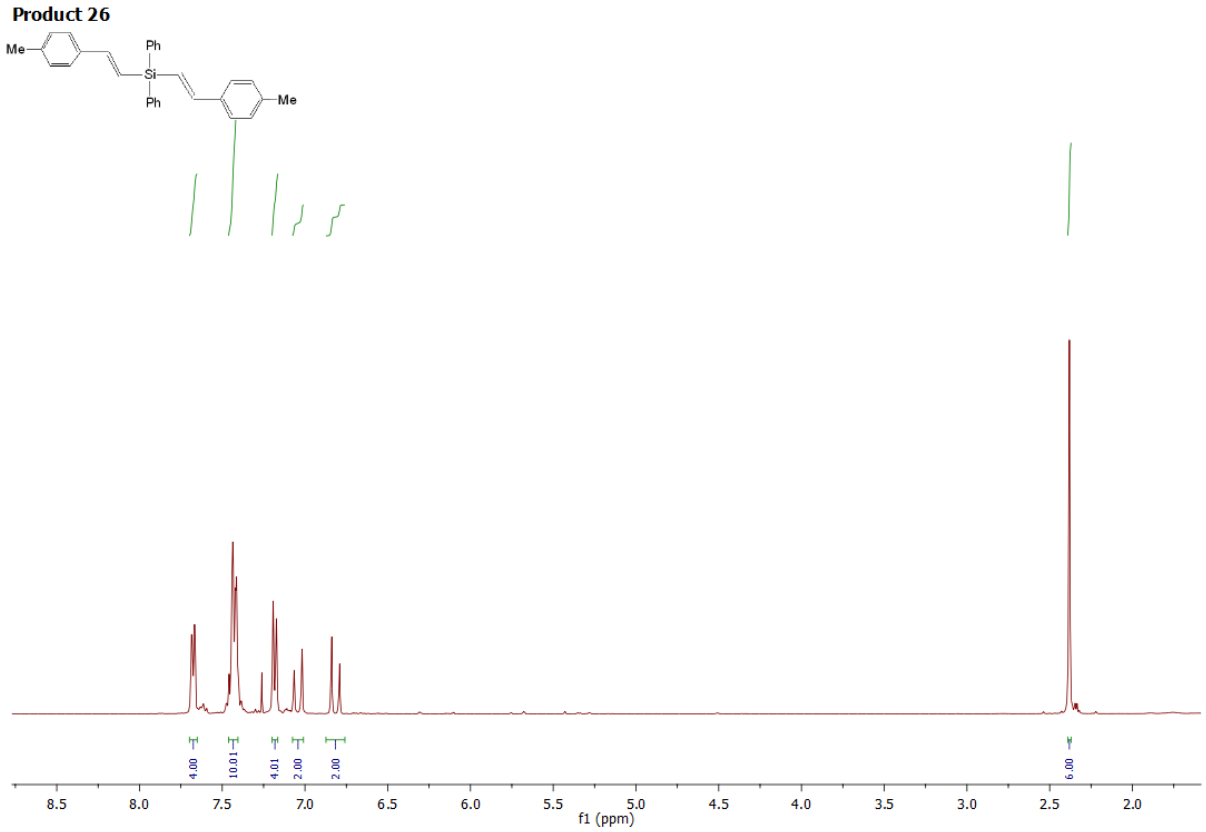



**Figure S70.** $^{1}H$ NMR (300 MHz, $CDCl_3$) of product **26**

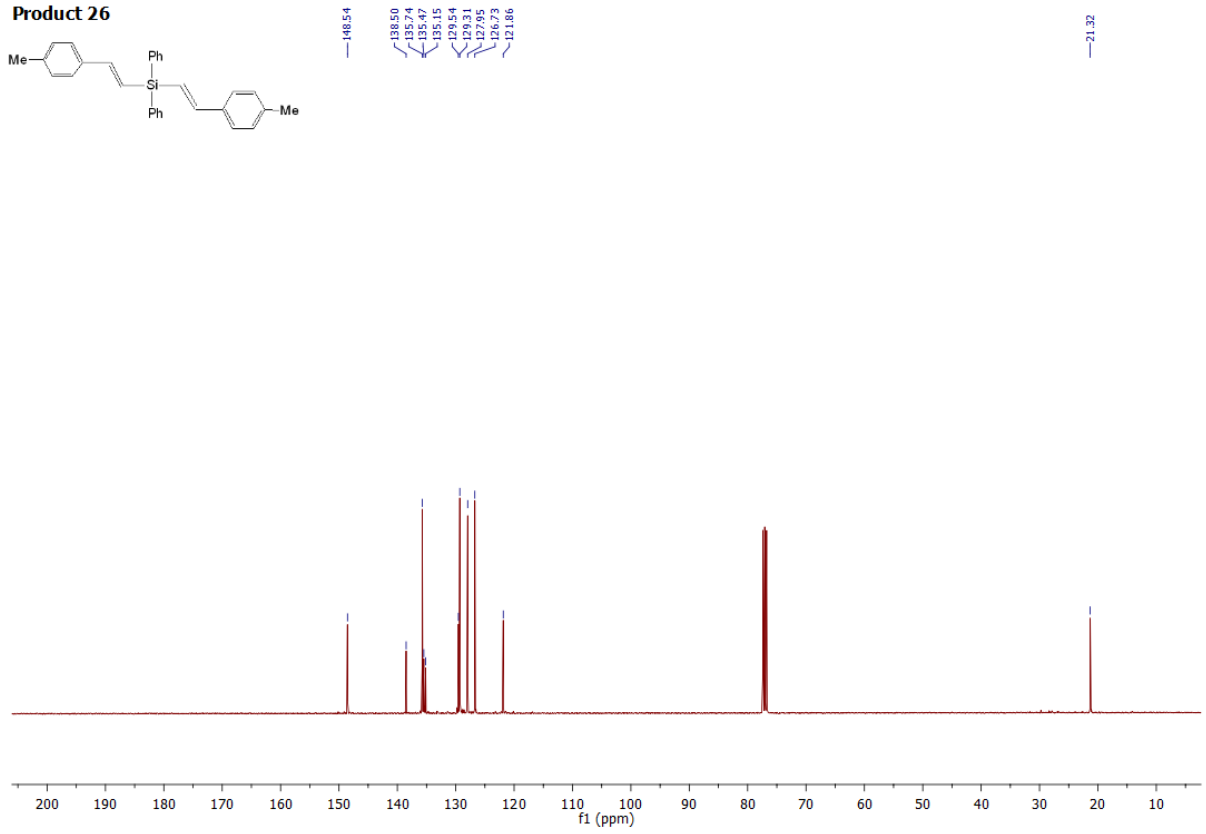



**Figure S71.** $^{13}C$ NMR (100 MHz, $CDCl_3$) of product **26**

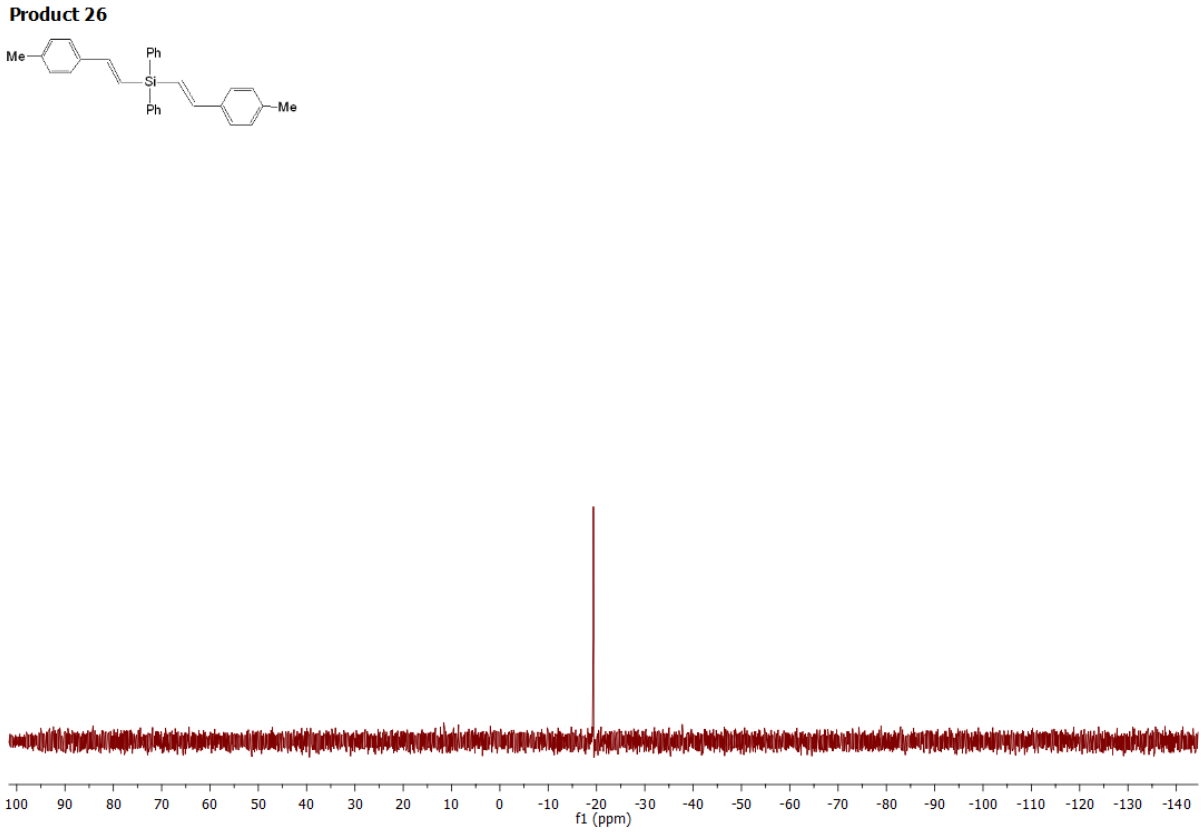



**Figure S72.** $^{29}$Si NMR (79 MHz, $CDCl_3$) of product **26**

*Analytical data of product 26:*

Isolated yield: 90% (412 mg); $^{1}$H NMR ($CDCl_3$, δ, ppm): 2.38 (s, 6H, C$H_3$), 6.81 (d, 2H, $J_{HH}$ = 19.1 Hz, =C*H*Si), 7.04 (d, 2H, $J_{HH}$ = 19.1 Hz, =C*H*), 7.18 (d, 4H, $J_{HH}$ = 7.9 Hz, -C$_6H_4$-), 7.39 – 7.48 (m, 10H, Ph), 7.63 – 7.71 (m, 4H, Ph); $^{13}$C NMR ($CDCl_3$, δ, ppm): 21.32 (*C*$H_3$), 121.86, 126.73, 127.95, 129.31, 129.54, 135.15, 135.47, 135.74, 138.50, 148.54; $^{29}$Si NMR ($CDCl_3$, δ, ppm): -19.37; MS: *m/z* (rel. intensity): 105 (18), 144 (17), 181 (16), 219 (16), 220 (20), 221 (39), 222 (24), 234 (20), 235 (23), 299 (22), 312 (100), 313 (46), 314 (15), 324 (42), 325 (69), 326 (18), 338 (47), 339 (85), 340 928), 416 (18, $M^+$); anal. calcd. for $C_{30}H_{28}Si$ (%): C: 86.48, H: 6.77; found: C: 86.37, H: 6.66.

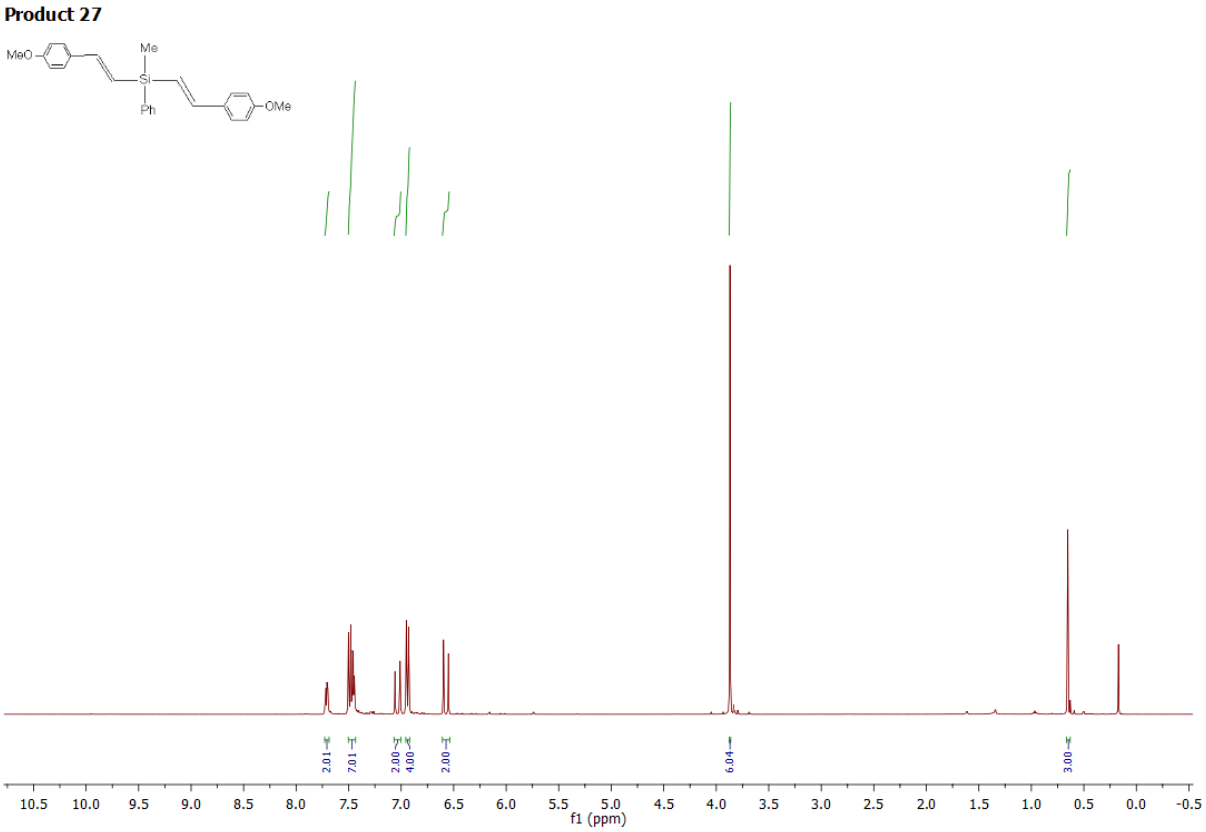



**Figure S73.** $^{1}H$ NMR (400 MHz, $CDCl_3$) of product **27**

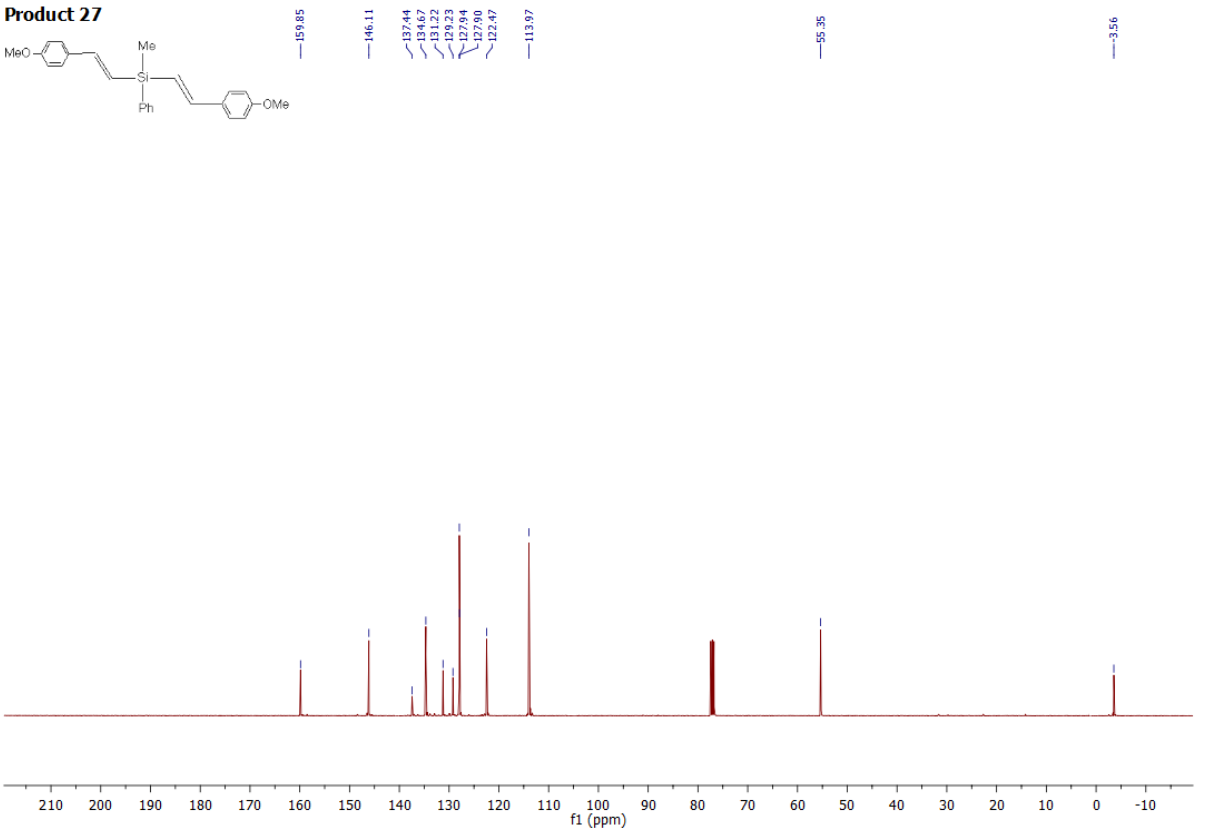



**Figure S74.** $^{13}C$ NMR (100 MHz, $CDCl_3$) of product **27**

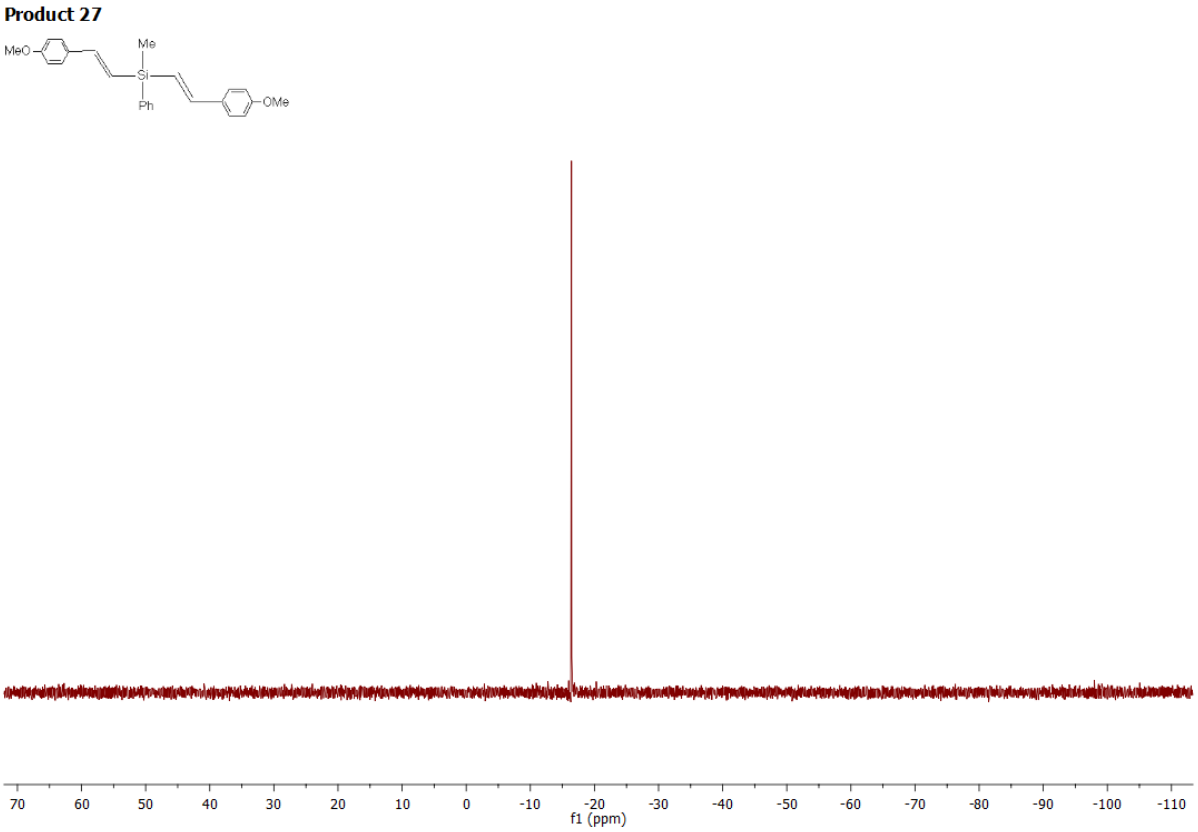



**Figure S75.** $^{29}$Si NMR (79 MHz, $CDCl_3$) of product **27**

*Analytical data of product 27:*

Isolated yield: 89% (378 mg); $^{1}$H NMR ($CDCl_3$, δ, ppm): 0.65 (s, 3H, C$H_3$), 3.87 (s, 6H, OC$H_3$), 6.57 (d, 2H, $J_{HH}$ = 19.1 Hz, =C*H*Si), 6.94 (d, 4H, $J_{HH}$ = 8.8 Hz, -$C_6H_4$-), 7.03 (d, 2H, $J_{HH}$ = 19.1 Hz, =C*H*), 7.43 – 7.50 (m, 7H, -$C_6H_4$- and Ph), 7.69 – 7.73 (m, 2H, Ph); $^{13}$C NMR ($CDCl_3$, δ, ppm): -3.56 (*C*$H_3$), 55.35 (O*C*$H_3$), 113.97, 122.47, 127.92 (d, *J* = 3.8 Hz), 129.23, 131.22, 134.67, 137.44, 146.11, 159.85; $^{29}$Si NMR ($CDCl_3$, δ, ppm): -16.42; MS: *m/z* (rel. intensity): 105 (13), 121 (29), 175 (16), 176 (14), 238 (21), 254 912), 264 (24), 265 (100), 266 (38), 267 (20), 278 (25), 296 (20), 310 (15), 371 (85), 372 (25), 386 (22, $M^+$).

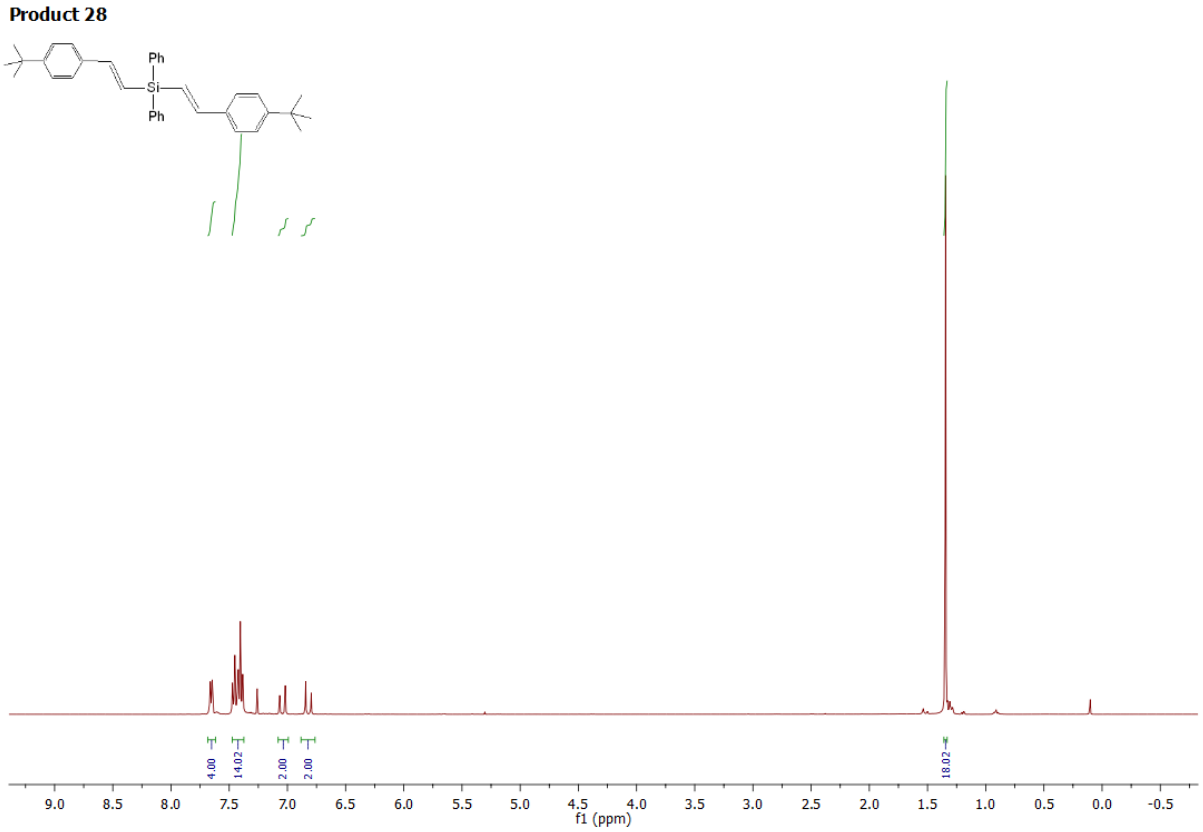



**Figure S76.** $^{1}$H NMR (400 MHz, $CDCl_3$) of product **28**

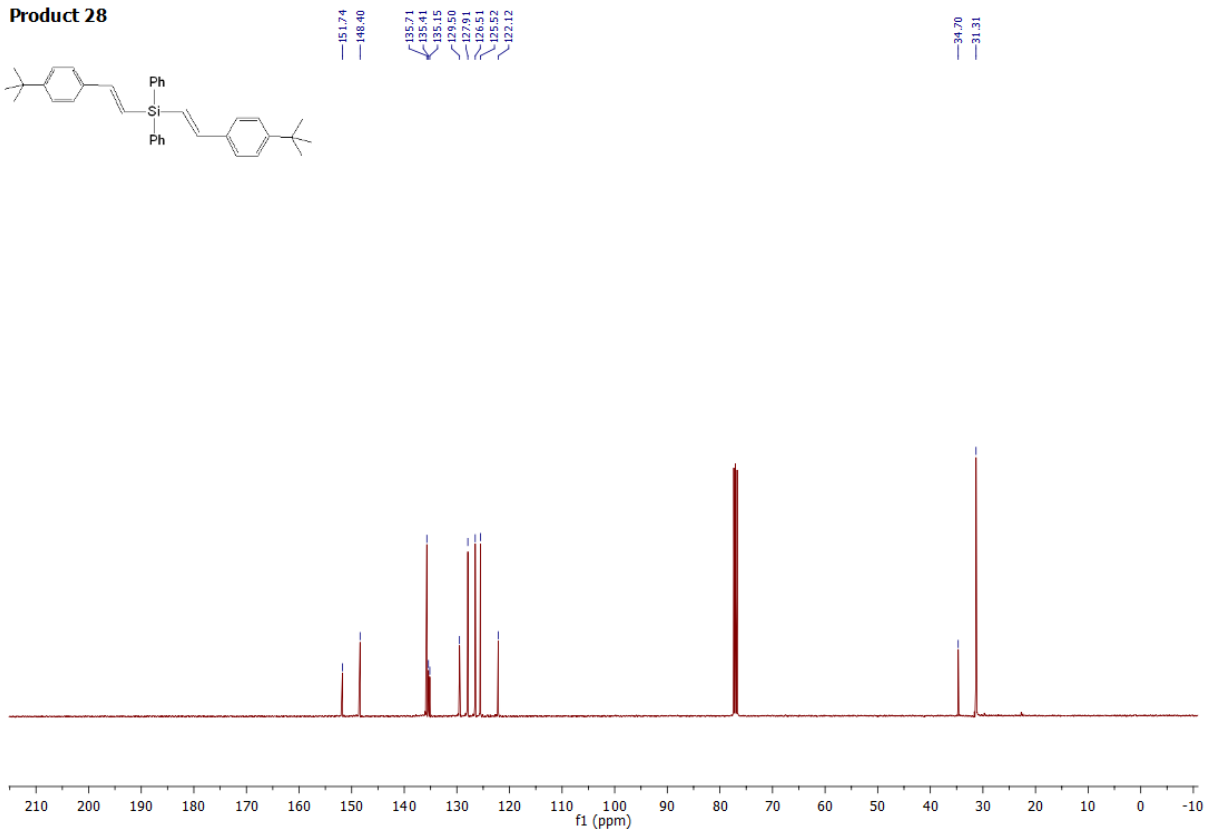
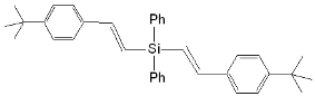



**Figure S77.** $^{13}$C NMR (100 MHz, $CDCl_3$) of product **28**

**Product 28**



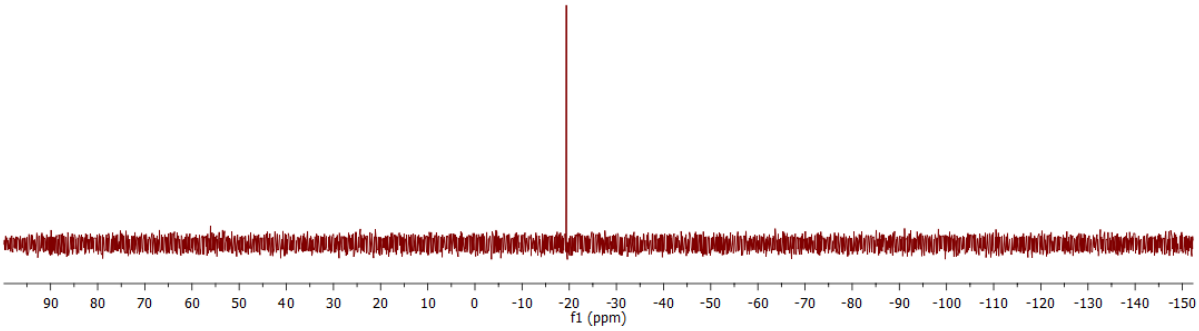




**Figure S78.** $^{29}$Si NMR (79 MHz, $CDCl_3$) of product **28**

*Analytical data of product 28:*

Isolated yield: 91% (500.8 mg); $^{1}$H NMR ($CDCl_3$, δ, ppm): 1.34 (s, 18H, C(C*H*$_3$)$_3$), 6.82 (d, 2H, $J_{HH}$ = 19.1 Hz, =C*H*Si), 7.04 (d, 2H, $J_{HH}$ = 19.1 Hz, =C*H*), 7.37 – 7.47 (m, 14H, -C$_6$*H*$_4$- and Ph), 7.62 – 7.69 (m, 4H, Ph); $^{13}$C NMR ($CDCl_3$, δ, ppm): 31.31 (C(*C*H$_3$)$_3$), 34.70 (*C*(CH$_3$)$_3$), 122.12, 125.52, 126.51, 127.91, 129.50, 135.15, 135.41, 135.71, 148.40, 151.74; $^{29}$Si NMR ($CDCl_3$, δ, ppm): -19.38; MS: *m/z* (rel. intensity): 57 (39), 105 (10), 181 (12), 221 (17), 248 (12), 250 (26), 251 (10), 264 (174), 277 (14), 278 (32), 279 (15), 354 (100), 355 (47), 356 (11), 357 (17), 410 (59), 411 (22), 422 (18), 423 (34), 424 (13), 500 (15, M$^+$); anal. calcd. for $C_{36}H_{40}Si$ (%): C: 86.34, H: 8.05; found: C: 86.39, H: 8.12.

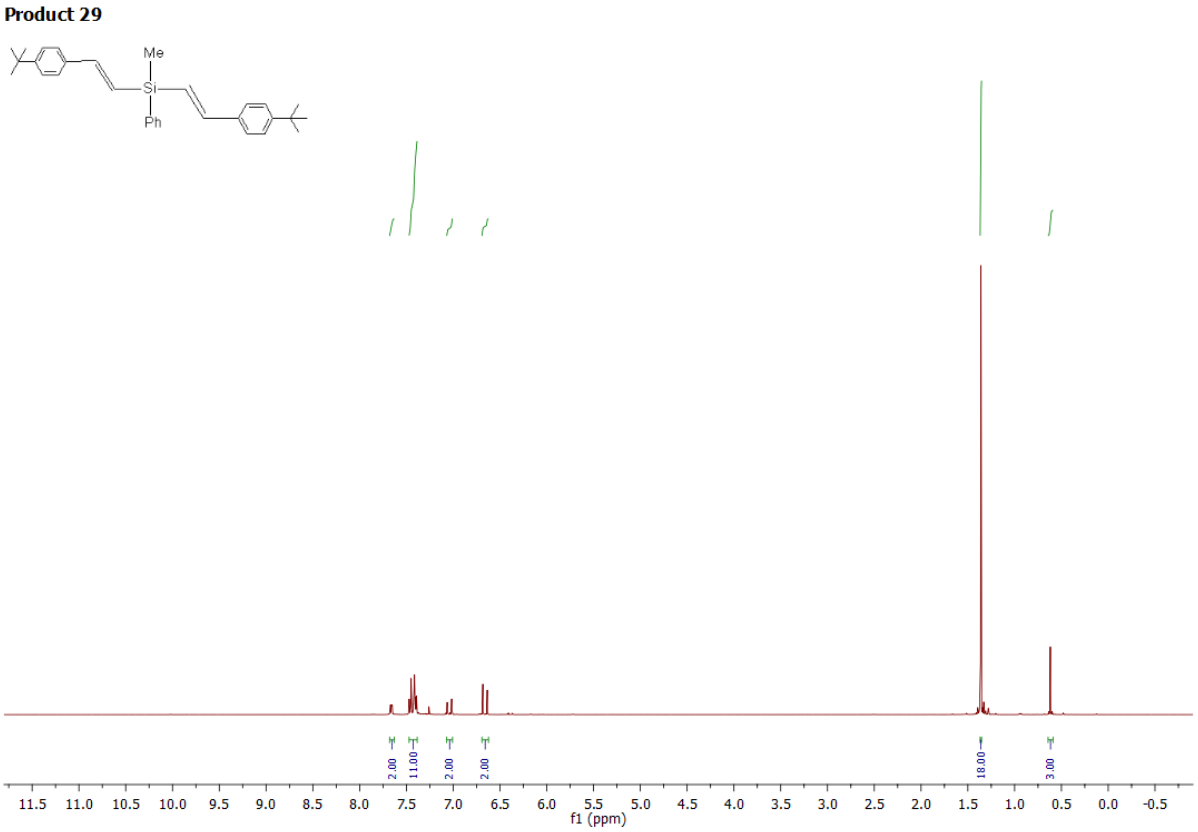



**Figure S79.** $^{1}H$ NMR (400 MHz, $CDCl_3$) of product **29**

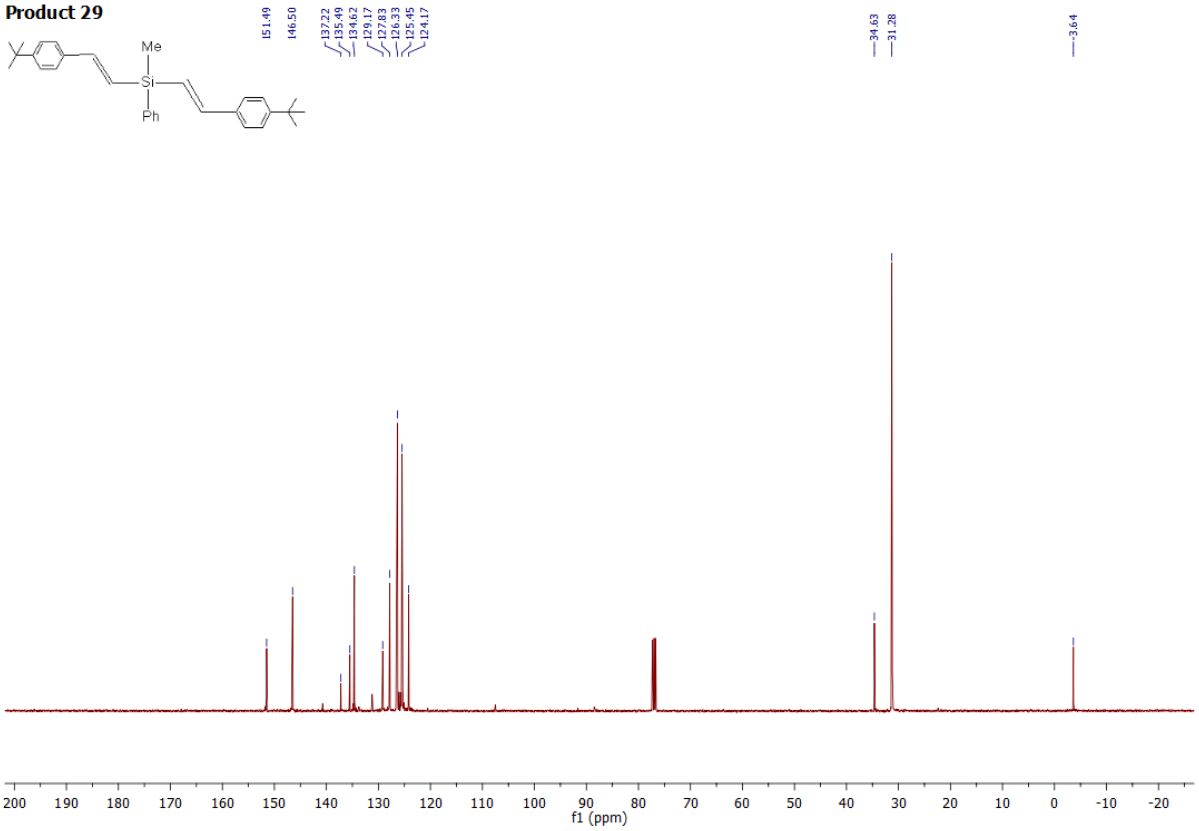



**Figure S80.** $^{13}C$ NMR (100 MHz, $CDCl_3$) of product **29**

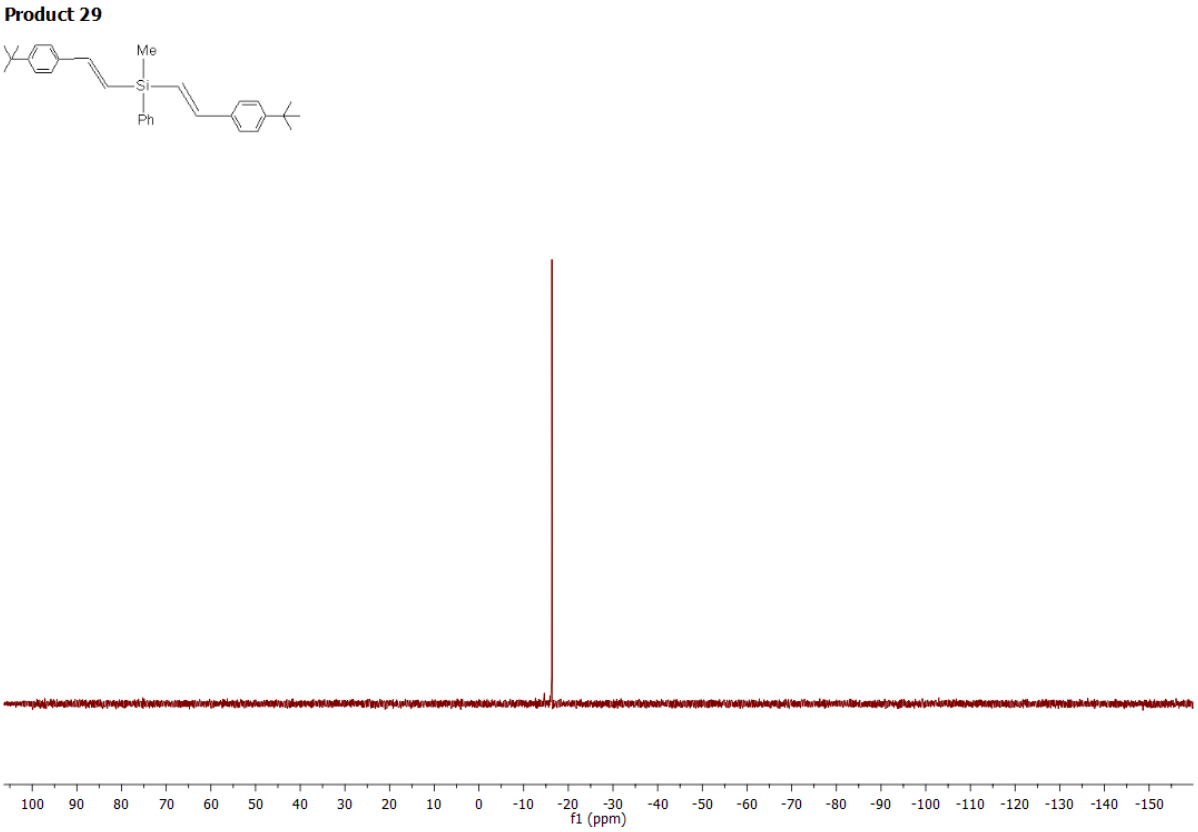



**Figure S81.** $^{29}$Si NMR (79 MHz, $CDCl_3$) of product **29**

*Analytical data of product 29:*

Isolated yield: 92% (444 mg); $^{1}$H NMR ($CDCl_3$, δ, ppm): 0.62 (s, 3H, C$H_3$), 1.36 (s, 18H, C(C$H_3$)$_3$), 6.66 (d, 2H, $J_{HH}$ = 19.1 Hz, =C*H*Si), 7.04 (d, 2H, $J_{HH}$ = 19.1 Hz, =C*H*), 7.37 – 7.48 (m, 11H, -C$_6H_4$- and Ph), 7.64 – 7.69 (m, 2H, Ph); $^{13}$C NMR ($CDCl_3$, δ, ppm): -3.64 (*C*H$_3$), 31.28 (C(*C*H$_3$)$_3$), 34.63 (*C*(CH$_3$)$_3$), 124.17, 125.45, 126.33, 127.83, 129.17, 134.62, 135.49, 137.22, 146.50, 151.49; $^{29}$Si NMR ($CDCl_3$, δ, ppm): -16.32; MS: *m/z* (rel. intensity): 57 (36), 263 (11), 290 (10), 292 (100), 293 (43), 304 (12), 348 (23), 361 (24), 423 (21), 438 (12, M$^+$).

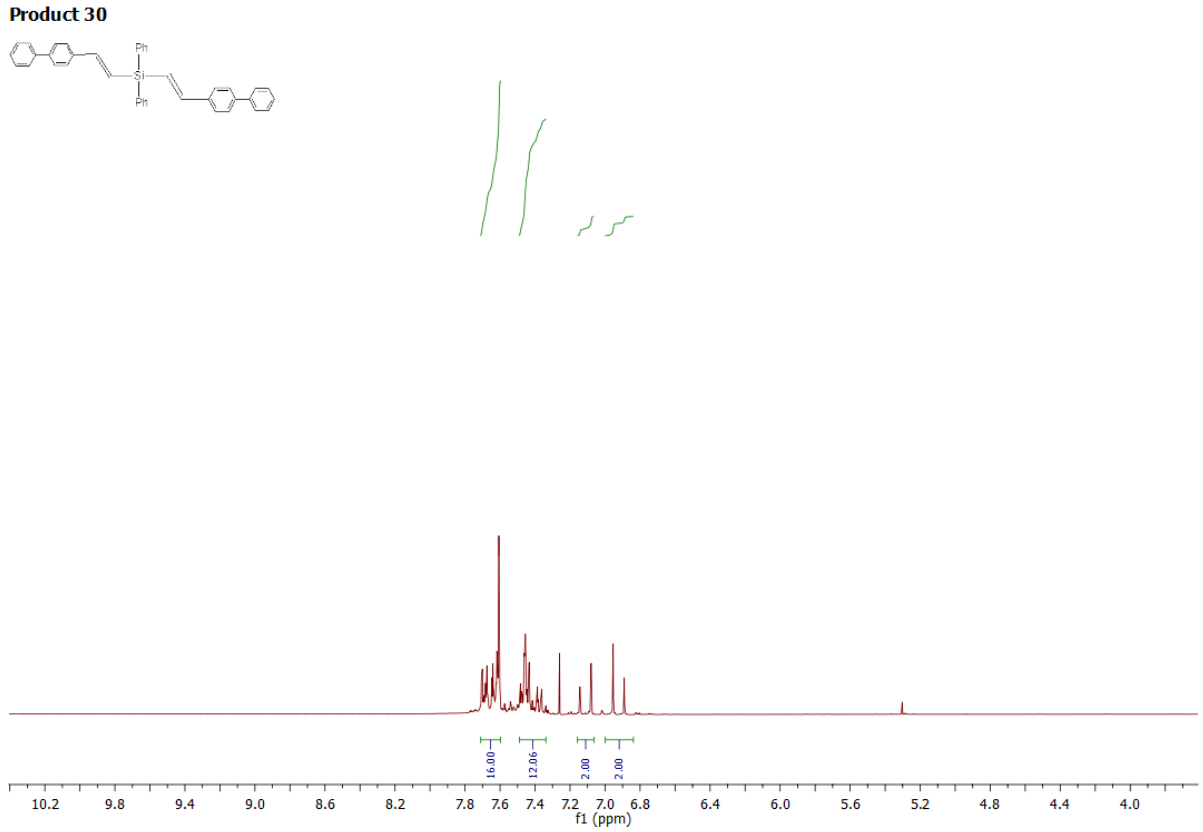



**Figure S82.** $^{1}$H NMR (400 MHz, $CDCl_3$) of product **30**

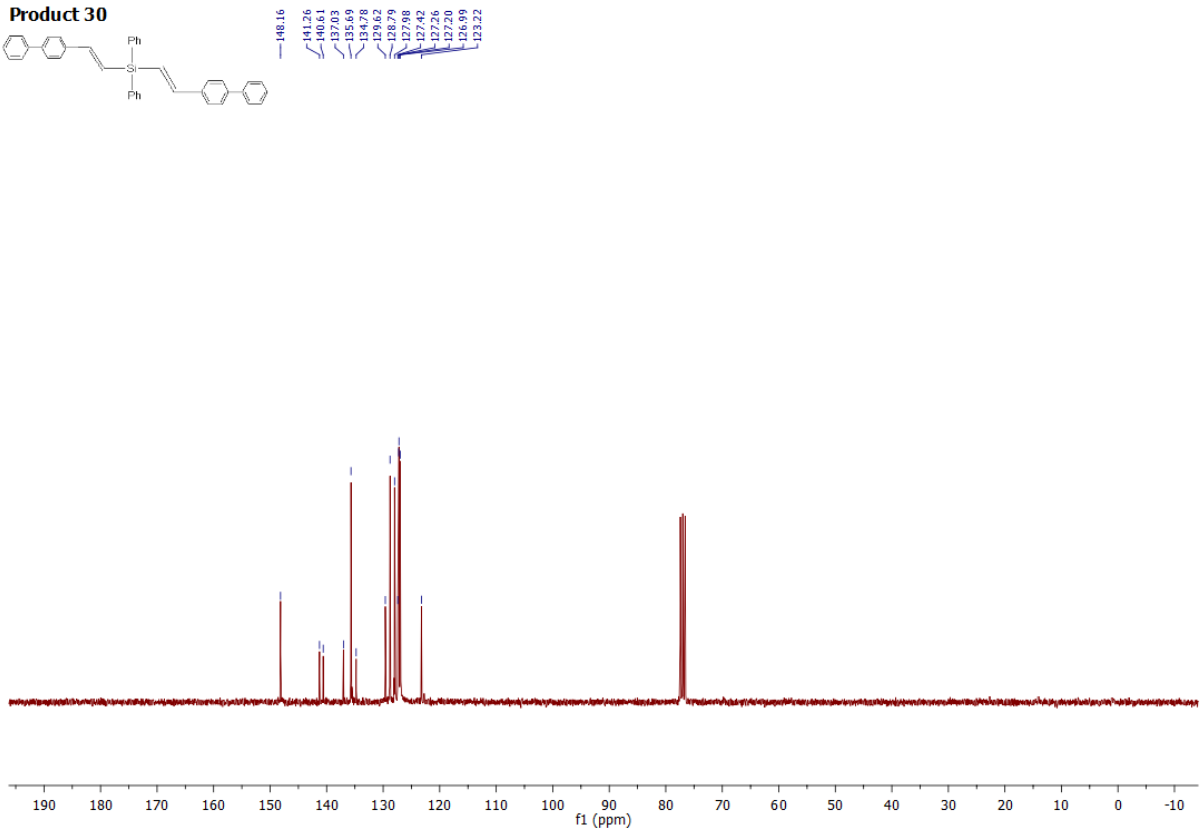



**Figure S83.** $^{13}$C NMR (100 MHz, $CDCl_3$) of product **30**

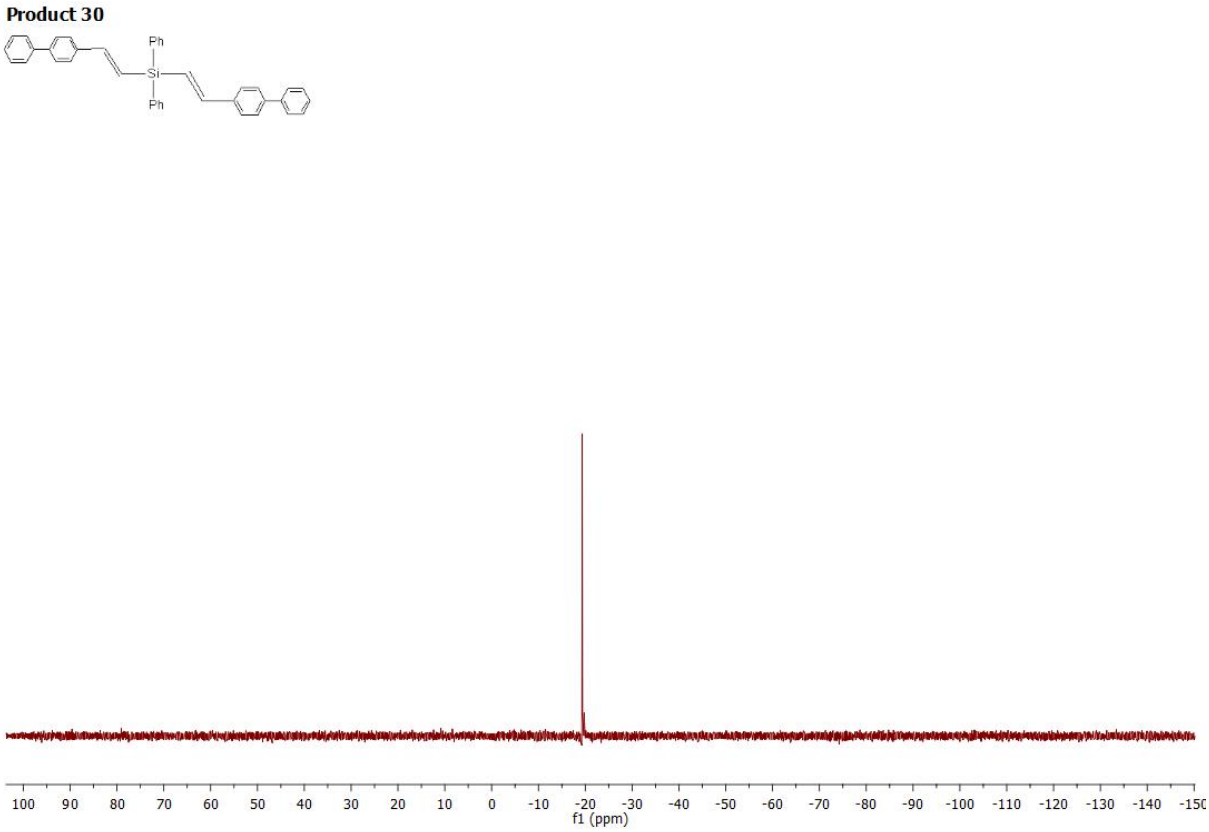



**Figure S84.** $^{29}$Si NMR (79 MHz, $CDCl_3$) of product **30**

*Analytical data of product 30:*

Isolated yield: 89% (528.9 mg); $^{1}$H NMR ($CDCl_3$, δ, ppm): 6.92 (d, 2H, $J_{HH}$ = 19.1 Hz, =C*H*Si), 7.11 (d, 2H, $J_{HH}$ = 19.1 Hz, =C*H*), 7.34 – 7.49 (m, 12H, Ar), 7.60 – 7.71 (m, 16H, Ar); $^{13}$C NMR ($CDCl_3$, δ, ppm): 123.22, 126.99, 127.20, 127.26, 127.42, 127.98, 128.79, 129.62, 134.78, 135.69, 137.03, 140.61, 141.26, 148.16; $^{29}$Si NMR ($CDCl_3$, δ, ppm): -19.36; MS: *m/z* (rel. intensity): 49 (21), 73 (45), 91 (49), 105 (20), 207 (60), 208 (23), 209 (29), 281 (37), 282 (20), 283 (32), 284 (36), 297 (34), 355 (35), 373 (100), 374 (100), 386 (30), 429 (30), 464 (24), 540 (14, $M^+$); anal. calcd. for $C_{40}H_{32}Si$ (%): C: 88.84, H: 5.96; found: C: 89.02, H: 6.12.

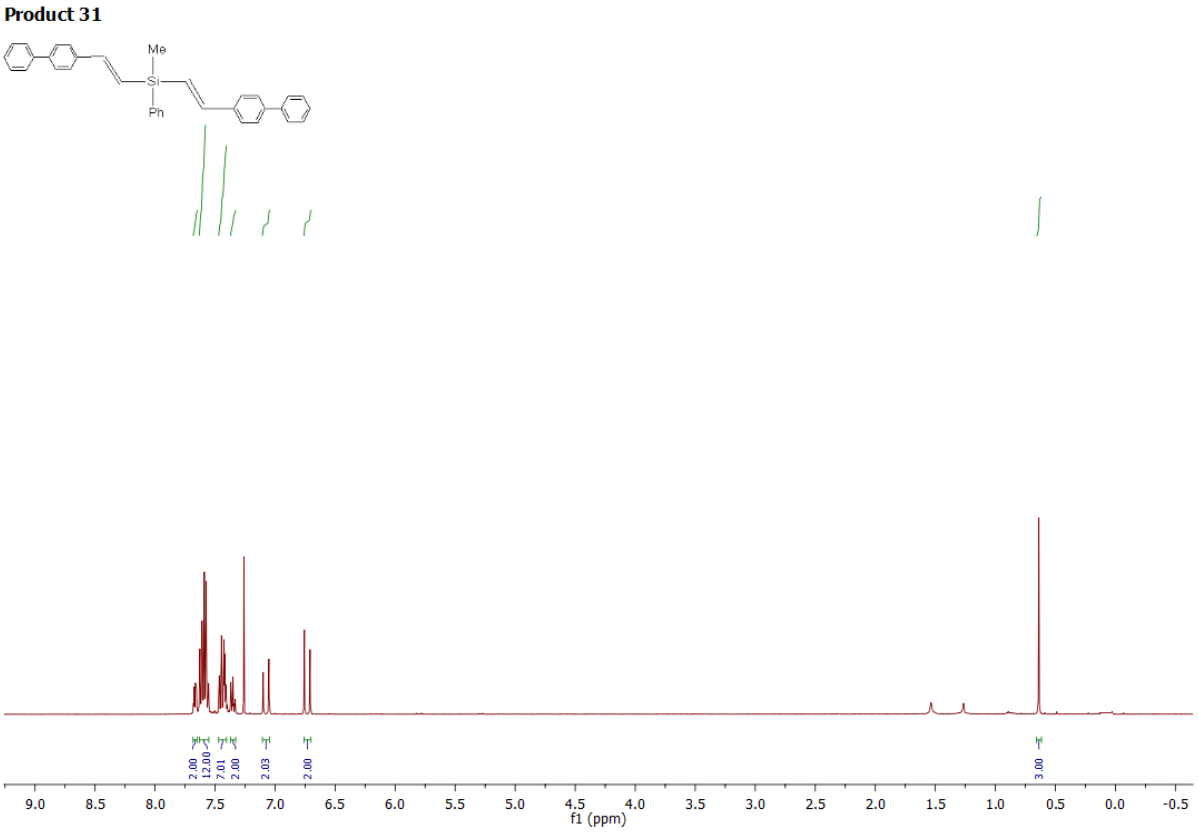



**Figure S85.** $^{1}$H NMR (400 MHz, $CDCl_3$) of product **31**

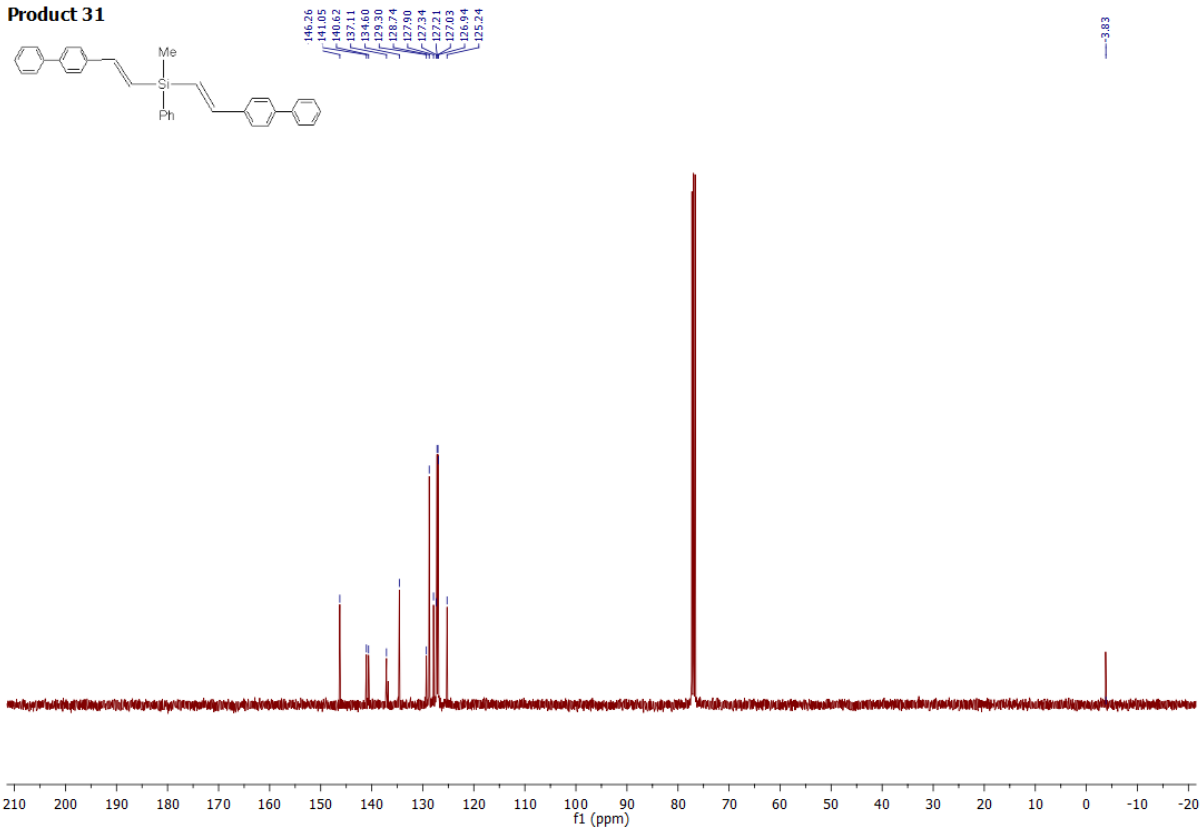



**Figure S86.** $^{13}$C NMR (100 MHz, $CDCl_3$) of product **31**

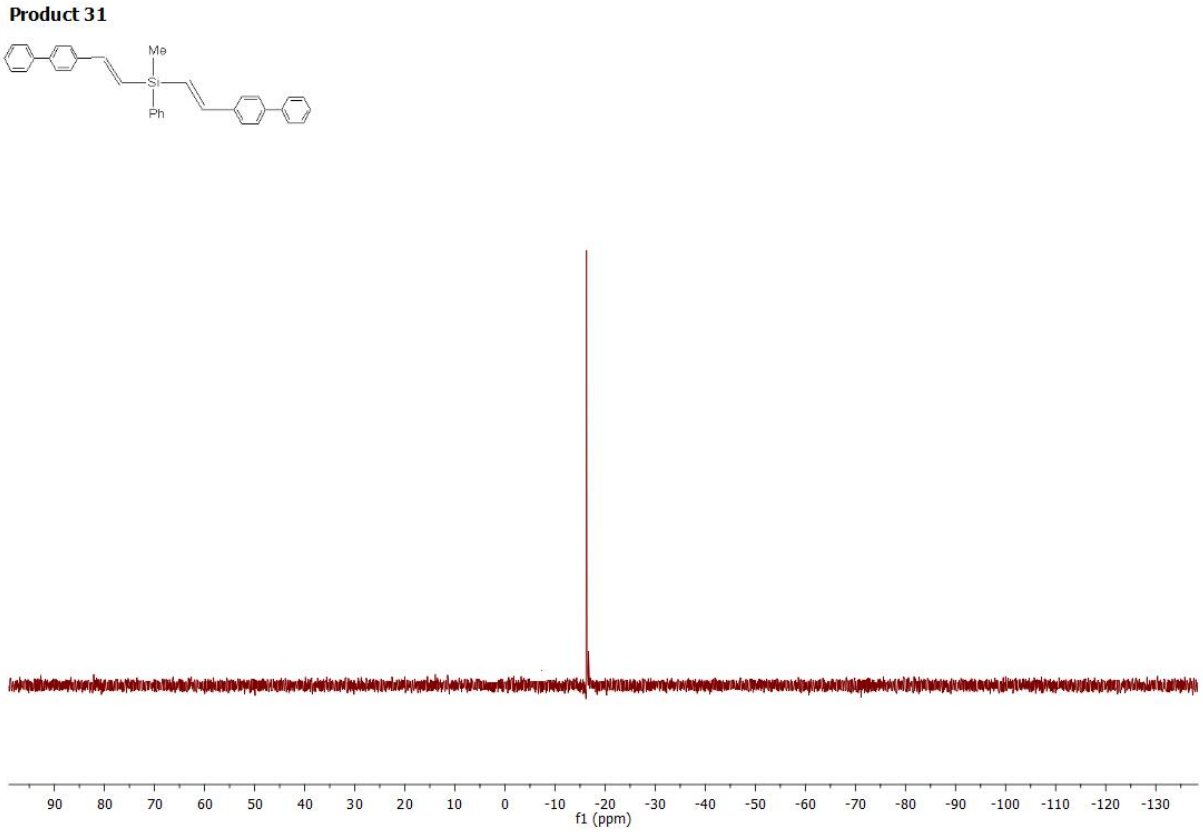



**Figure S87.** $^{29}Si$ NMR (79 MHz, $CDCl_3$) of product **31**

*Analytical data of product 31:*

Isolated yield: 87% (457.6 mg); $^{1}H$ NMR ($CDCl_3$, δ, ppm): 0.64 (s, 3H, C*H*$_3$), 6.73 (d, 2H, $J_{HH}$ = 19.1 Hz, =C*H*Si), 7.08 (d, 2H, $J_{HH}$ = 19.1 Hz, =C*H*), 7.33 – 7.37 (m, 2H, Ar), 7.40 – 7.47 (m, 7H, Ar), 7.55 – 7.63 (m, 12H, Ar), 7.65 – 7.68 (m, 2H, Ar); $^{13}C$ NMR ($CDCl_3$, δ, ppm): -3.83 (*C*H$_3$), 125.24, 126.94, 127.03, 127.21, 127.34, 127.90, 128.74, 129.30, 134.60, 137.11, 140.62, 141.05, 146.26; $^{29}Si$ NMR ($CDCl_3$, δ, ppm): -16.29; MS: *m/z* (rel. intensity): 105 (12), 208 (12), 221 (12), 222 (15), 284 (20), 312 (100), 312 (42), 314 (12), 324 (16), 360 (10), 387 (21), 388 (11), 400 (11), 402 (12), 478 (18, $M^+$); anal. calcd. for $C_{35}H_{30}Si$ (%): C: 87.82, H: 6.32; found: C: 87.75, H: 6.26.

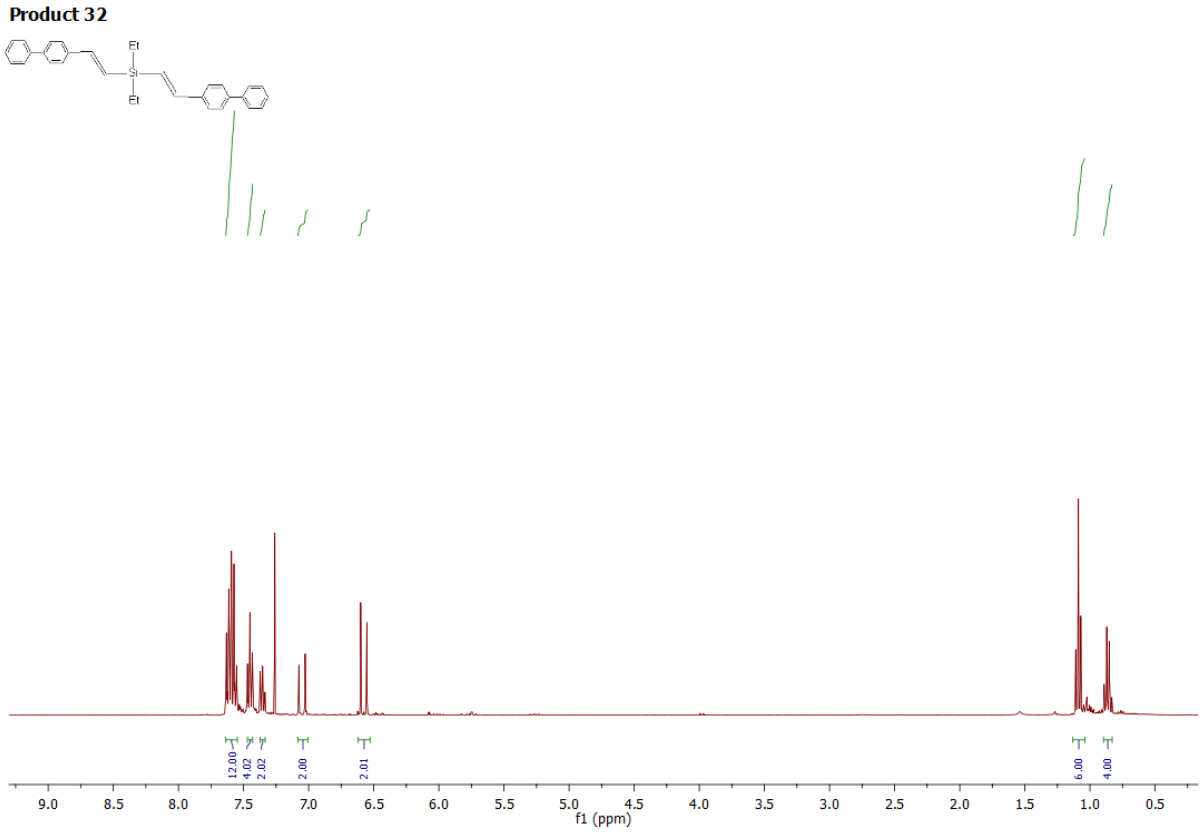



**Figure S88.** $^{1}H$ NMR (400 MHz, $CDCl_3$) of product **32**

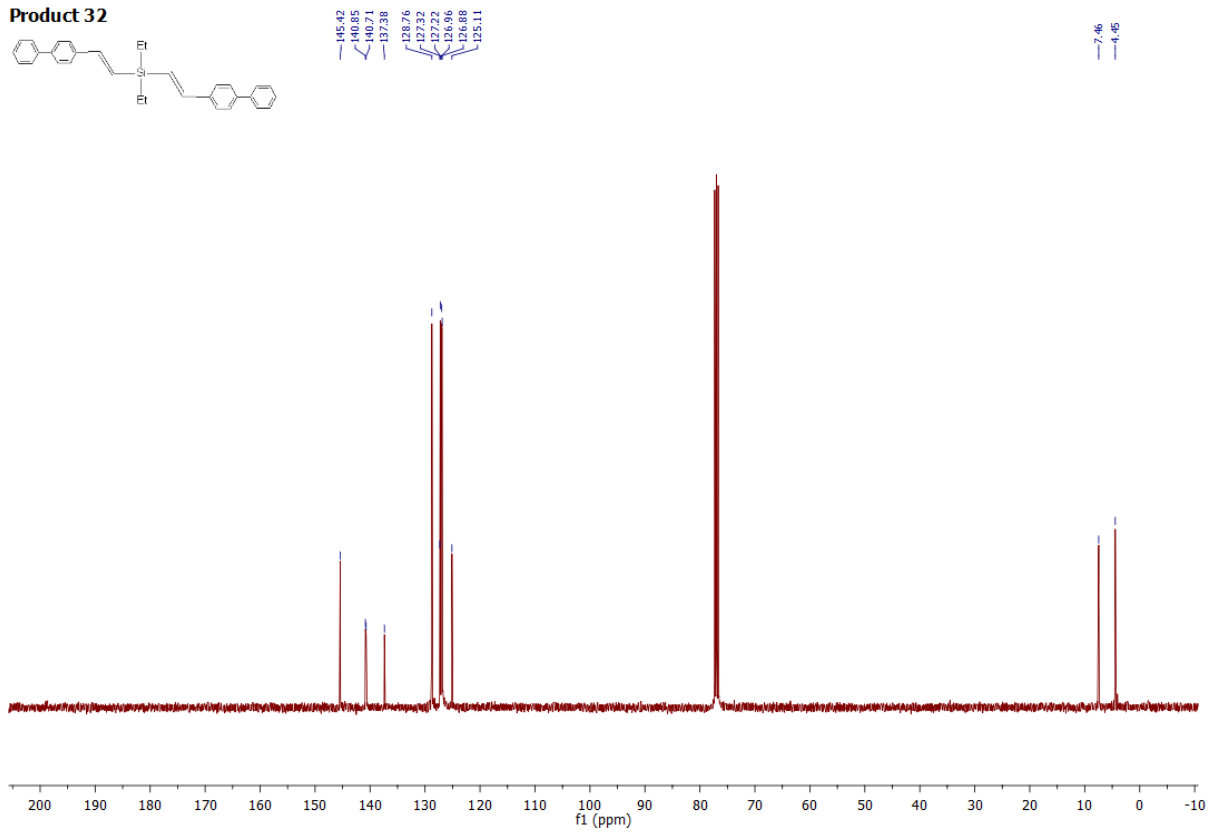



**Figure S89.** $^{13}C$ NMR (100 MHz, $CDCl_3$) of product **32**

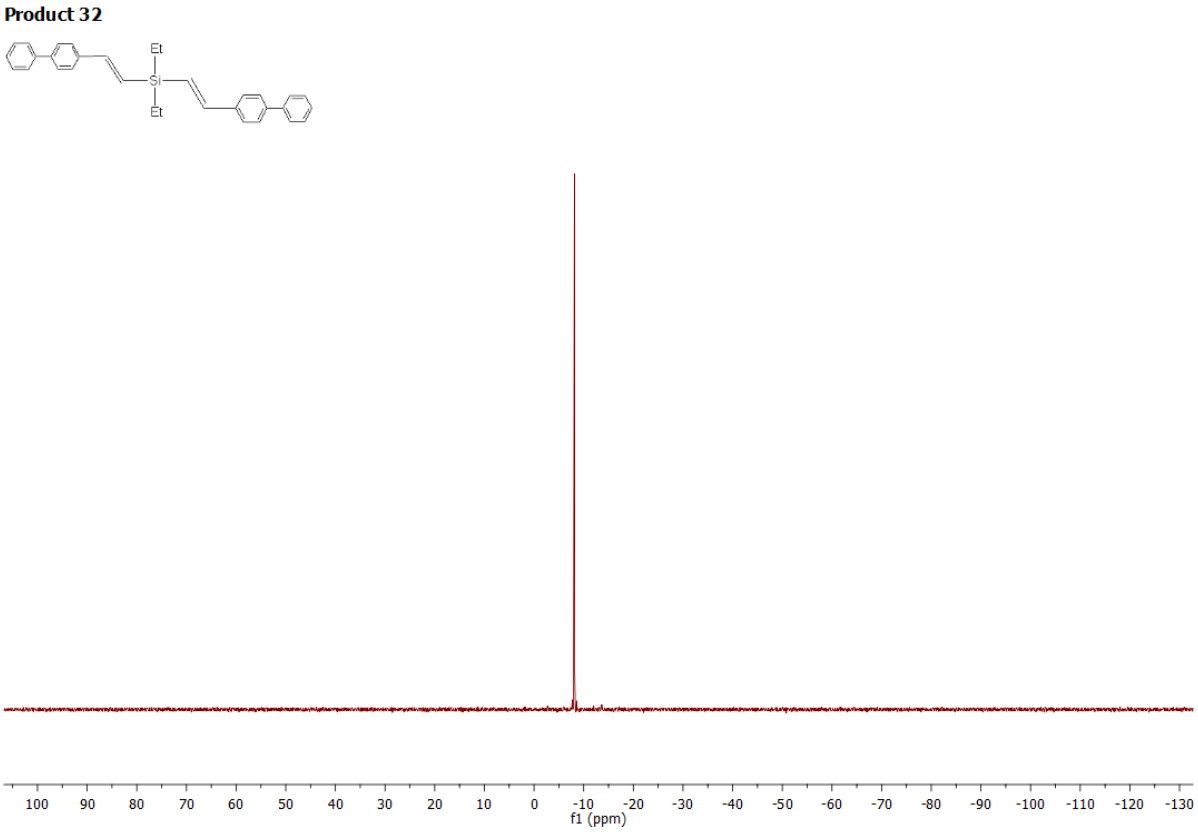



**Figure S90.** $^{29}$Si NMR (79 MHz, $CDCl_3$) of product **32**

*Analytical data of product 32:*

Isolated yield: 88% (430 mg); $^{1}$H NMR ($CDCl_3$, δ, ppm): 0.86 (q, 4H, $J_{HH}$ = 7.8 Hz, $CH_3CH_2$-), 1.09 (t, 6H, $J_{HH}$ = 7.9 Hz, $CH_3CH_2$-), 6.58 (d, 2H, $J_{HH}$ = 19.2 Hz, =CHSi), 7.05 (d, 2H, $J_{HH}$ = 19.2 Hz, =CH), 7.33 – 7.37 (m, 2H, Ar), 7.43 – 7.47 (m, 4H, Ar), 7.55 – 7.64 (m, 12H, Ar); $^{13}$C NMR ($CDCl_3$, δ, ppm): 4.45 ($CH_3$), 7.46 ($CH_2$), 125.11, 126.88, 126.96, 127.22, 127.32, 128.76, 137.38, 140.71, 140.85, 145.42; $^{29}$Si NMR ($CDCl_3$, δ, ppm): -8.14; MS: *m/z* (rel. intensity): 165 (16), 178 (18), 179 (12), 180 (28), 181 (36), 182 (11), 197 (15), 205 (18), 207 (12), 208 (21), 225 (25), 226 (14), 234 (19), 235 (100), 236 (32), 276 (16), 277 (57), 278 (27), 415 (85), 416 (24), 444 (2, $M^+$); anal. calcd. for $C_{32}H_{32}Si$ (%): C: 86.43, H: 7.25; found: C: 86.35, H: 7.18.

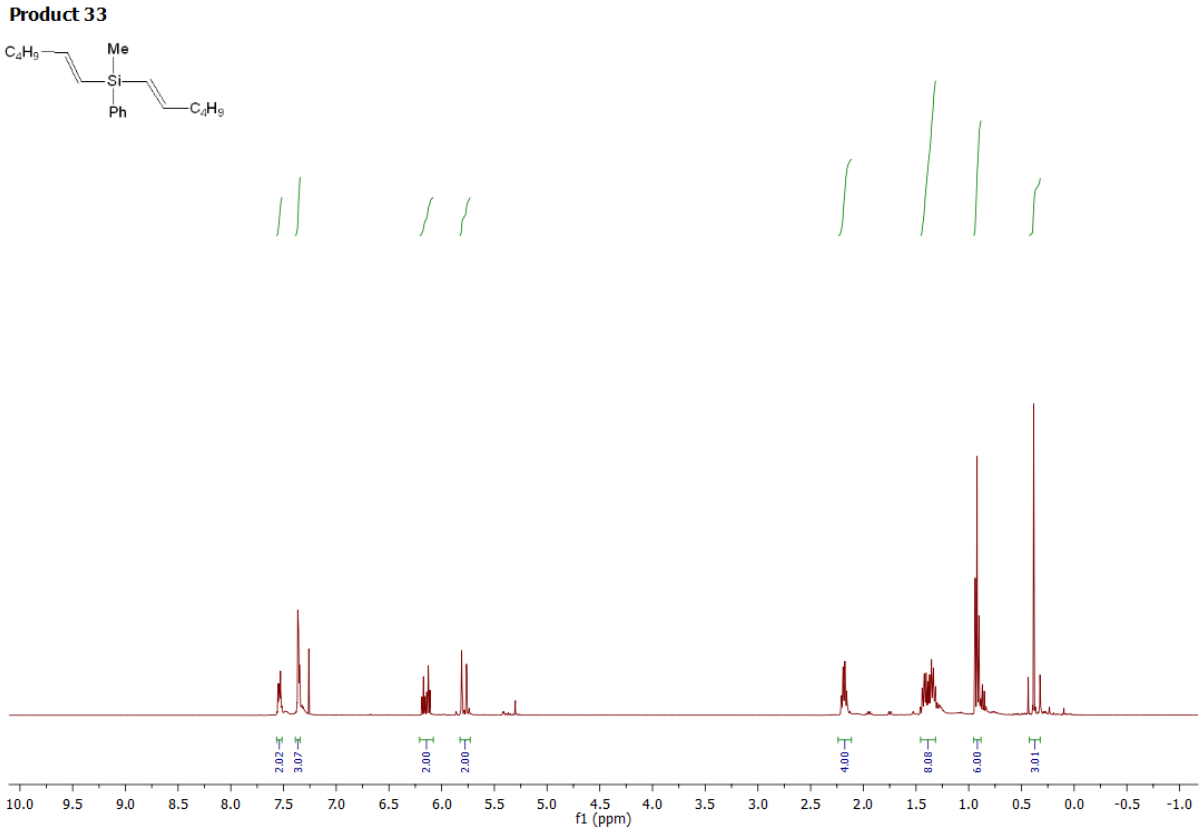



**Figure S91.** $^{1}$H NMR (400 MHz, $CDCl_3$) of product **33**

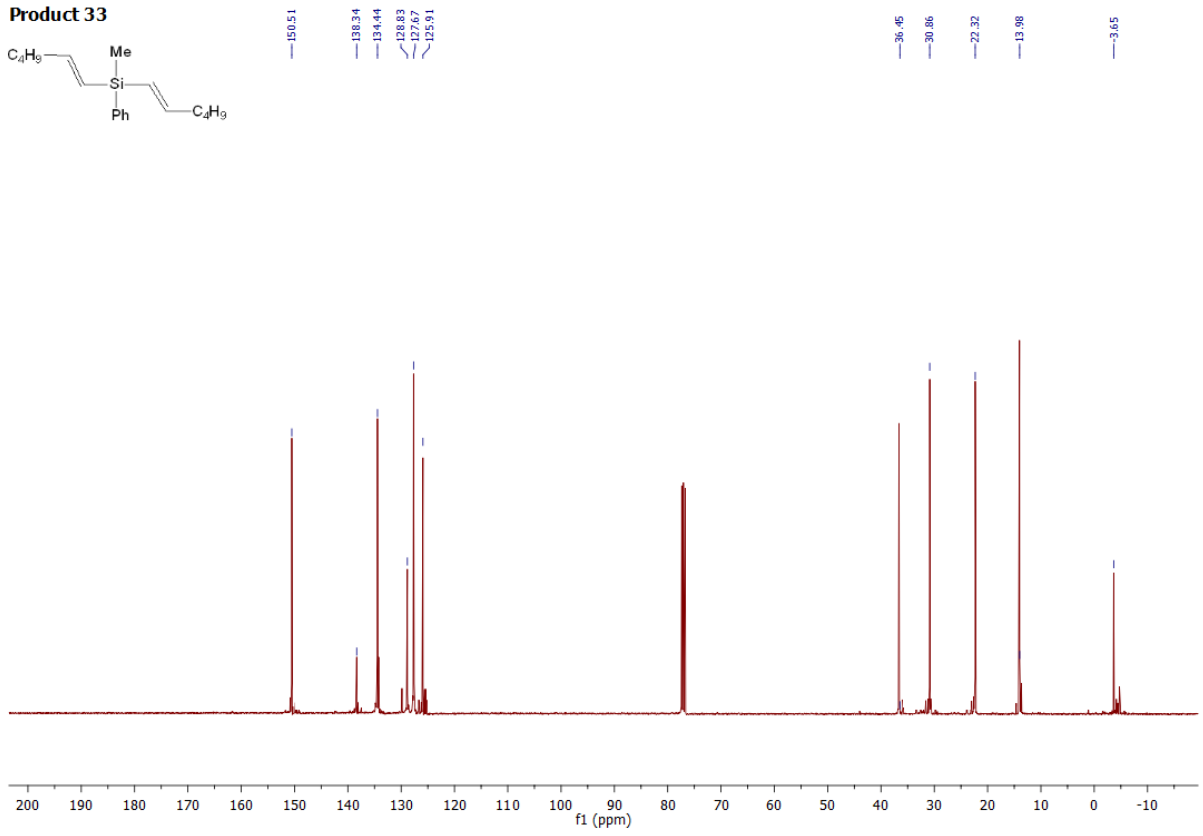
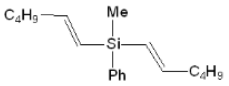



**Figure S92.** $^{13}$C NMR (100 MHz, $CDCl_3$) of product **33**

**Product 33**



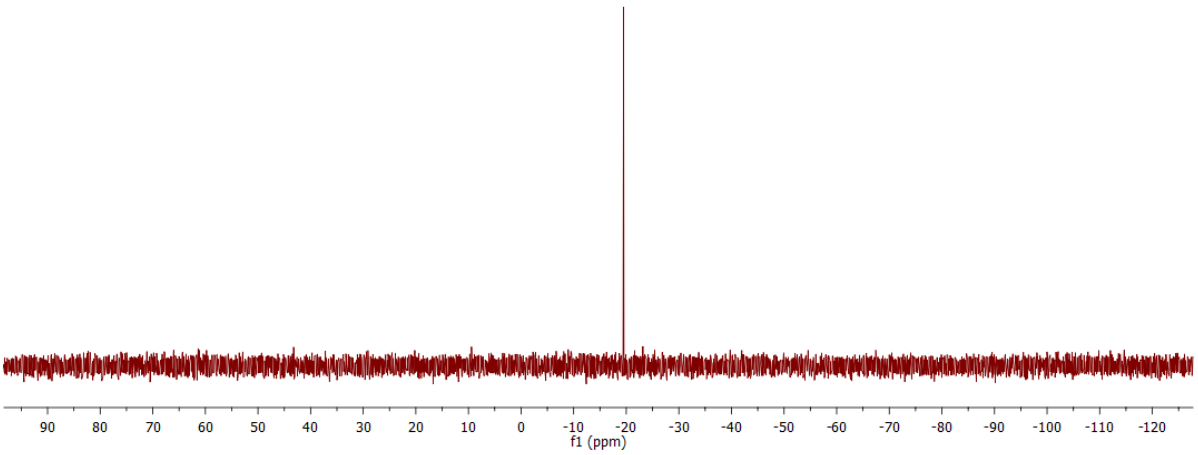




**Figure S93.** $^{29}$Si NMR (79 MHz, $CDCl_3$) of product **33**

*Analytical data of product 33:*

Isolated yield: 91% (286.5 mg); $^{1}$H NMR ($CDCl_3$, δ, ppm): 0.38 (s, 3H, C*H*$_3$), 0.92 (t, 6H, $J_{HH}$ = 7.2 Hz, -(CH$_2$)$_3$C*H*$_3$), 1.32 – 1.46 (m, 8H, -(C*H*$_2$)$_2$CH$_3$), 2.11 – 2.24 (m, 4H, =CHC*H*$_2$), 5.79 (dt, 2H, $J_{HH}$ = 18.5, 1.5 Hz, =C*H*Si), 6.15 (dt, 2H, $J_{HH}$ = 18.5, 6.1 Hz, =C*H*CH$_2$), 7.34 – 7.39 (m, 3H, Ph), 7.52 – 7.57 (m, 2H, Ph); $^{13}$C NMR ($CDCl_3$, δ, ppm): -3.65 (*C*H$_3$), 13.98, 22.32, 30.86, 36.45, 125.91, 127.67, 128.83, 134.44, 138.34, 150.51; $^{29}$Si NMR ($CDCl_3$, δ, ppm): -19.50; MS: *m/z* (rel. intensity): 59 (13), 105 (20), 109 (13), 119 (20), 121 (78), 122 (25), 123 (16), 135 (13), 145 (30), 146 (16), 147 (13), 159 (27), 160 (16), 161 (14), 173 (36), 174 (27), 187 (22), 189 (27), 201 (21), 202 (36), 203 (83), 204 (18), 209 (100), 210 (21), 229 (47), 230 (13), 271 (79), 272 (19), 286 (6, M$^+$); anal. calcd. for $C_{19}H_{30}Si$ (%): C: 79.64, H: 10.55; found: C: 79.81, H: 10.72.

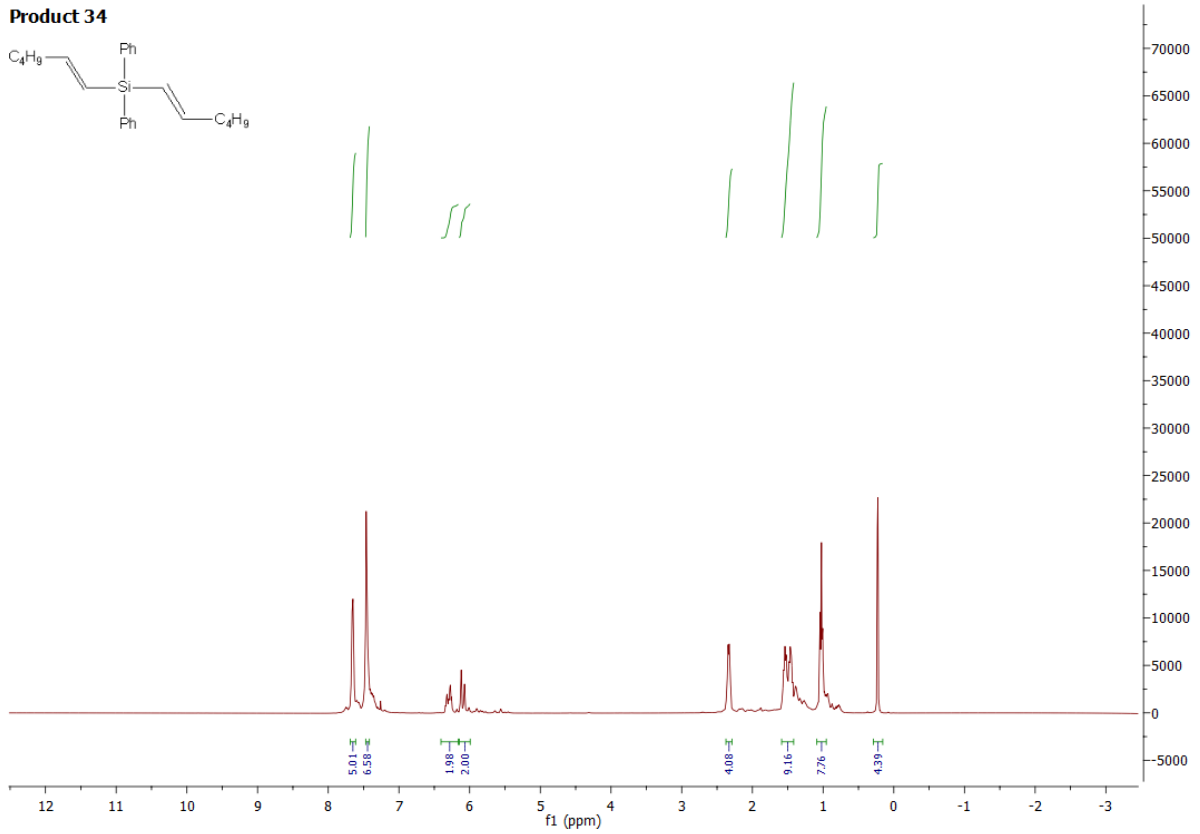



**Figure S94.** $^{1}H$ NMR (400 MHz, $CDCl_3$) of product **34**

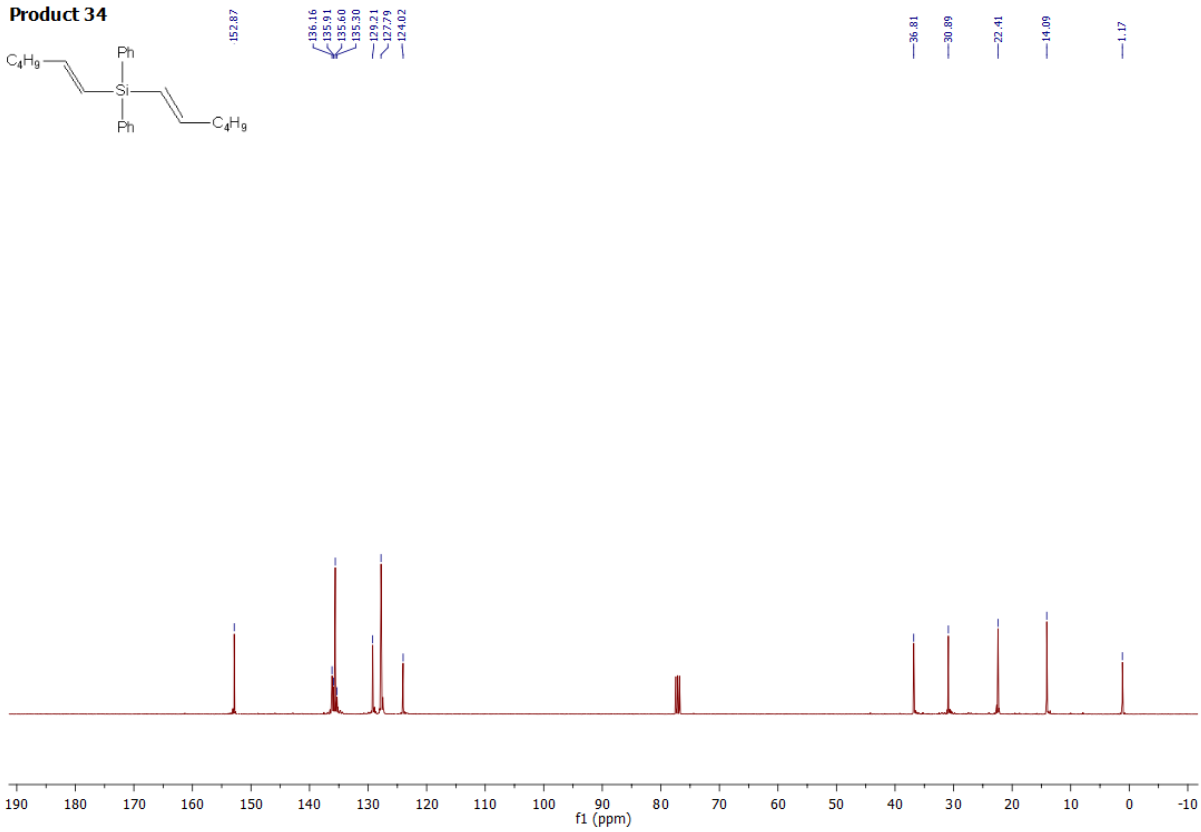



**Figure S95.** $^{13}C$ NMR (100 MHz, $CDCl_3$) of product **34**

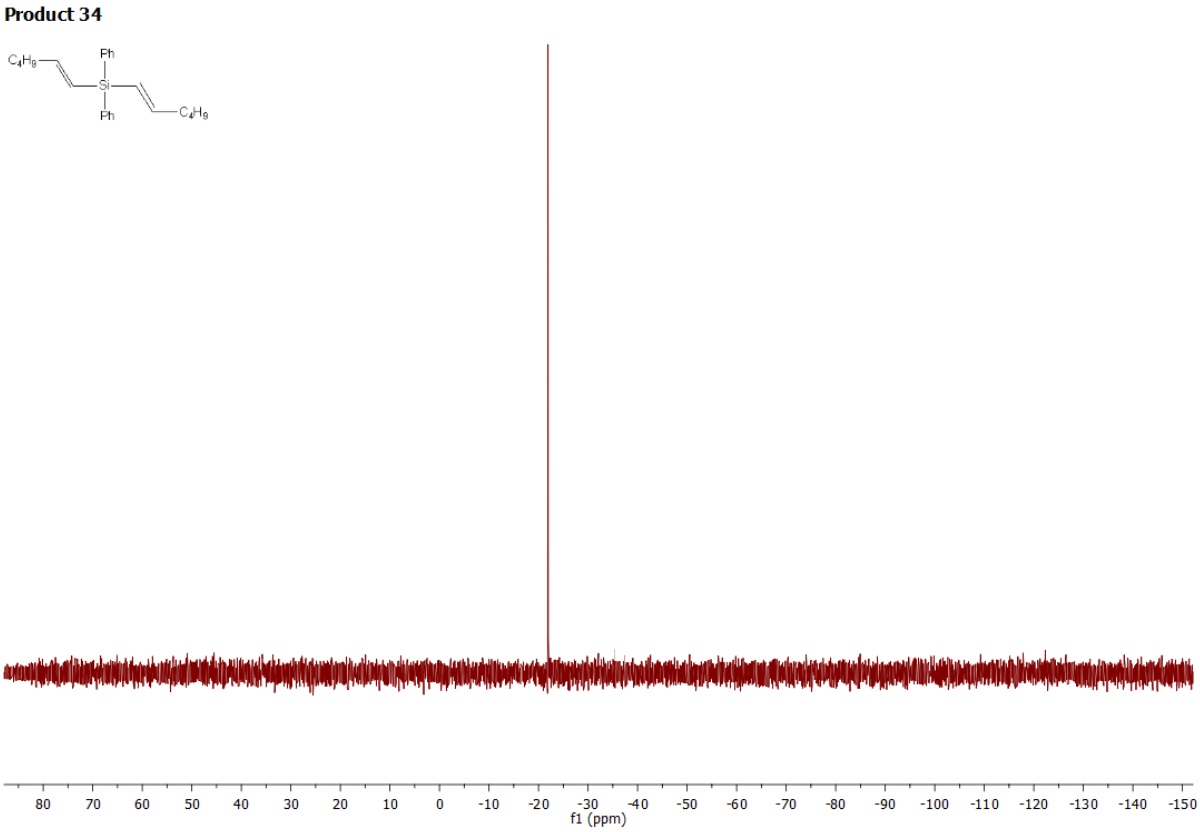



**Figure S96.** $^{29}$Si NMR (79 MHz, $CDCl_3$) of product **34**

*Analytical data of product 34:*

Isolated yield: 90% (344.7 mg); $^{1}$H NMR ($CDCl_3$, δ, ppm): 1.02 – 1.07 (m, 6H, -$(CH_2)_3CH_3$), 1.43 – 1.57 (m, 8H, -$(CH_2)_2CH_3$), 2.32 – 2.40 (m, 4H, =$CHCH_2$), 6.03-6.20 (m, 2H, =CHSi), 6.21 – 6.40 (m, 2H, =$CHCH_2$), 7.46– 7.50 (m, 6H, Ph), 7.66 – 7.70 (m, 4H, Ph); $^{13}$C NMR ($CDCl_3$, δ, ppm): 14.09, 22.41, 30.89, 36.81, 124.02, 127.79, 129.21, 135.30, 135.60, 135.91, 136.16, 152.87; $^{29}$Si NMR ($CDCl_3$, δ, ppm): -21.92; MS: *m/z* (rel. intensity): 105 (12), 183 (20), 266 (18), 271 (57), 272 (19), 291 (100), 292 (32), 348 (2, $M^+$); anal. calcd. for $C_{24}H_{32}Si$ (%): C: 82.69, H: 9.25; found: C: 82.81, H: 9.39.

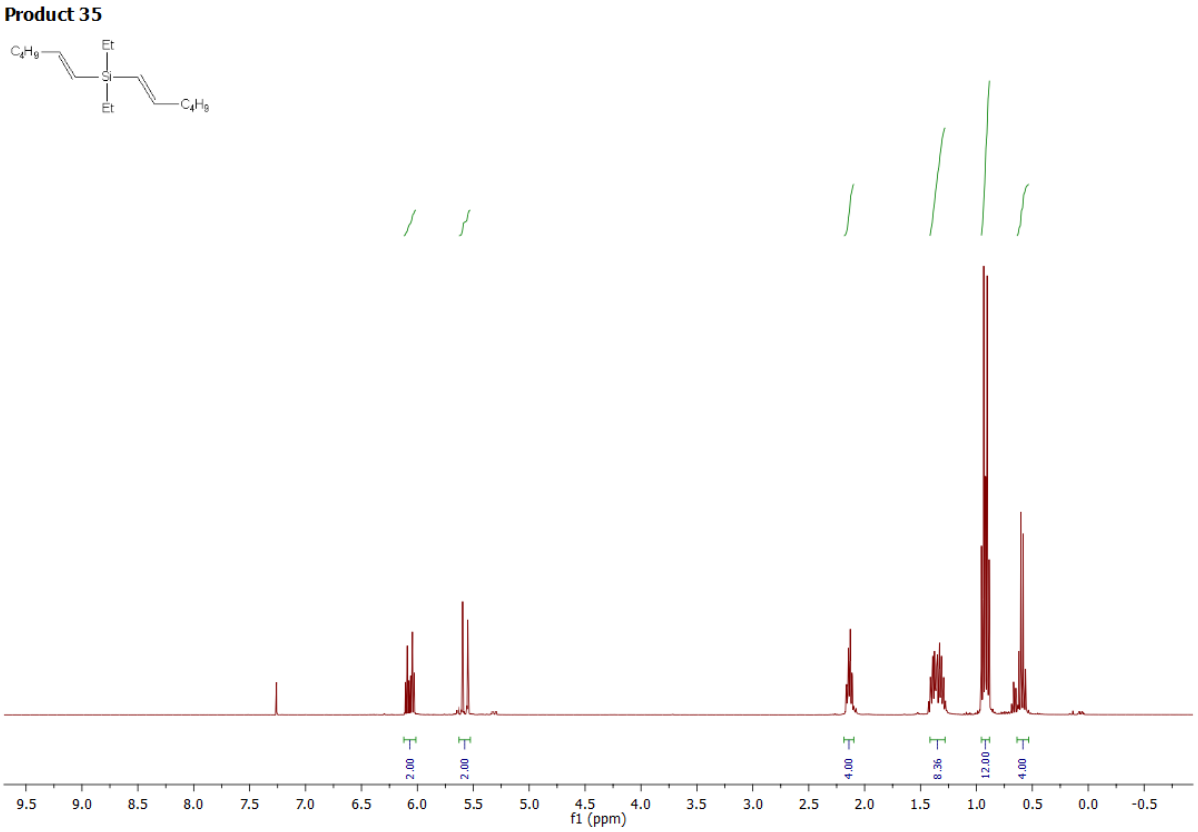



**Figure S97.** $^{1}$H NMR (400 MHz, $CDCl_3$) of product **35**

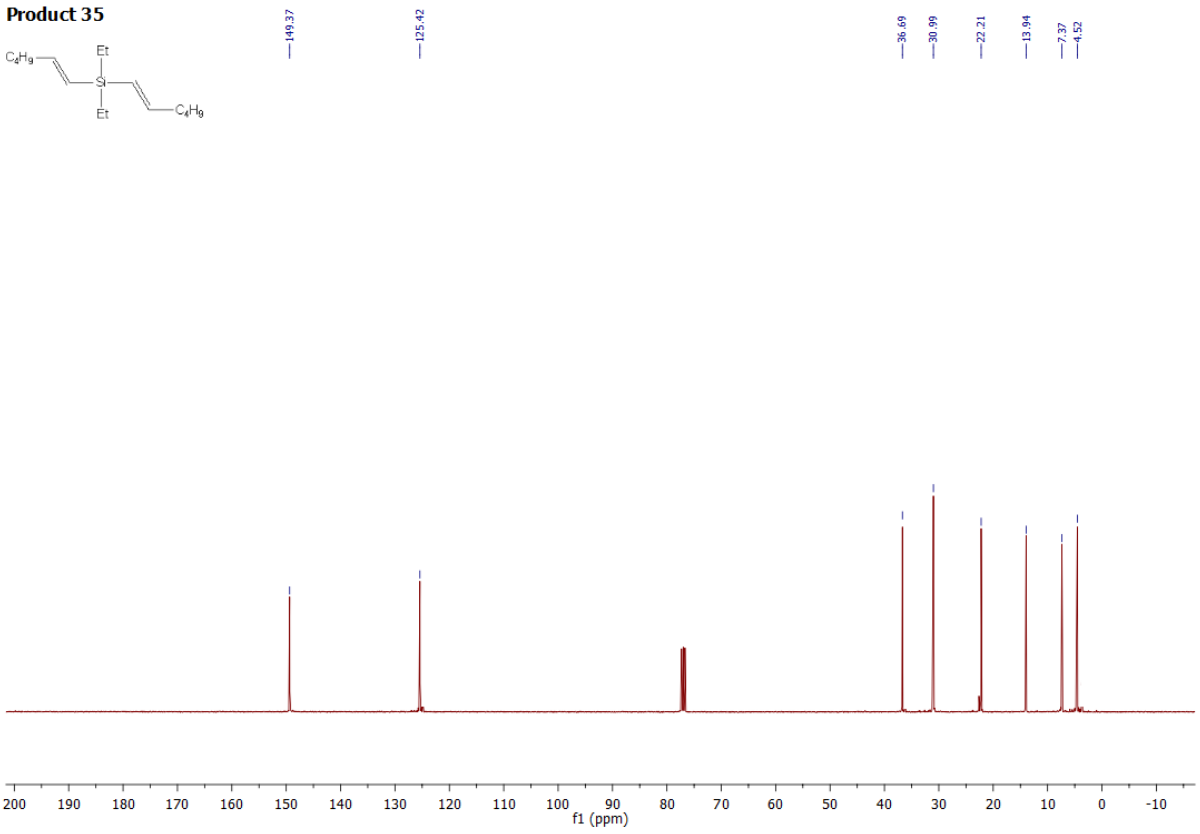



**Figure S98.** $^{13}$C NMR (100 MHz, $CDCl_3$) of product **35**

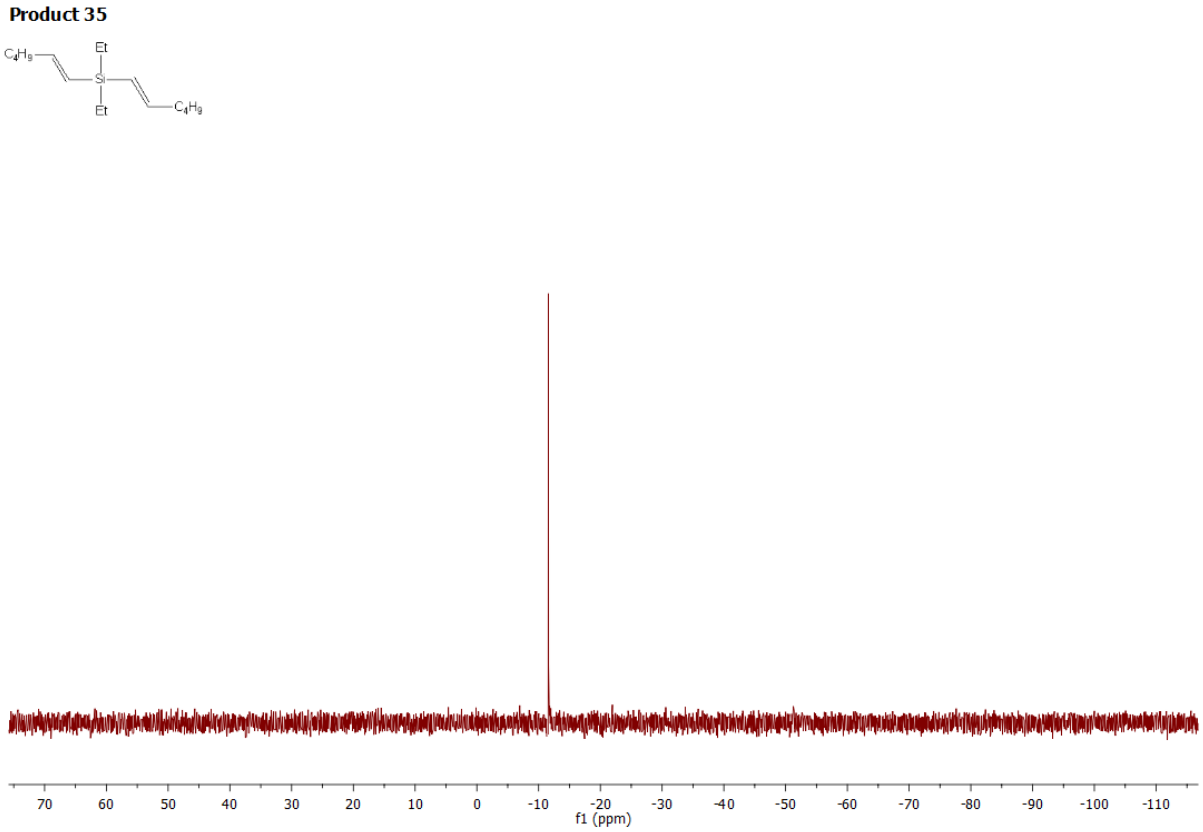



**Figure S99.** $^{29}$Si NMR (79 MHz, $CDCl_3$) of product **35**

*Analytical data of product 35:*

Isolated yield: 89% (245 mg); $^{1}$H NMR ($CDCl_3$, δ, ppm): 0.59 (q, 4H, $J_{HH}$ = 7.8 Hz, $CH_3CH_2$-), 0.90 (t, 6H, $J_{HH}$ = 5.9 Hz, -$(CH_2)_3CH_3$), 0.94 (t, 6H, $J_{HH}$ = 6.6 Hz, $CH_3CH_2$-), 1.28 – 1.42 (m, 8H, -$(CH_2)_3CH_3$), 2.10 – 2.18 (m, 4H, -$(CH_2)_3CH_3$), 5.57 (dt, 2H, $J_{HH}$ = 18.6, 1.5 Hz, =CHSi), 6.07 (dt, 2H, $J_{HH}$ = 18.6, 6.3 Hz, =$CHCH_2$); $^{13}$C NMR ($CDCl_3$, δ, ppm): 4.52 ($CH_3$), 7.37 ($CH_2$), 13.94, 22.21, 30.99, 36.69, 125.42, 149.37; $^{29}$Si NMR ($CDCl_3$, δ, ppm): -11.58; MS: *m/z* (rel. intensity): 59 (11), 85 (14), 111 (15), 139 (11), 195 (32), 223 (100), 224 (19), 252 (1, $M^+$); anal. calcd. for $C_{16}H_{32}Si$ (%): C: 76.10, H: 12.77; found: C: 76.22, H: 12.82.

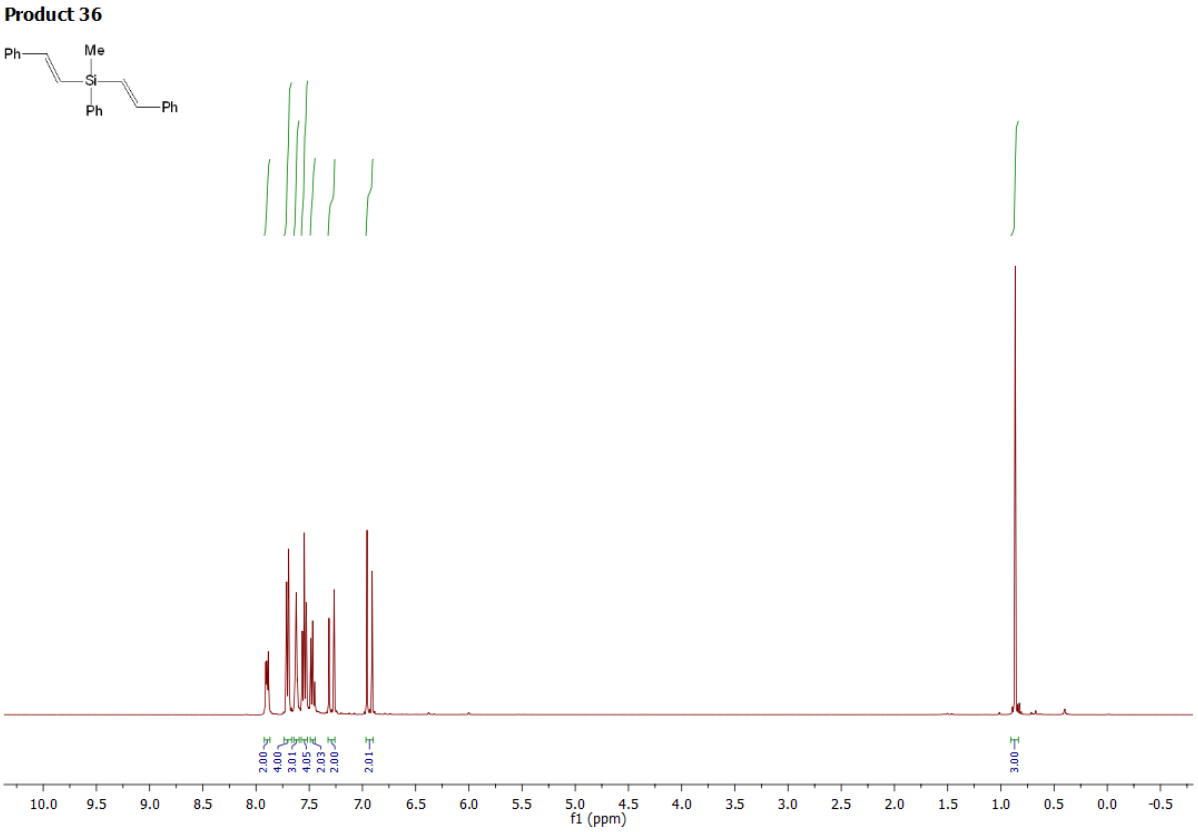



**Figure S100.** $^{1}$H NMR (400 MHz, $CDCl_3$) of product **36**

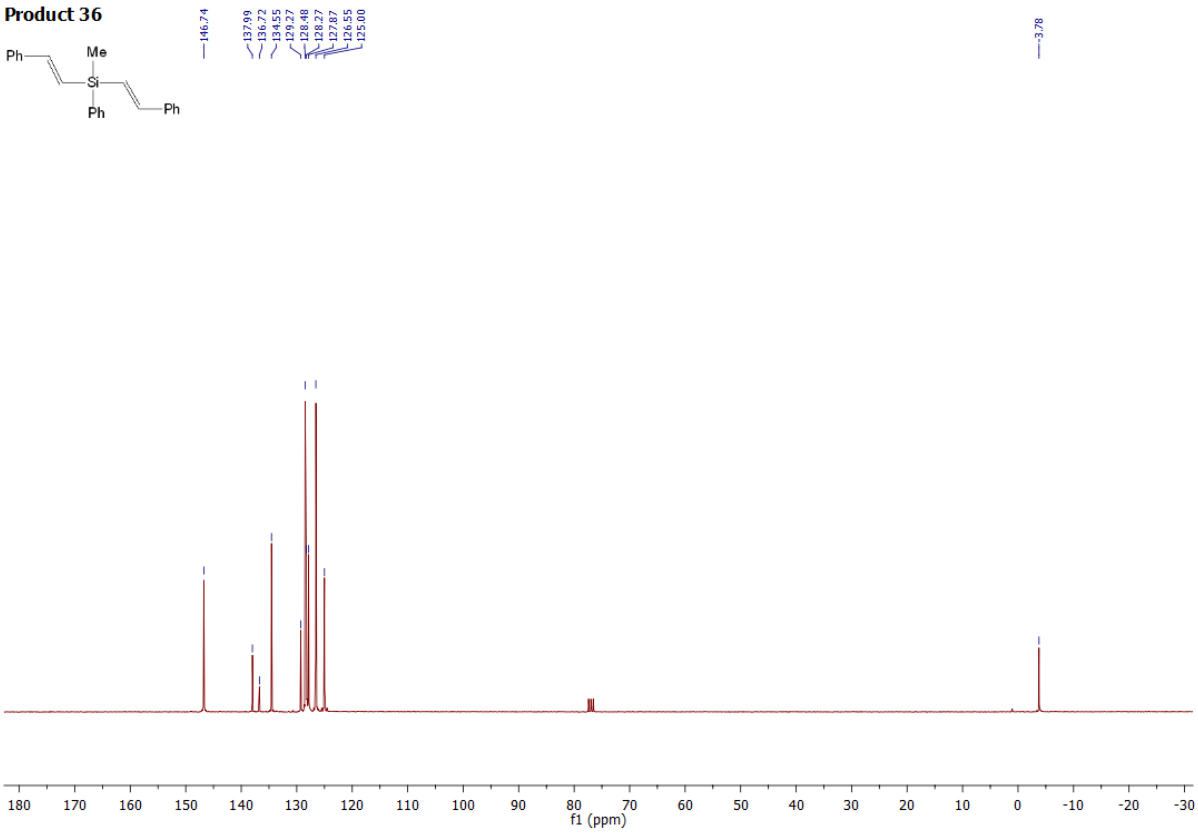



**Figure S101.** $^{13}$C NMR (100 MHz, $CDCl_3$) of product **36**

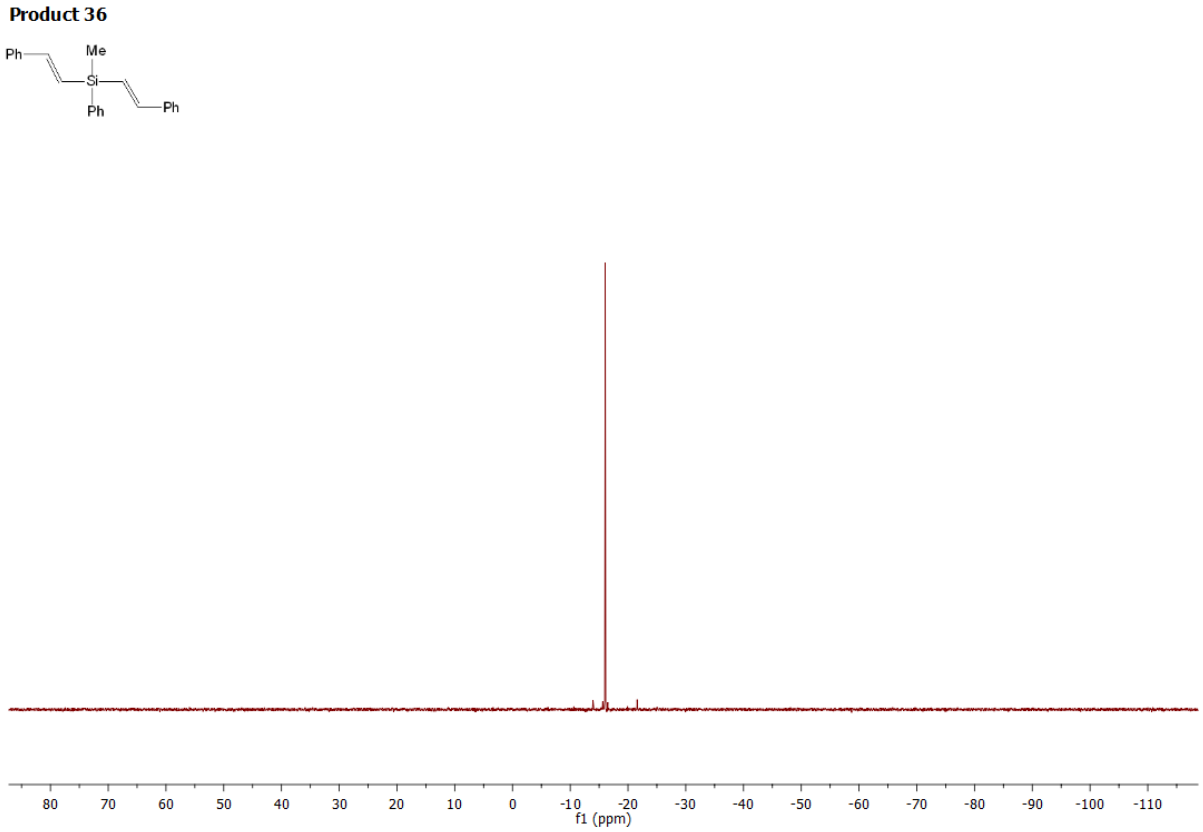



**Figure S102.** $^{29}$Si NMR (79 MHz, $CDCl_3$) of product **36**

*Analytical data of product 36:*

Isolated yield: 90% (322.9 mg); $^{1}$H NMR ($CDCl_3$, δ, ppm): 0.86 (s, 3H, C*H*$_3$), 6.93 (d, 2H, $J_{HH}$ = 19.1 Hz, =C*H*Si), 7.29 (d, 2H, $J_{HH}$ = 19.1 Hz, =C*H*), 7.44 – 7.49 (m, 2H, Ph), 7.52 – 7.57 (m, 4H, Ph), 7.59 – 7.64 (m, 3H, Ph), 7.67 – 7.74 (m, 4H, Ph), 7.87 – 7.92 (m, 2H, Ph); $^{13}$C NMR ($CDCl_3$, δ, ppm): -3.78 (*C*H$_3$), 125.00, 126.55, 127.87, 128.27, 128.48, 129.27, 134.55, 136.72, 137.99, 146.74; $^{29}$Si NMR ($CDCl_3$, δ, ppm): -16.06; MS: *m/z* (rel. intensity): 51 (15), 102 (17), 103 (26), 105 (21), 121 (23), 145 (48), 146 (21), 218 (16), 219 (19), 220 (26), 222 (41), 223 (59), 224 (25), 233 (16), 245 (16), 246 (19), 247 (20), 248 (66), 249 (68), 250 (30), 311 (98), 312 (25), 325 (28), 326 (100, $M^+$).

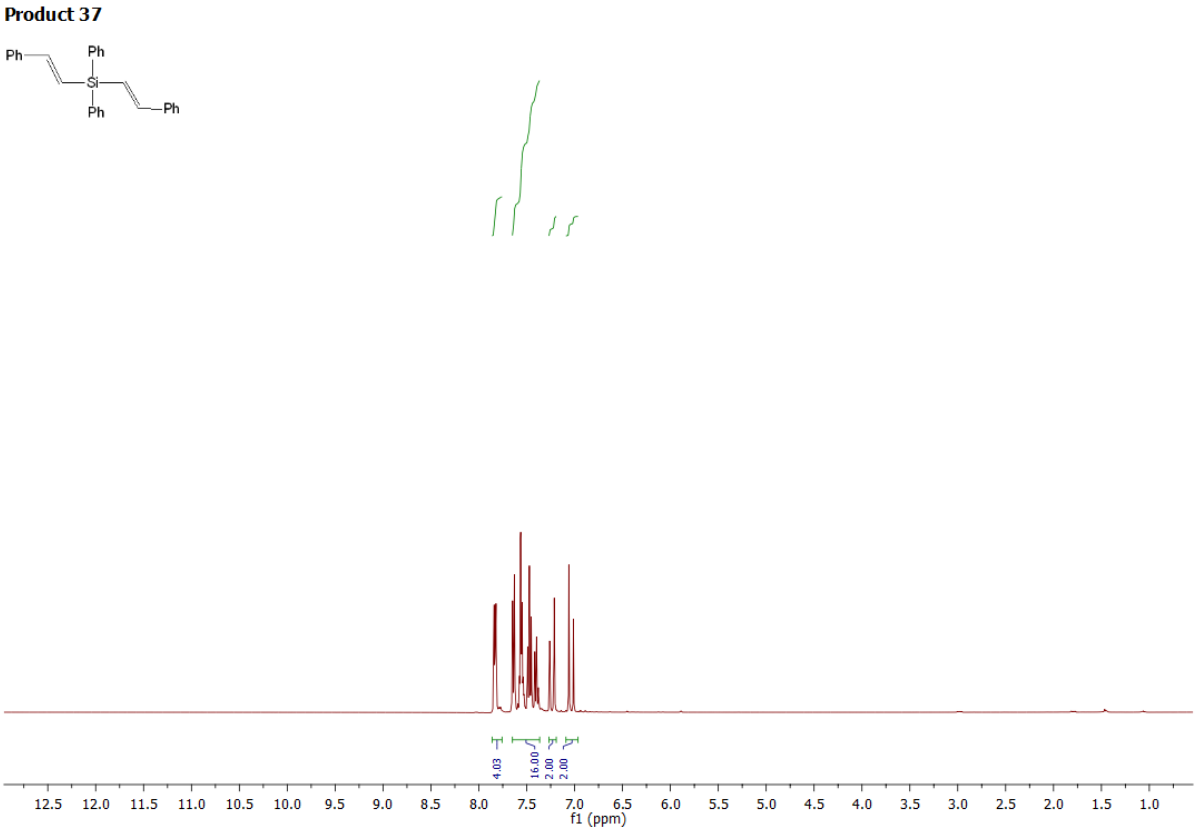



**Figure S103.** $^{1}$H NMR (400 MHz, $CDCl_3$) of product **37**

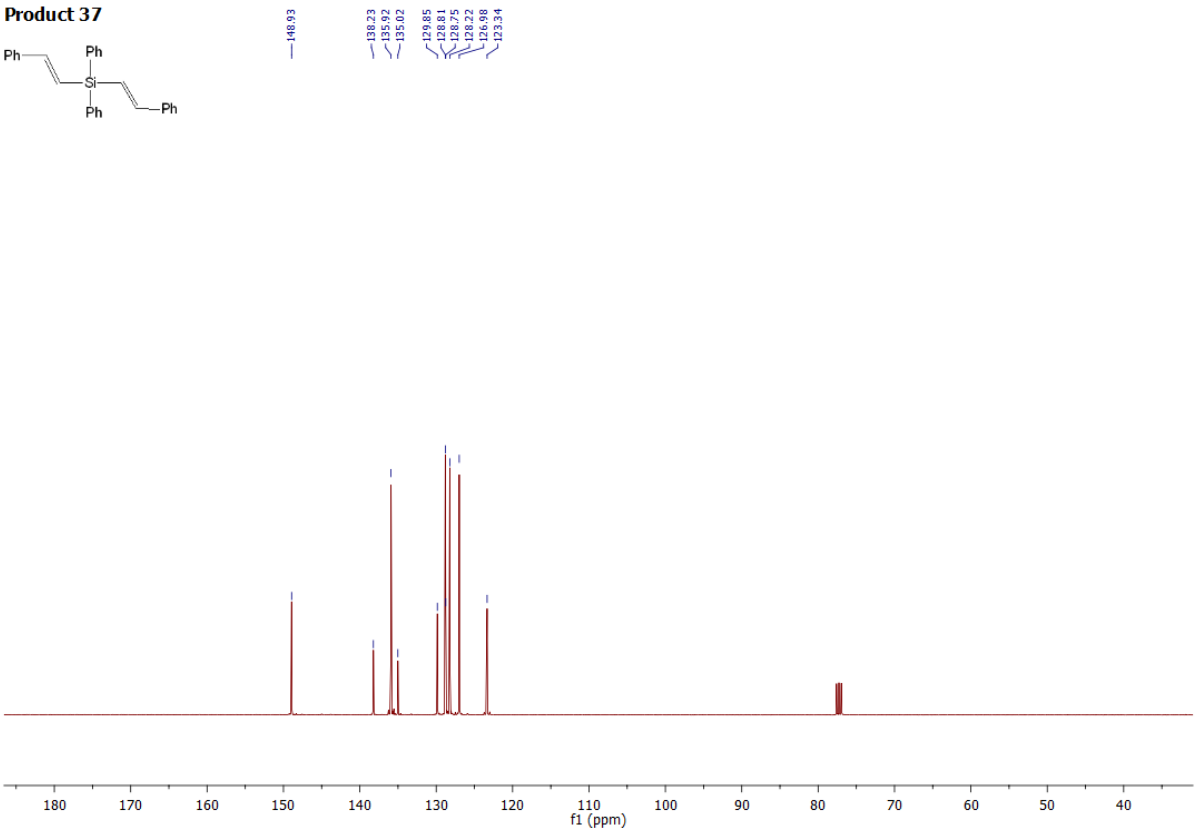



**Figure S104.** $^{13}$C NMR (100 MHz, $CDCl_3$) of product **37**

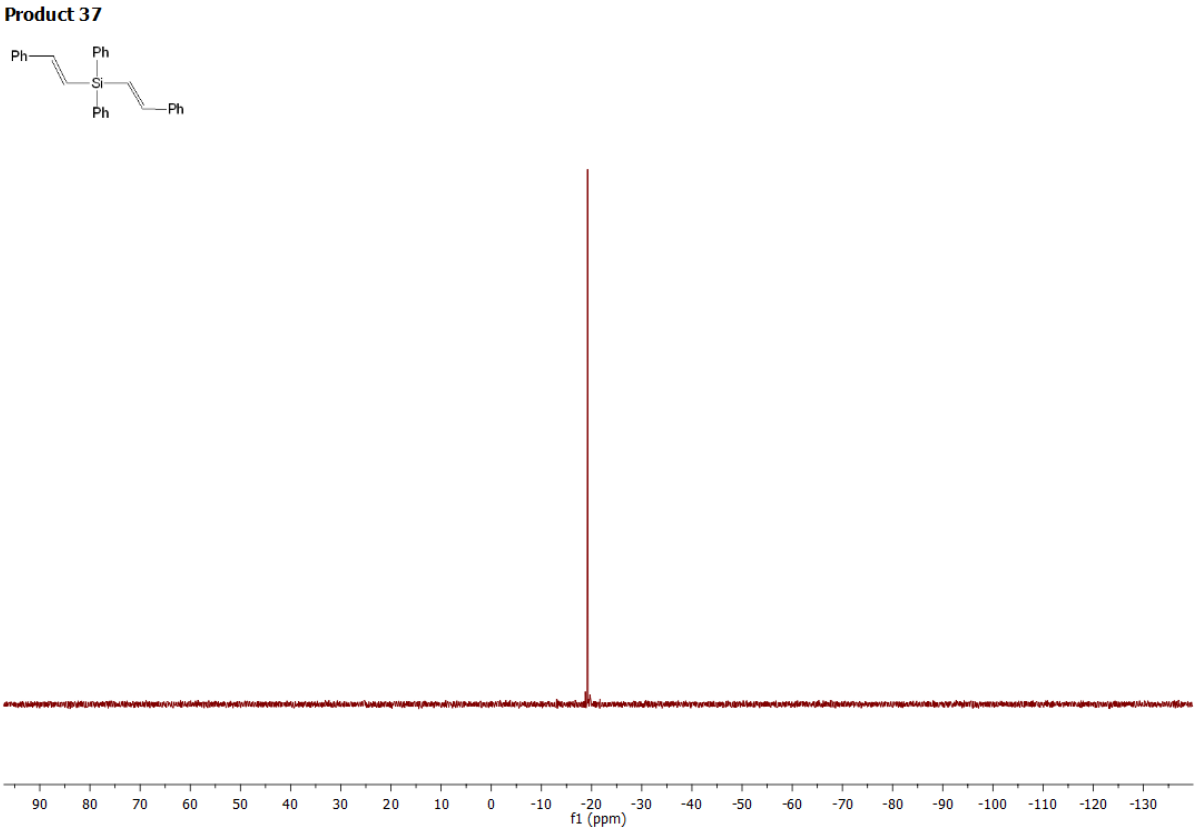



**Figure S105.** $^{29}$Si NMR (79 MHz, $CDCl_3$) of product **37**

*Analytical data of product 37:*

Isolated yield: 92% (392.8 mg); $^{1}$H NMR ($CDCl_3$, δ, ppm): 7.04 (d, 2H, $J_{HH}$ = 19.1 Hz, =C*H*Si), 7.04 (d, 2H, $J_{HH}$ = 19.1 Hz, =C*H*), 7.36 – 7.68 (m, 16H, Ph), 7.79 – 7.86 (m, 4H, Ph); $^{13}$C NMR ($CDCl_3$, δ, ppm): 123.34, 126.98, 128.22, 128.75, 128.81, 129.85, 135.02, 135.92, 138.23, 148.93; $^{29}$Si NMR ($CDCl_3$, δ, ppm): -19.19; MS: *m/z* (rel. intensity): 51 (13), 77 (13), 105 (37), 130 (36), 131 (13), 177 (13), 179 (16), 180 (33), 182 (14), 205 (41), 206 (39), 218 (15), 219 (45), 281 (14), 295 (100), 296 (29), 308 (44), 309 (21), 388 (4, $M^+$).

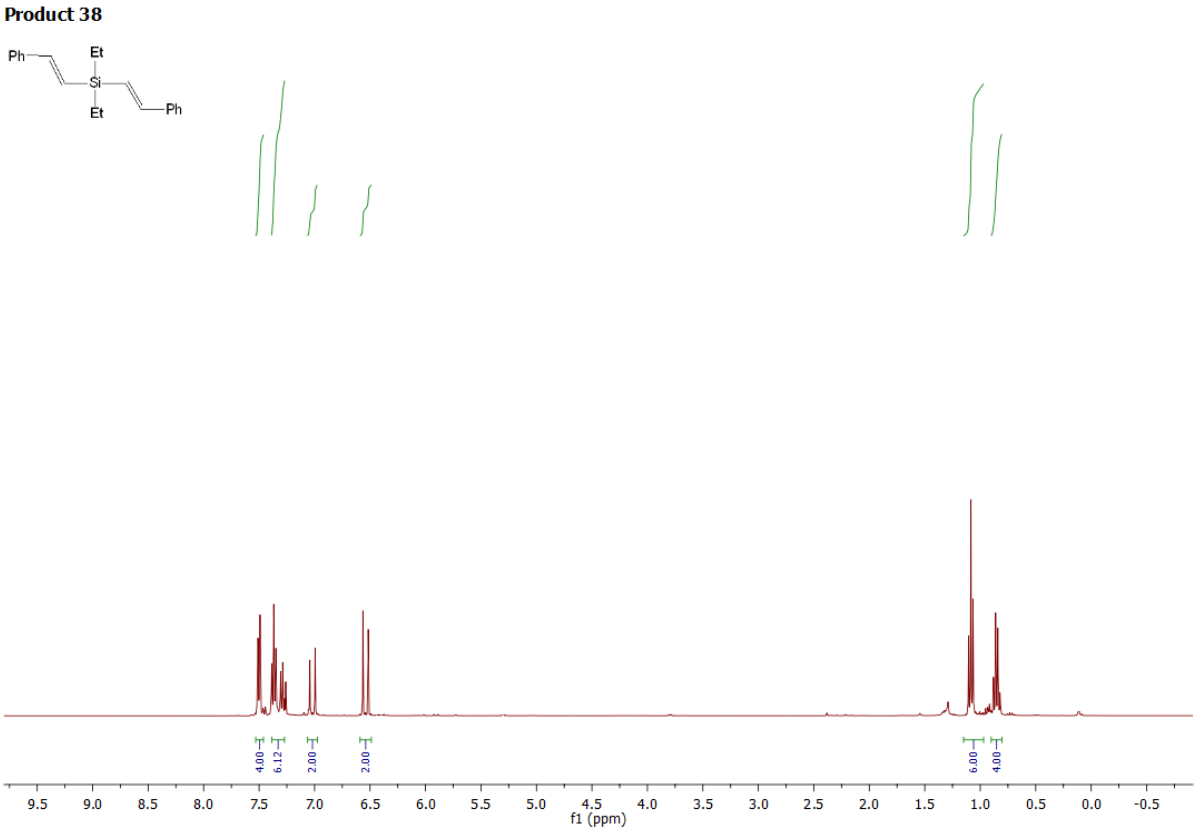



**Figure S106.** $^{1}$H NMR (400 MHz, $CDCl_3$) of product **38**

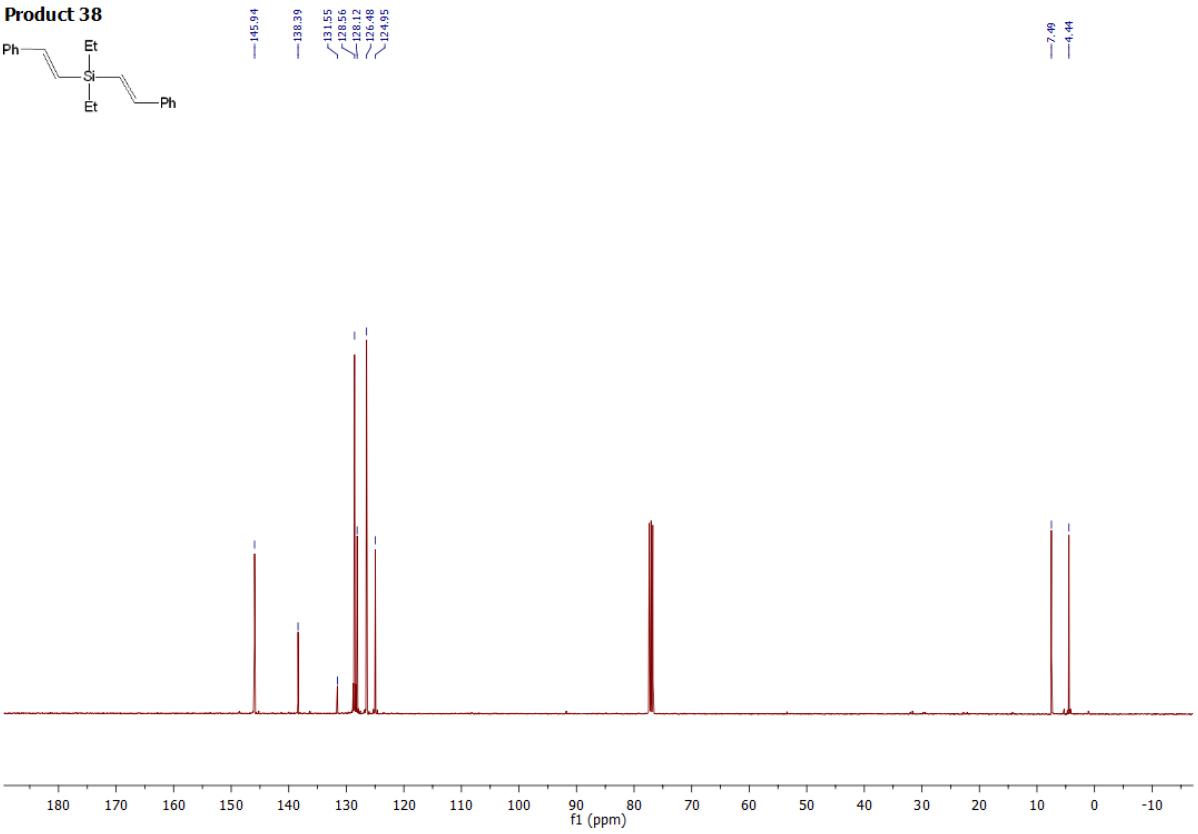
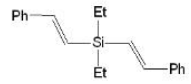



**Figure S107.** $^{13}$C NMR (100 MHz, $CDCl_3$) of product **38**

**Product 38**



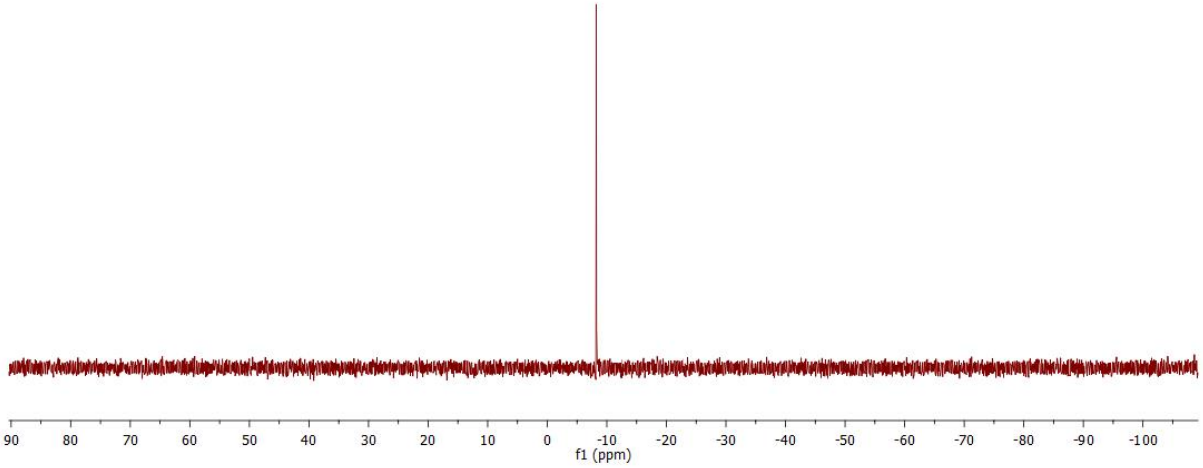




**Figure S108.** $^{29}$Si NMR (79 MHz, $CDCl_3$) of product **38**

*Analytical data of product 38:*

Isolated yield: 92% (295.7 mg); $^{1}$H NMR ($CDCl_3$, δ, ppm): 0.80-0.90 (m, 4H, $CH_3CH_2$-), 1.04-1.12 (m, 6H, $CH_3CH_2$ ), 6.54 (d, 2H, $J_{HH}$ = 19.2 Hz, =C*H*Si), 7.02 (d, 2H, $J_{HH}$ = 19.2 Hz, =C*H*), 7.26 – 7.40 (m, 6H, Ph), 7.47 – 7.52 (m, 4H, Ph); $^{13}$C NMR ($CDCl_3$, δ, ppm): 4.44 ($CH_3$), 7.49 ($CH_2$), 124.95, 126.48, 128.12, 128.56, 131.55, 138.39, 145.94; $^{29}$Si NMR ($CDCl_3$, δ, ppm): -8.24; MS: *m/z* (rel. intensity): 103 (10), 105 (14), 131 (27), 159 (17), 189 (12), 235 (19), 263 (100), 264 (24), 292 (28, $M^+$); anal. calcd. for $C_{20}H_{24}Si$ (%): C: 82.13, H: 8.27; found: C: 82.35, H: 8.42.

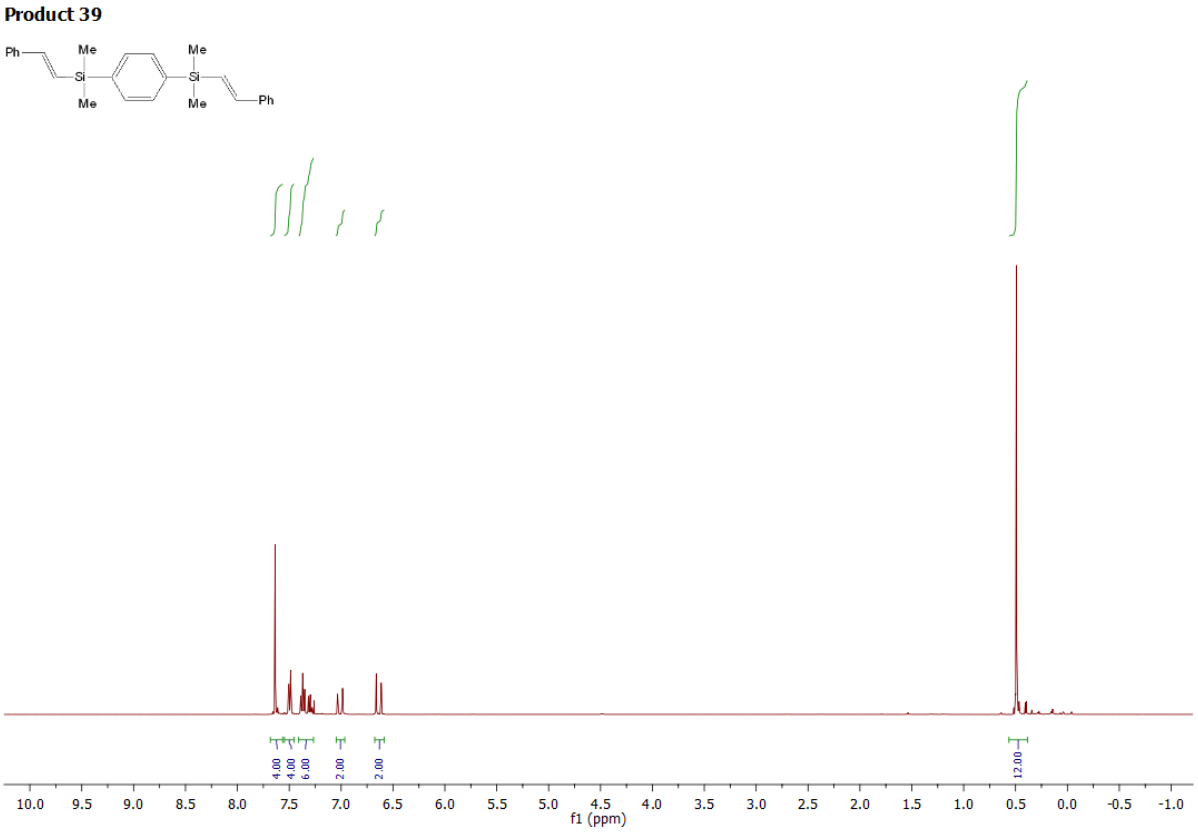



**Figure S109.** $^{1}$H NMR (400 MHz, $CDCl_3$) of product **39**

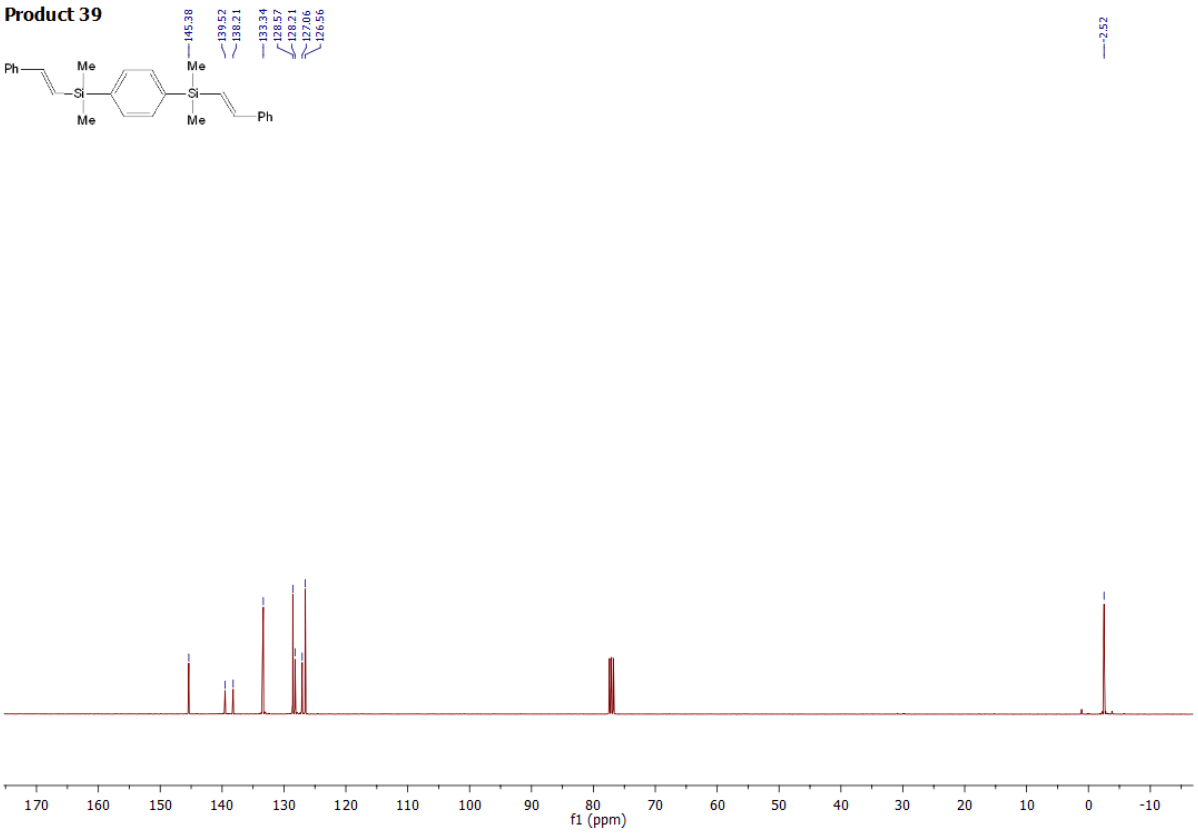



**Figure S110.** $^{13}$C NMR (100 MHz, $CDCl_3$) of product **39**

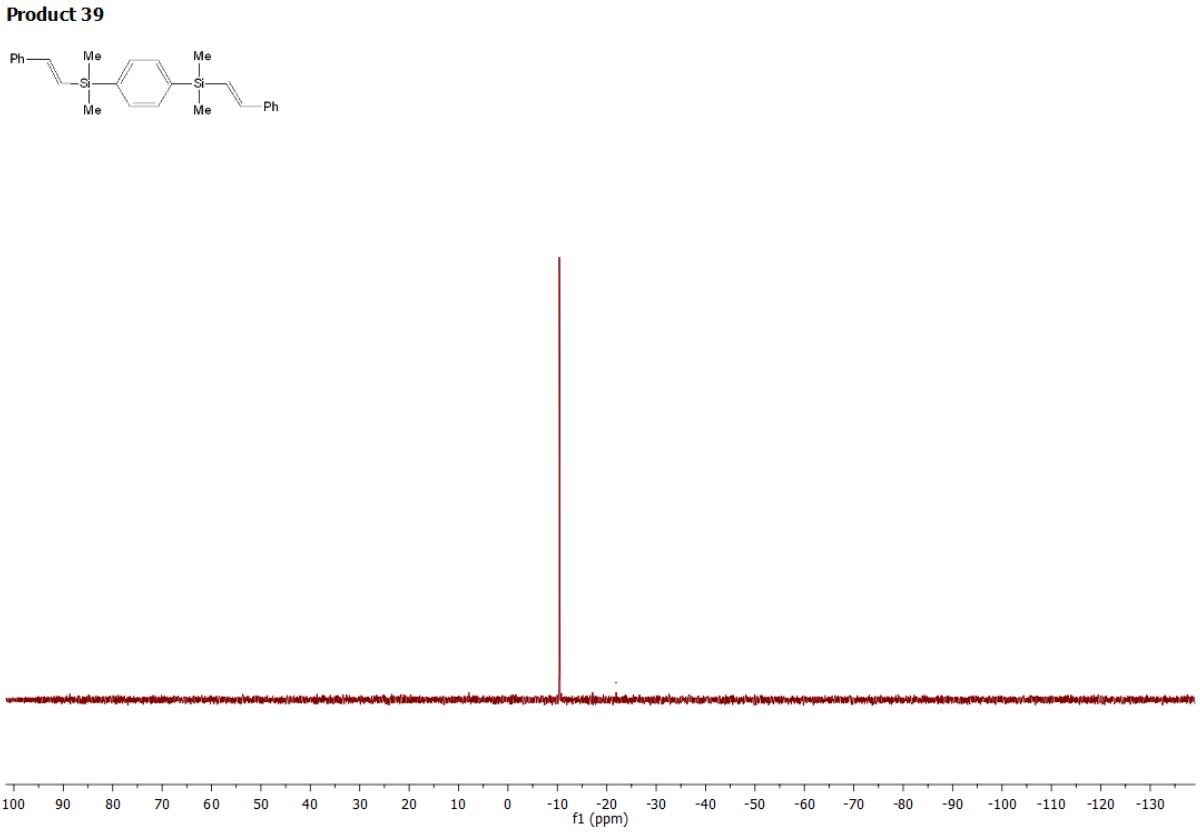



**Figure S111.** $^{29}$Si NMR (79 MHz, $CDCl_3$) of product **39**

*Analytical data of product 39:*

Isolated yield: 92% (403 mg); $^{1}$H NMR ($CDCl_3$, δ, ppm): 0.49 (overlapping s, 12H, C*H*$_3$), 6.64 (d, 2H, $J_{HH}$ = 19.1 Hz, =C*H*Si), 7.01 (d, 2H, $J_{HH}$ = 19.1 Hz, =C*H*), 7.27 – 7.41 (m, 6H, Ph), 7.45 – 7.55 (m, 4H, Ph), 7.57 – 7.68 (m, 4H, Ph); $^{13}$C NMR ($CDCl_3$, δ, ppm): -2.52 (*C*H$_3$), 126.56, 127.06, 128.21, 128.57, 133.34, 138.21, 139.52, 145.38; $^{29}$Si NMR ($CDCl_3$, δ, ppm): -10.47; MS: *m/z* (rel. intensity): 135 (20), 145 (19), 161 (17), 237 (15), 294 (17), 296 (40), 297 (18), 340 (23), 383 (31), 398 (100, $M^+$).

## 1.3. NMR spectra and analytical data of unsymmetrical *E*,*E*-divinylsilanes

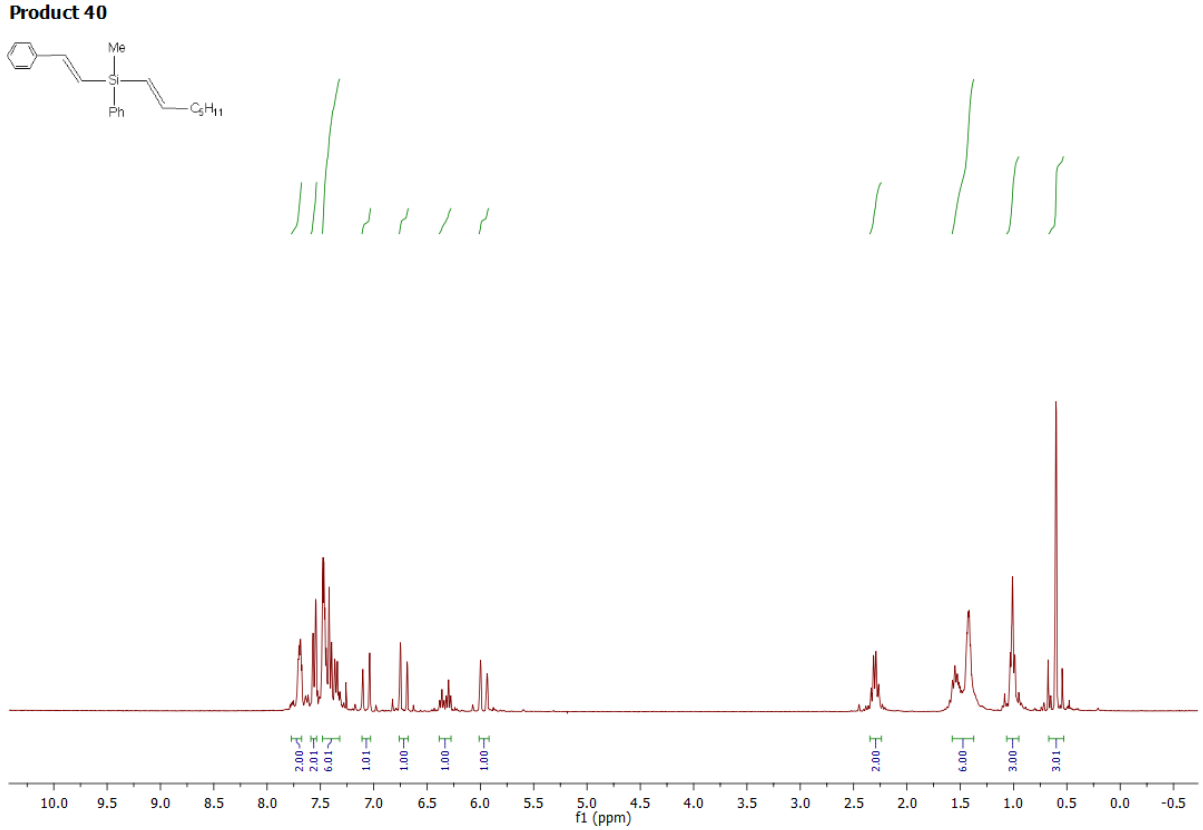



**Figure S112.** $^{1}$H NMR (400 MHz, $CDCl_3$) of product **40**

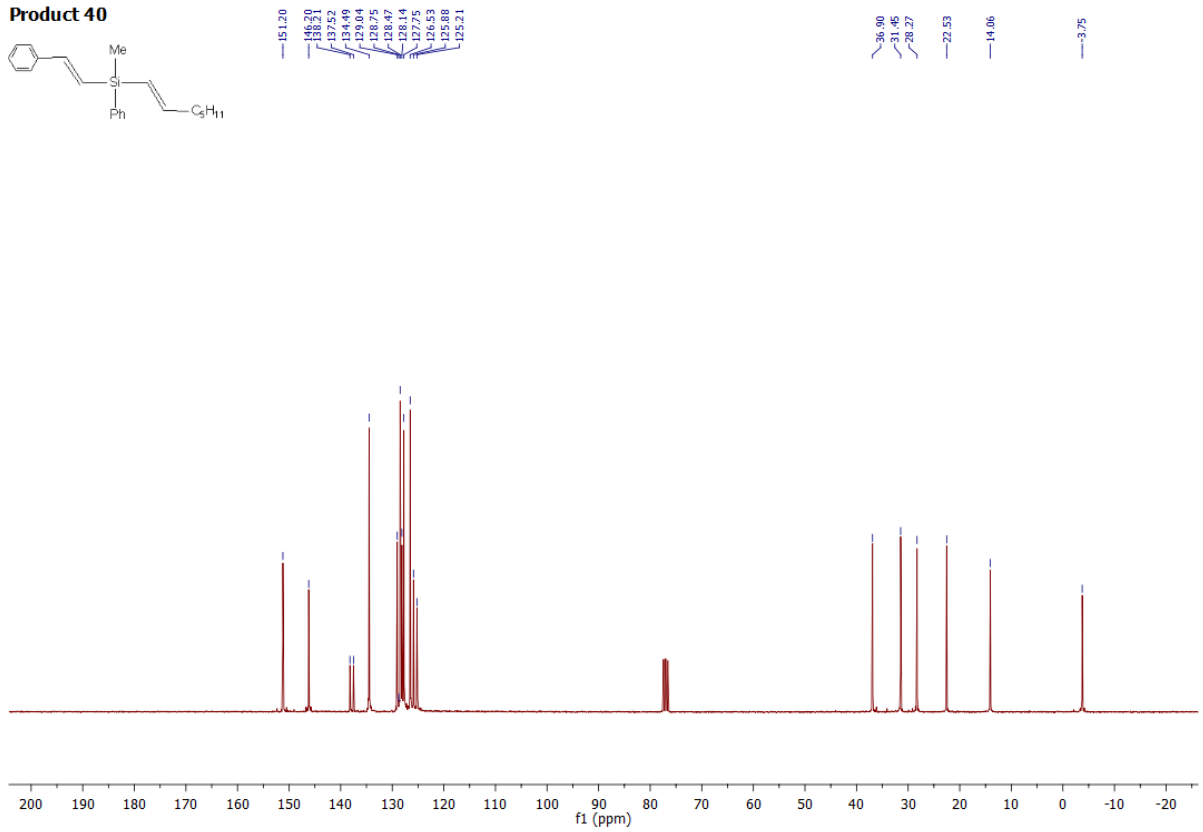



**Figure S113.** $^{13}$C NMR (100 MHz, $CDCl_3$) of product **40**

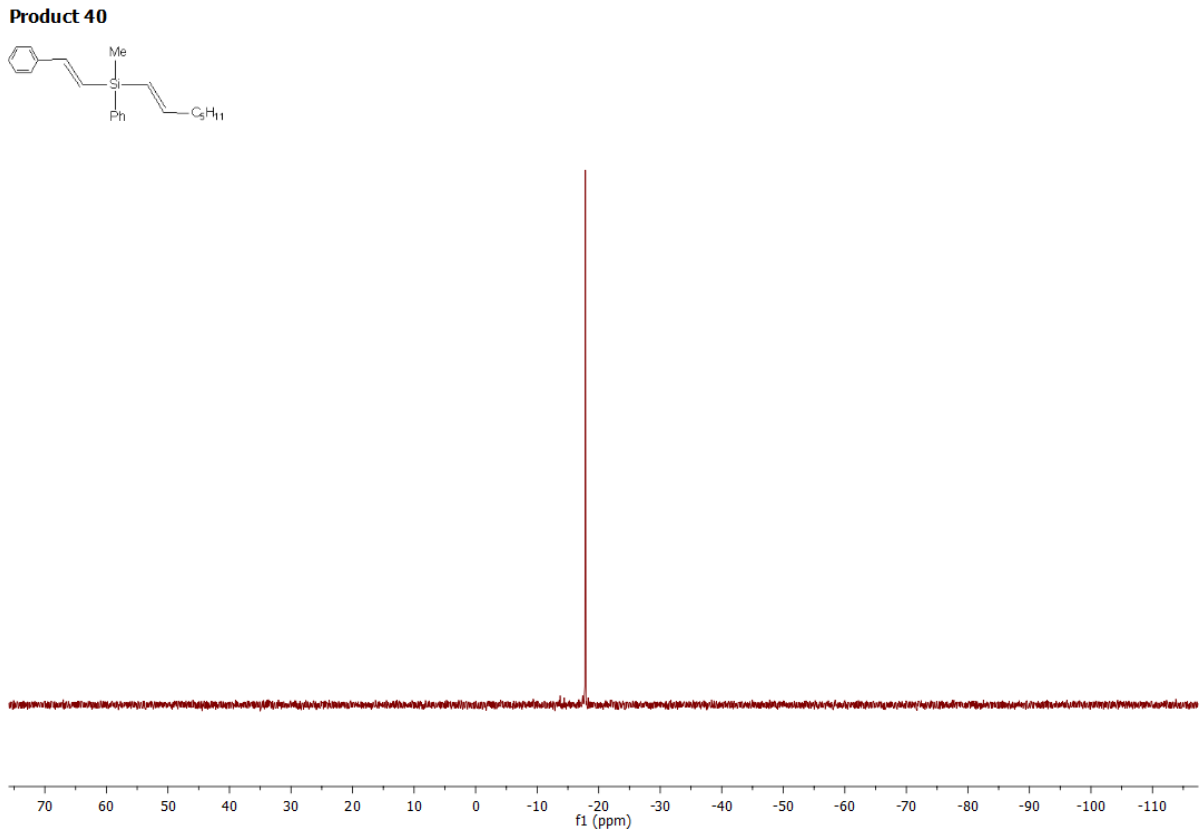



**Figure S114.** $^{29}$Si NMR (79 MHz, $CDCl_3$) of product **40**

*Analytical data of product 40:*

Isolated yield: 90% (317 mg); $^{1}$H NMR ($CDCl_3$, δ, ppm): 0.60 (s, 3H, C*H*$_3$), 1.01 (t, 3H, $J_{HH}$ = 6.4 Hz, -(CH$_2$)$_4$C*H*$_3$), 1.37 – 1.88 (m, 6H, -(C*H*$_2$)$_4$CH$_3$), 2.24 – 2.35 (m, 2H, =CHC*H*$_2$), 5.97 (d, 1H, $J_{HH}$ = 18.5 Hz, =C*H*Si), 6.33 (dt, 1H, $J_{HH}$ = 18.5, 6.2 Hz, =C*H*CH$_2$), 6.72 (d, 1H, $J_{HH}$ = 19.1 Hz, =C*H*Si), 7.07 (d, 1H, $J_{HH}$ = 19.1 Hz, =C*H*CH$_2$), 7.34 – 7.48 (m, 6H, Ph), 7.52 – 7.59 (m, 2H, Ph), 7.66 – 7.73 (m, 2H, Ph); $^{13}$C NMR ($CDCl_3$, δ, ppm): -3.75 (*C*H$_3$), 14.06, 22.53, 28.27, 31.45, 36.90, 125.21, 125.88, 126.53, 127.75, 128.14, 128.47, 128.75, 129.04, 134.49, 137.52, 138.21, 146.20, 151.20; $^{29}$Si NMR ($CDCl_3$, δ, ppm): -17.84; MS: *m/z* (rel. intensity): 105 (23), 121 (42), 131 (18), 145 (38), 146 (16), 158 (20), 159 (21), 216 (15), 217 (31), 221 (16), 222 (19), 223 (21), 242 (29), 243 (100), 244 (48), 245 (18), 249 (23), 250 (48), 305 (69), 306 (18), 320 (39, M$^+$); anal. calcd. for $C_{22}H_{28}Si$ (%): C: 82.43, H: 8.80; found: C: 82.52, H: 8.88.

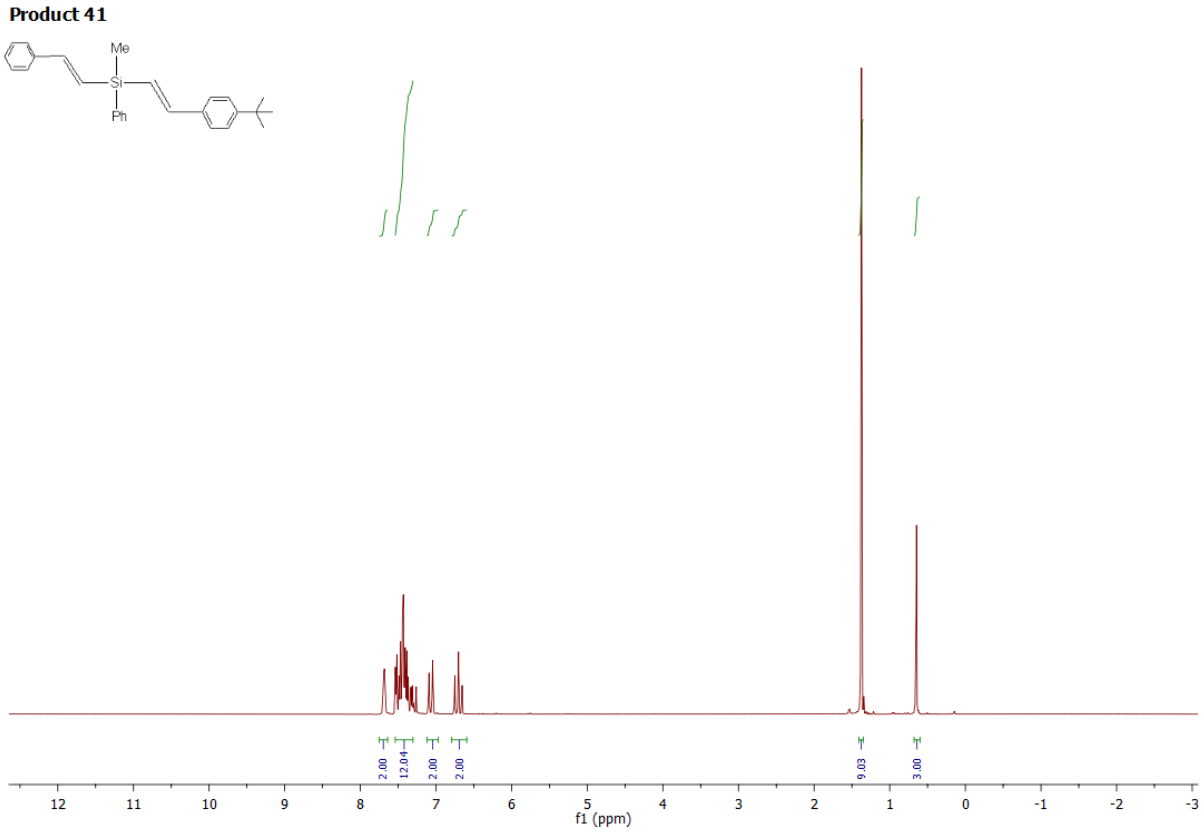



**Figure S115.** $^{1}$H NMR (400 MHz, $CDCl_3$) of product **41**

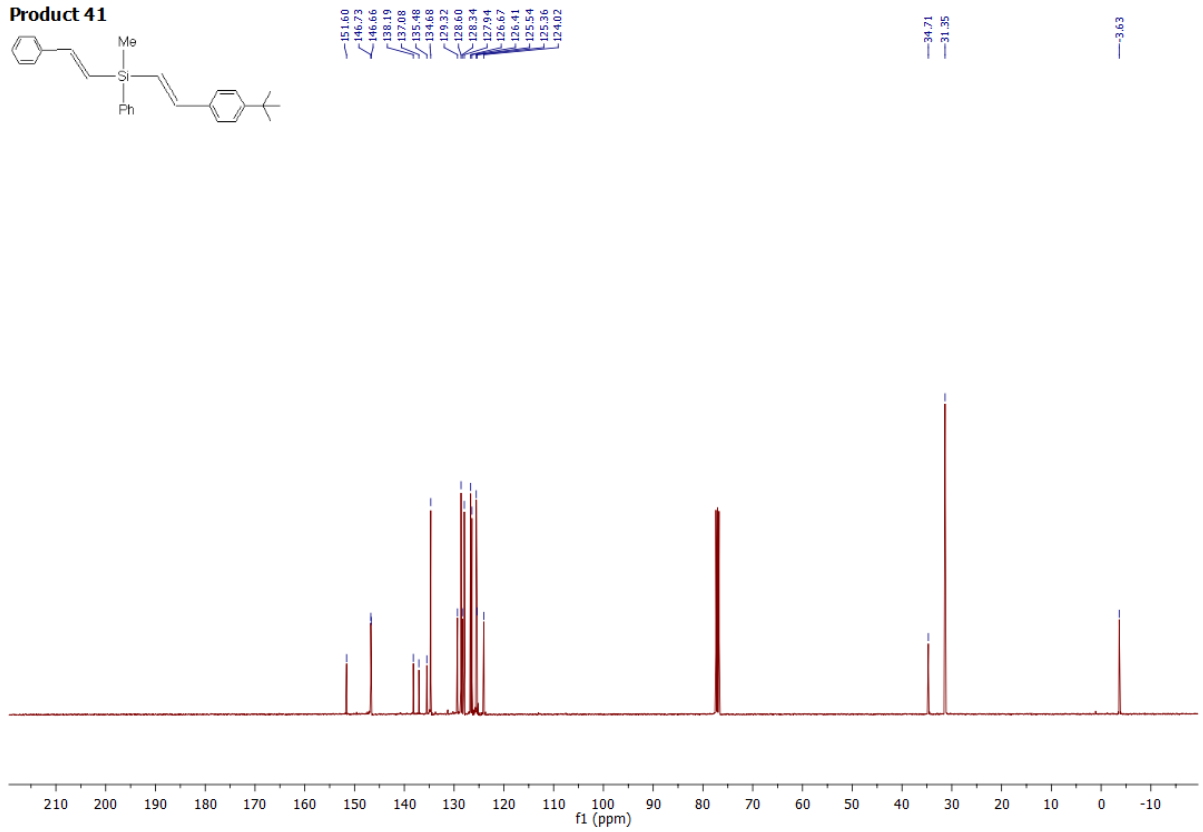



**Figure S116.** $^{13}$C NMR (100 MHz, $CDCl_3$) of product **41**

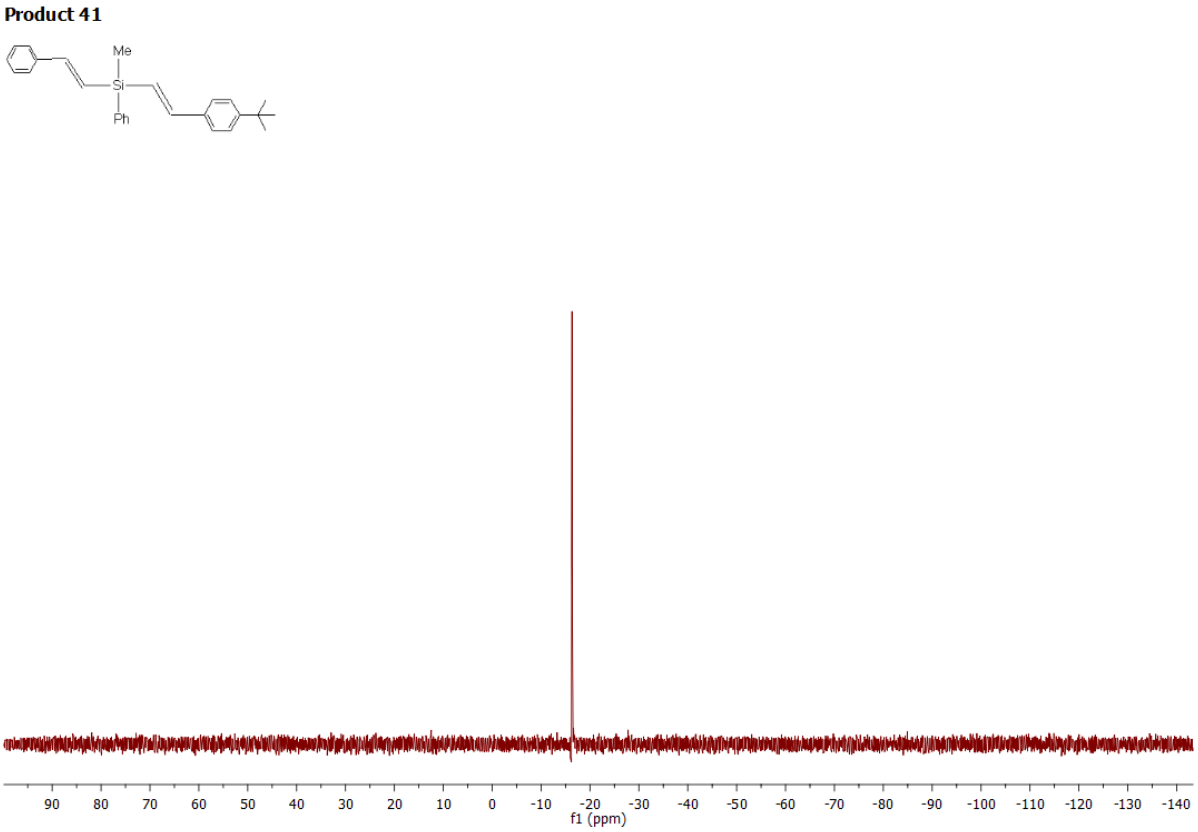



**Figure S117.** $^{29}$Si NMR (79 MHz, $CDCl_3$) of product **41**

*Analytical data of product 41:*

Isolated yield: 90% (378.4 mg); $^{1}$H NMR ($CDCl_3$, δ, ppm): 0.65 (s, 3H, C$H_3$), 1.37 (s, 9H, C(C$H_3$)$_3$), 6.70 (dt, 2H, $J_{HH}$ = 19.3, 1.6 Hz, =C$H$CH$_2$), 7.07 (d, 2H, $J_{HH}$ = 19.1 Hz, =C$H$Si), 7.30 – 7.54 (m, 12H, Ph and –C$_6H_4$-), 7.64 – 7.75 (m, 2H, Ph); $^{13}$C NMR ($CDCl_3$, δ, ppm): -3.63 (*C*H$_3$), 31.35 (C(*C*H$_3$)$_3$), 34.71 (*C*(CH$_3$)$_3$), 124.02, 125.36, 125.54, 126.41, 126.67, 127.94, 128.34, 128.60, 129.32, 134.68, 135.48, 137.08, 138.19, 146.70 (d, *J* = 6.9 Hz), 151.60; $^{29}$Si NMR ($CDCl_3$, δ, ppm): -16.32; MS: *m/z* (rel. intensity): 57 (50), 187 (30), 222 (21), 243 (25), 244 (29), 245 (26), 246 (31), 247 (37), 248 (34), 249 (30), 250 (33), 254 (20), 262 (22), 264 (47), 265 (30), 276 (20), 277 (24), 279 (34), 280 (47), 281 (31), 288 (23), 289 (56), 290 (46), 292 (83), 293 (42), 294 (20), 302 (18), 303 (27), 304 (77), 305 (100), 306 (59), 307 (24), 326 (30), 327 (23), 362 (24), 366 (31), 367 (96), 368 (58), 370 (27), 380 (23), 382 (24, $M^+$); anal. calcd. for $C_{27}H_{30}Si$ (%): C: 84.76, H: 7.90; found: C: 84.85, H: 8.02.

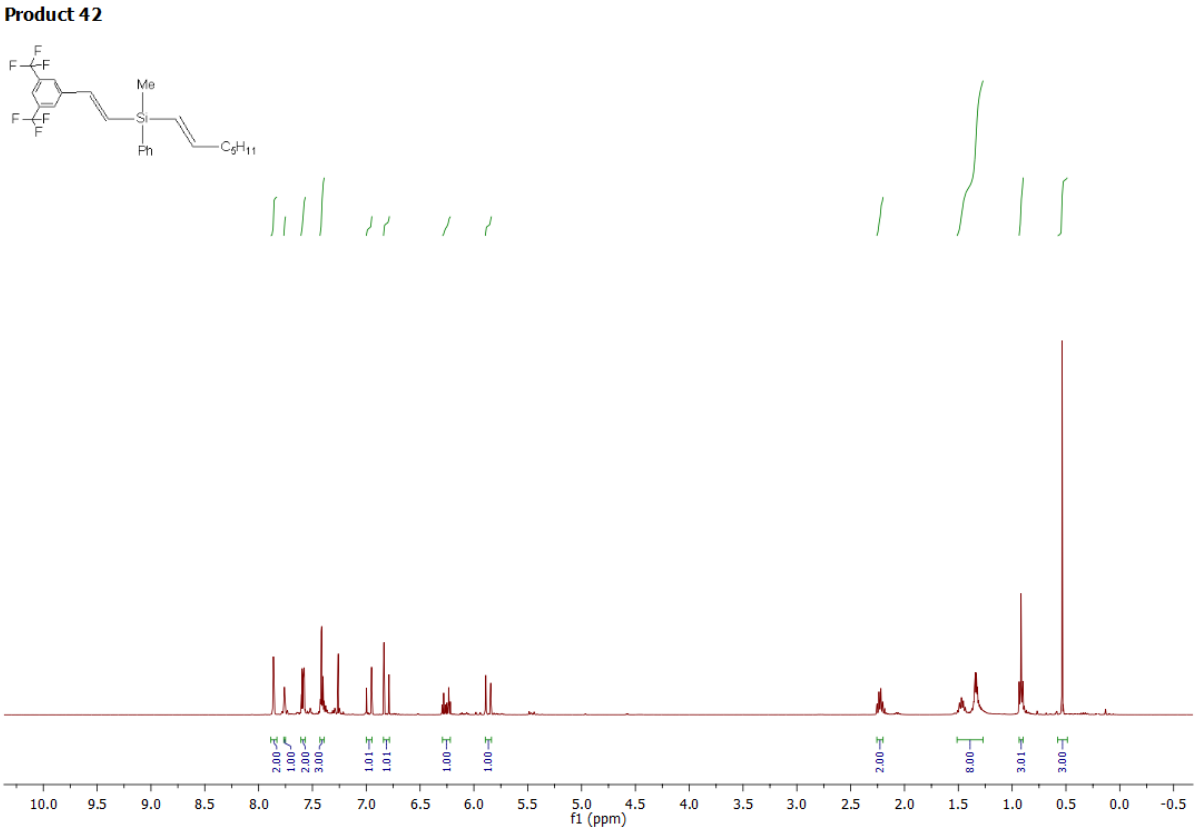



**Figure S118.** $^{1}$H NMR (400 MHz, $CDCl_3$) of product **42**

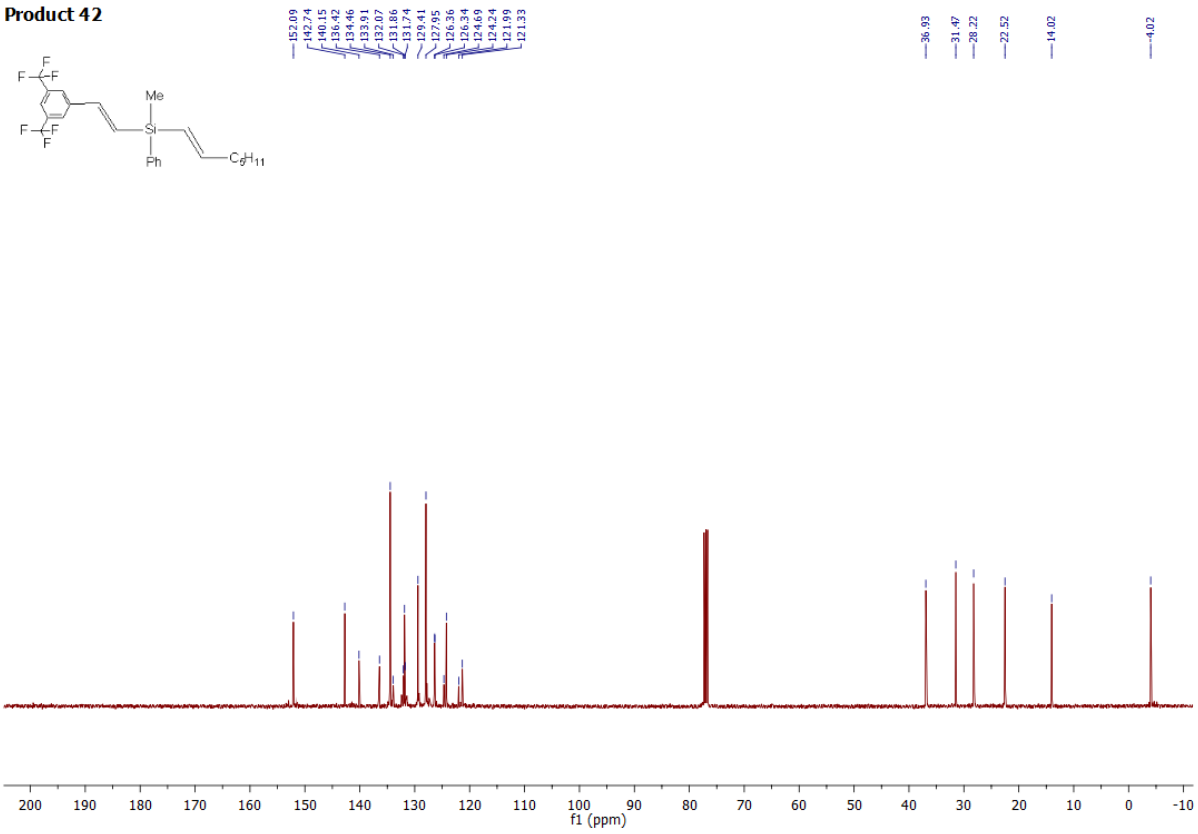
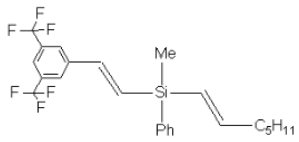



**Figure S119.** $^{13}$C NMR (100 MHz, $CDCl_3$) of product **42**

**Product 42**



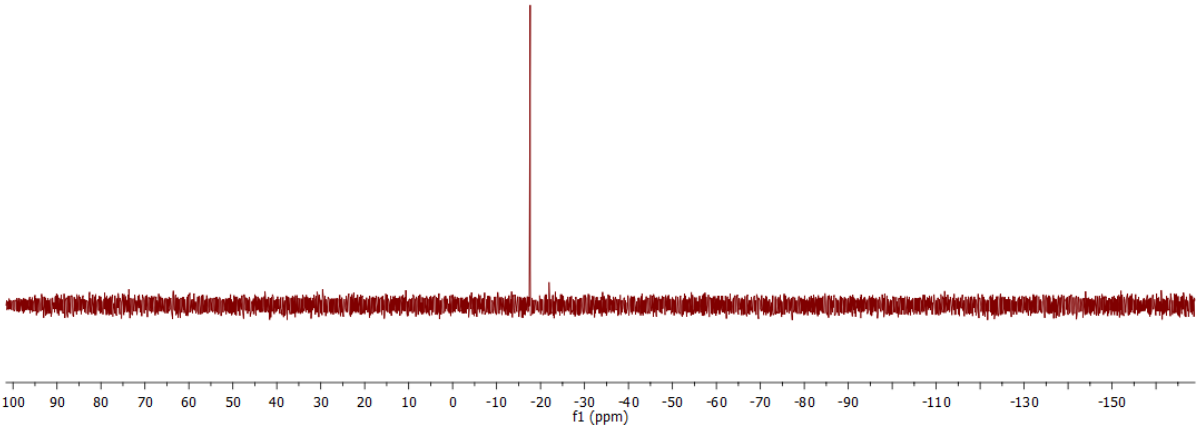




**Figure S120.** $^{29}$Si NMR (79 MHz, $CDCl_3$) of product **42**

*Analytical data of product 42:*

Isolated yield: 88% (441.6 mg); $^{1}$H NMR ($CDCl_3$, δ, ppm): 0.54 (s, 3H, C*H*$_3$), 0.89 – 0.94 (m, 3H, -(CH$_2$)$_4$C*H*$_3$), 1.27 – 1.51 (m, 8H, -(C*H*$_2$)$_4$CH$_3$), 2.20 – 2.26 (m, 2H, =CHC*H*$_2$), 5.87 (dt, 1H, $J_{HH}$ = 18.6, 1.5 Hz, =C*H*Si), 6.26 (dt, 1H, $J_{HH}$ = 18.6, 6.3 Hz, =C*H*CH$_2$), 6.81 (d, 1H, $J_{HH}$ = 19.1 Hz, =C*H*Si), 6.97 (d, 1H, $J_{HH}$ = 19.1 Hz, =C*H*CH$_2$), 7.39 – 7.43 (m, 3H, Ph), 7.57 – 7.61 (m, 2H, Ph), 7.75 – 7.77 (m, 1H, -C$_6$*H*$_3$-), 7.83 – 7.89 (m, 2H, -C$_6$*H*$_3$-); $^{13}$C NMR ($CDCl_3$, δ, ppm): -4.02 (*C*H$_3$), 14.02, 22.52, 28.22, 31.47, 36.93, 121.33 (m, *C*F$_3$), 121.99, 124.24, 124.69, 126.34, 126.36, 127.95, 129.41, 131.74, 131.86, 132.07, 133.91, 134.46, 136.42, 140.15, 142.74, 152.09; $^{29}$Si NMR ($CDCl_3$, δ, ppm):-17.56; MS: *m/z* (rel. intensity): 227 (15), 228 (12), 277 (12), 278 (43), 279 (17), 298 (100), 299 (30), 341 (28), 437 (15), 441 (8), 456 (3, M$^+$); anal. calcd. for $C_{24}H_{26}F_6Si$(%): C: 63.14, H: 5.74; found: C: 63.30, H: 5.88.

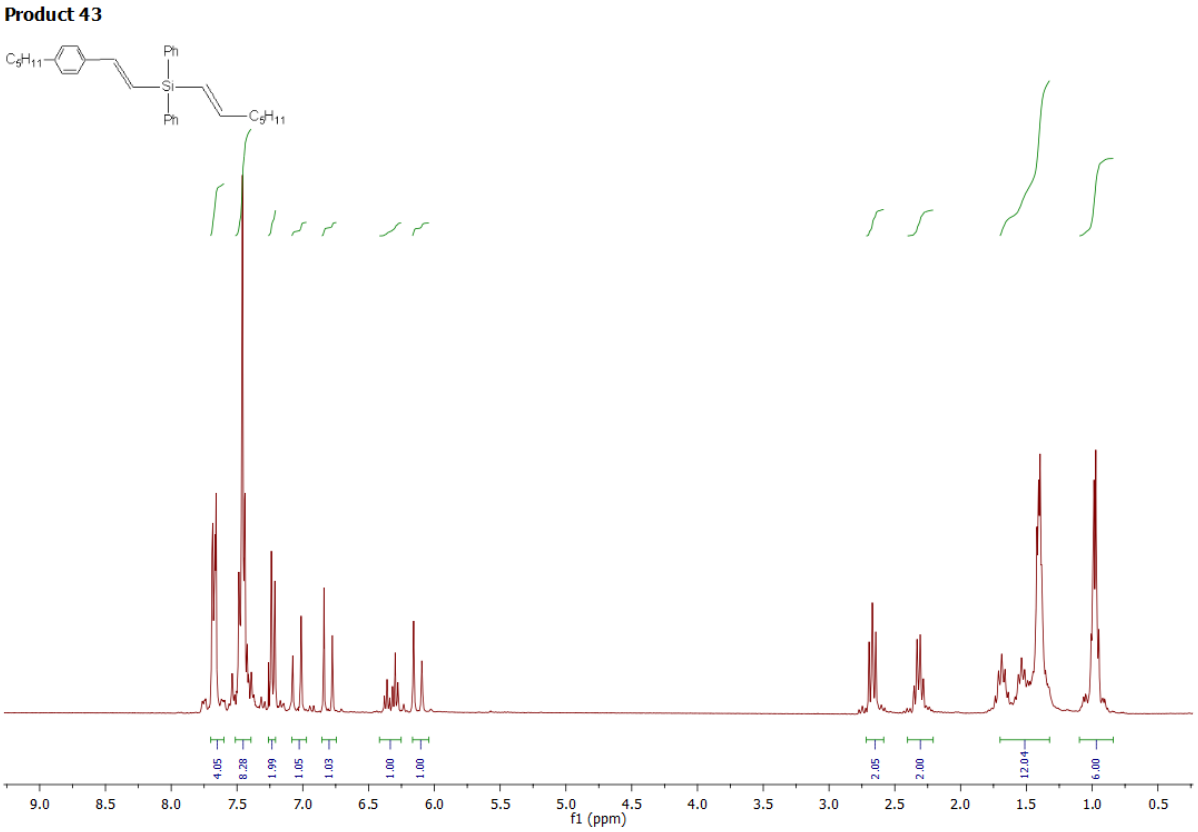



**Figure S121.** $^{1}H$ NMR (400 MHz, $CDCl_3$) of product **43**

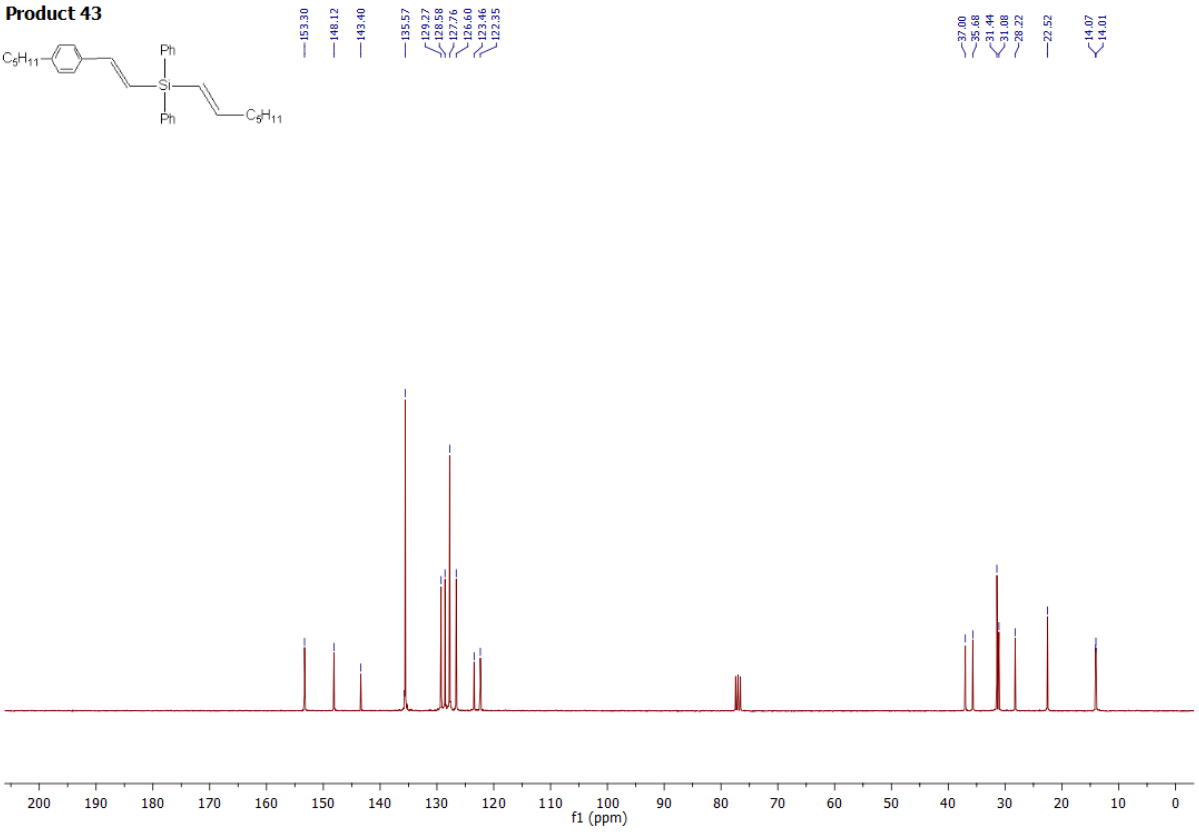



**Figure S122.** $^{13}C$ NMR (100 MHz, $CDCl_3$) of product **43**

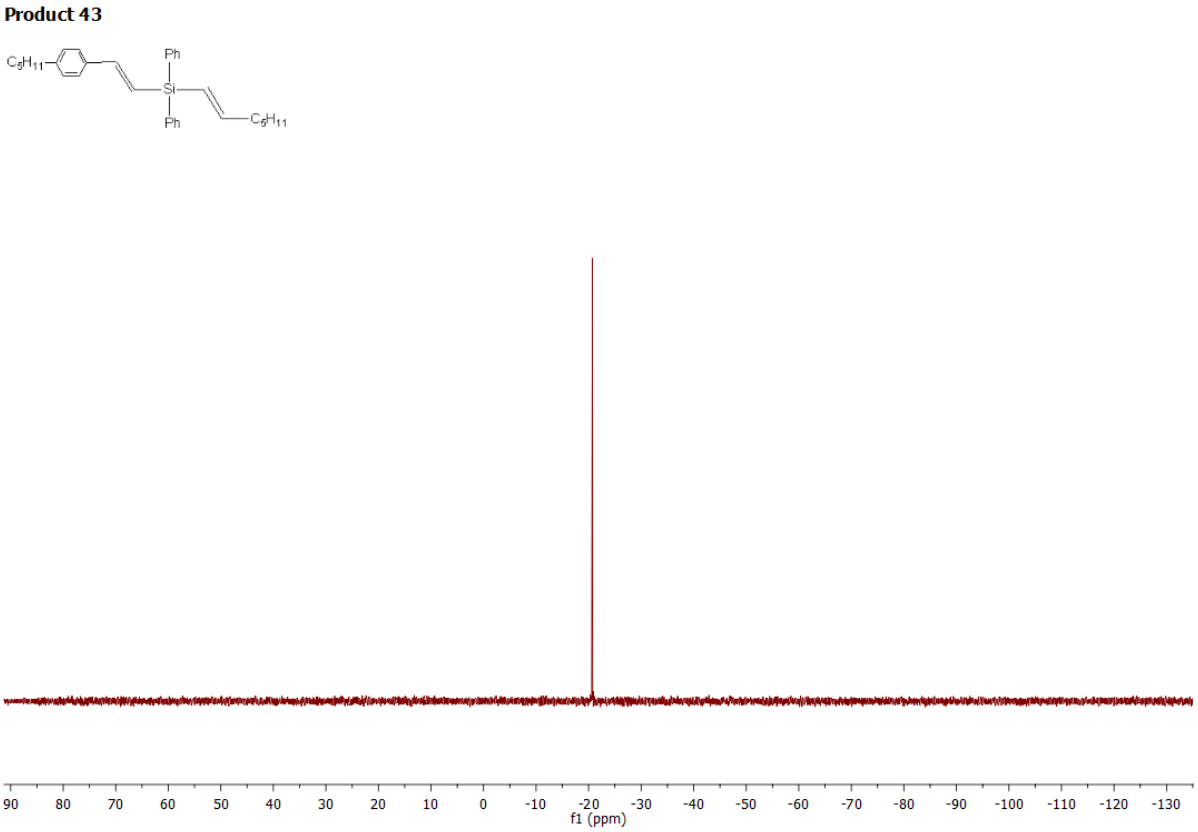



**Figure S123.** $^{29}$Si NMR (79 MHz, $CDCl_3$) of product **43**

*Analytical data of product 43:*

Isolated yield: 92% (457.7 mg); $^{1}$H NMR ($CDCl_3$, δ, ppm): 0.89 – 1.08 (m, 6H, -$(CH_2)_4CH_3$), 1.36 – 1.72 (m, 12H, -$(CH_2)_4CH_3$), 2.26 – 2.40 (m, 2H, -$(CH_2)_4CH_3$), 2.61 – 2.72 (m, 2H, =$CHCH_2$), 6.13 (d, 1H, $J_{HH}$ = 18.5 Hz, =$CH$Si), 6.33 (dt, 1H, $J_{HH}$ = 18.5, 6.1 Hz, =$CHCH_2$), 6.81 (d, 1H, $J_{HH}$ = 19.1 Hz, =$CH$Si), 7.04 (d, 1H, $J_{HH}$ = 19.1 Hz, =$CHCH_2$), 7.23 (d, 2H, $J_{HH}$ = 8.0 Hz, -$C_6H_4$-) 7.42 – 7.50 (m, 8H, Ph and -$C_6H_4$-), 7.63 – 7.71 (m, 4H, Ph); $^{13}$C NMR ($CDCl_3$, δ, ppm): 14.01, 14.04, 22.52, 28.22, 31.08, 31.44, 35.68, 37.00, 122.35, 123.46, 126.60, 127.76, 128.58, 129.27, 135.57, 143.40, 148.12, 153.30; $^{29}$Si NMR ($CDCl_3$, δ, ppm): -20.67; MS: *m/z* (rel. intensity): 105 (15), 253 (31), 276 (18), 278 (60), 279 (40), 280 (28), 291 (24), 304 (17), 355 (35), 356 (22), 375 (20), 376 (78), 377 (42), 378 (16), 381 (47), 382 (28), 452 (100, $M^+$); anal. calcd. for $C_{32}H_{40}Si$ (%): C: 84.89, H: 8.91; found: C: 84.95, H: 8.99.

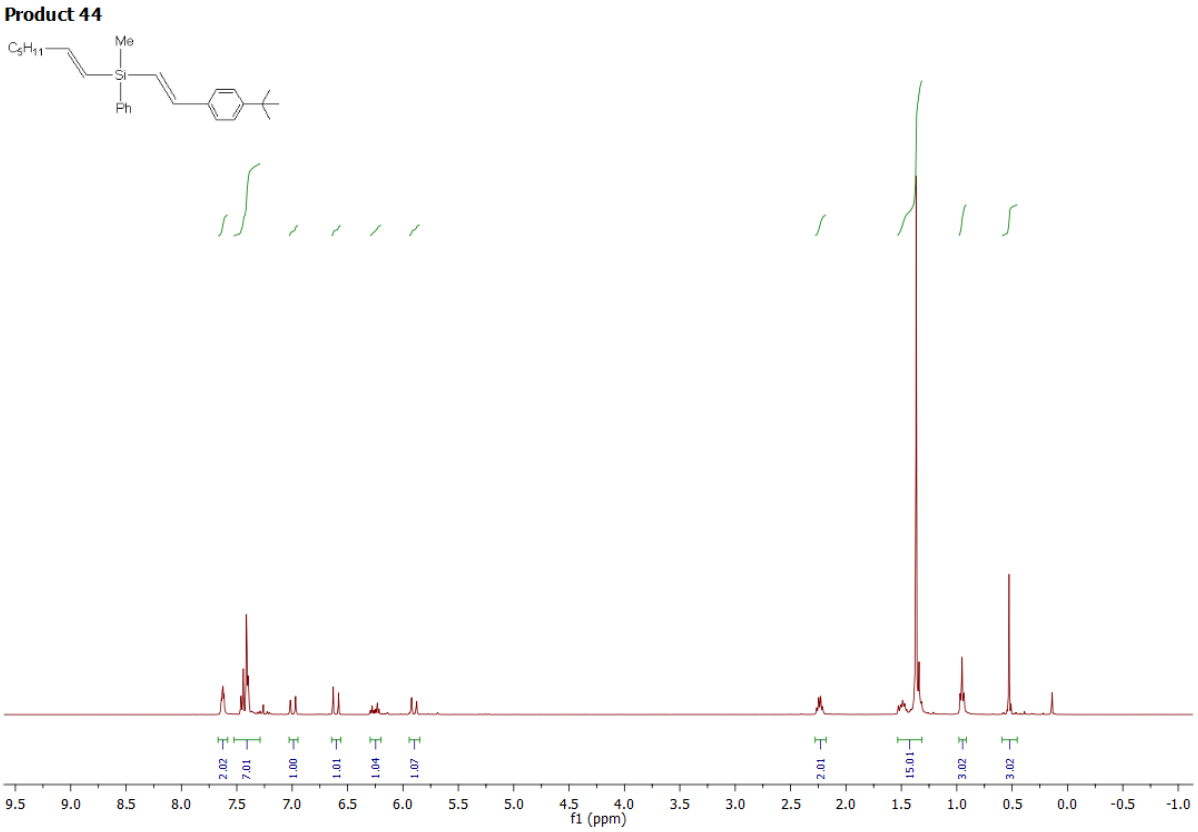



**Figure S124.** $^{1}$H NMR (400 MHz, $CDCl_3$) of product **44**

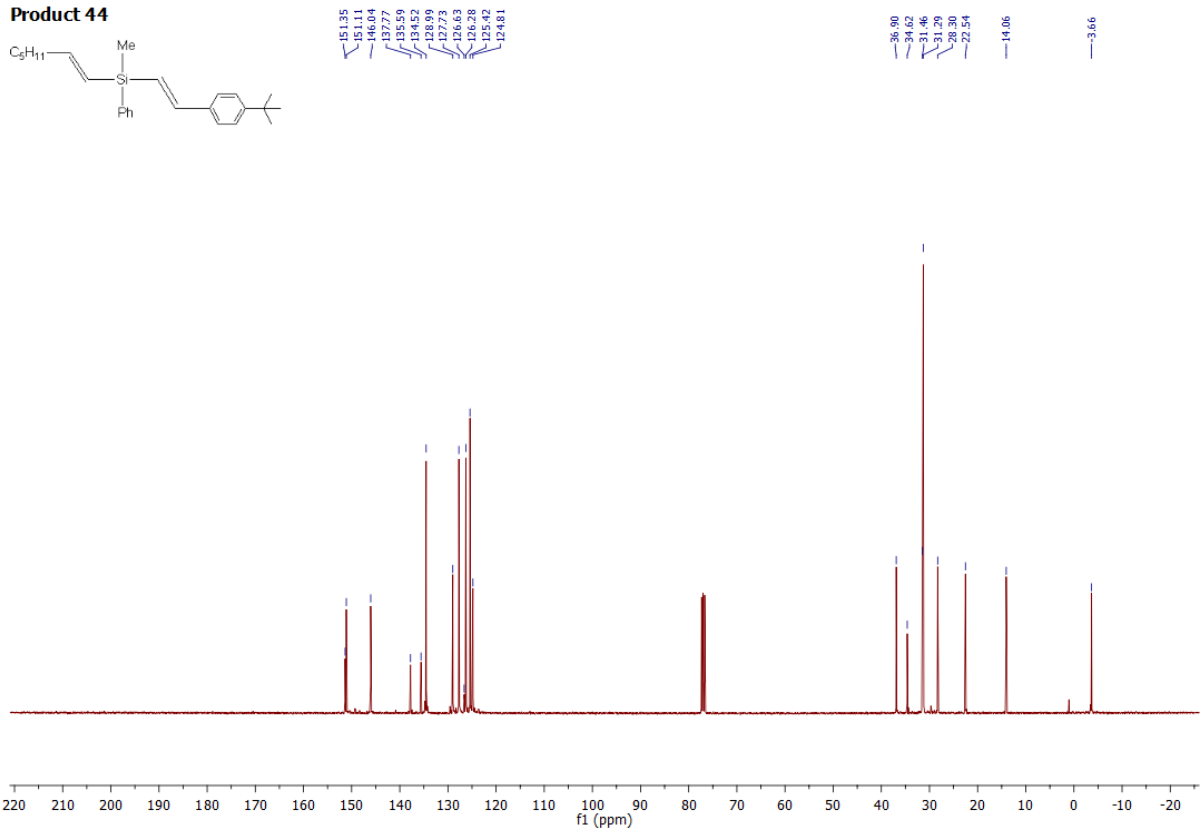
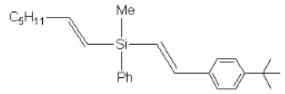



**Figure S125.** $^{13}$C NMR (100 MHz, $CDCl_3$) of product **44**

**Product 44**



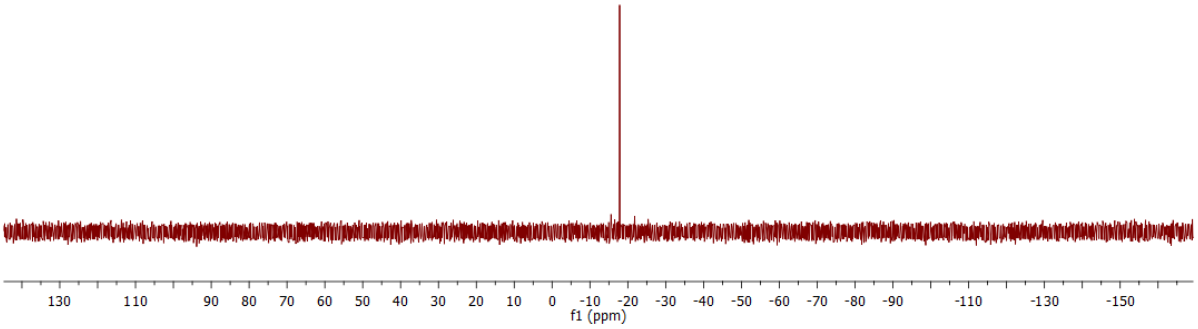




**Figure S126.** $^{29}$Si NMR (79 MHz, $CDCl_3$) of product **44**

*Analytical data of product 44:*

Isolated yield: 90% (372.5 mg); $^{1}$H NMR ($CDCl_3$, δ, ppm): 0.53 (s, 3H, C*H*$_3$), 0.95 (t, 3H, $J_{HH}$ = 7.0 Hz, -$(CH_2)_4$C*H*$_3$), 1.32 – 1.35 (m, 15H, C(C*H*$_3$)$_3$ and -$(CH_2)_4$C*H*$_3$), 2.18 – 2.28 (m, 2H, =CHC*H*$_2$), 5.19 (d, 1H, $J_{HH}$ = 18.5 Hz, =C*H*Si), 6.25 (dt, 1H, $J_{HH}$ = 18.6, 6.3 Hz, =C*H*CH$_2$), 6.61 (d, 1H, $J_{HH}$ = 19.1 Hz, =C*H*Si), 6.99 (d, 1H, $J_{HH}$ = 19.1 Hz, =C*H*CH$_2$), 7.29 – 7.53 (m, 7H, Ph and -C$_6$*H*$_4$-), 7.58 – 7.68 (m, 2H, Ph); $^{13}$C NMR ($CDCl_3$, δ, ppm): -3.66 (*C*H$_3$), 14.06, 22.54, 28.30, 31.29, 31.46, 34.62, 36.90, 124.81, 125.42, 126.28, 126.63, 127.73, 128.99, 134.52, 135.69, 137.77, 146.04, 151.11, 151.35; $^{29}$Si NMR ($CDCl_3$, δ, ppm): -17.84; MS: *m/z* (rel. intensity): 57 (76), 105 (14), 121 (33), 122 (10), 145 (27), 146 (14), 147 (11), 158 (13), m159 (15), 171 (11), 172 (10), 177 (11), 187 (11), 215 (21), 216 (14), 217 (20), 221 (11), 235 (12), 250 (18), 264 (18), 278 (12), 280 (19), 291 (21), 298 (14), 230 (26), 305 (32), 306 (24), 319 (10), 361 (100), 362 (33), 376 (98, $M^+$); anal. calcd. for $C_{26}H_{36}Si$ (%): C: 82.91, H: 9.63; found: C: 82.99, H: 9.71.

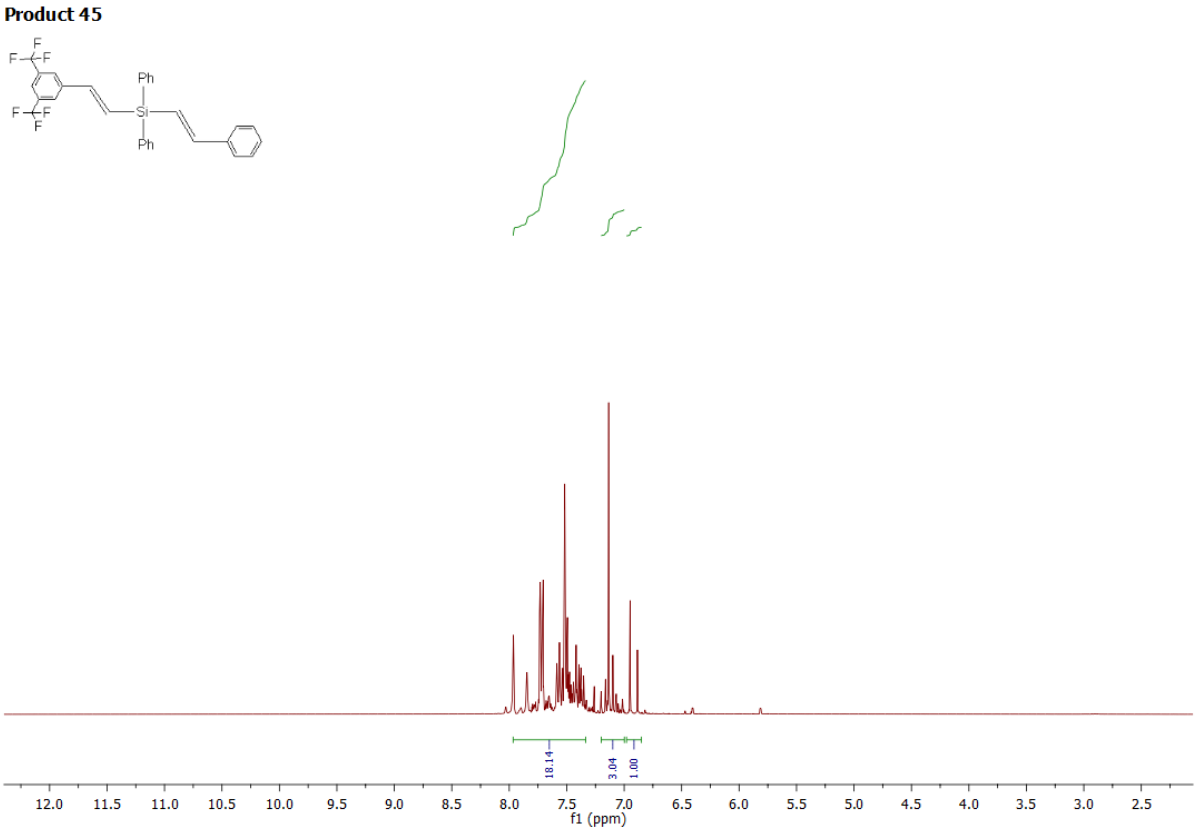



**Figure S127.** $^{1}$H NMR (400 MHz, $CDCl_3$) of product **45**

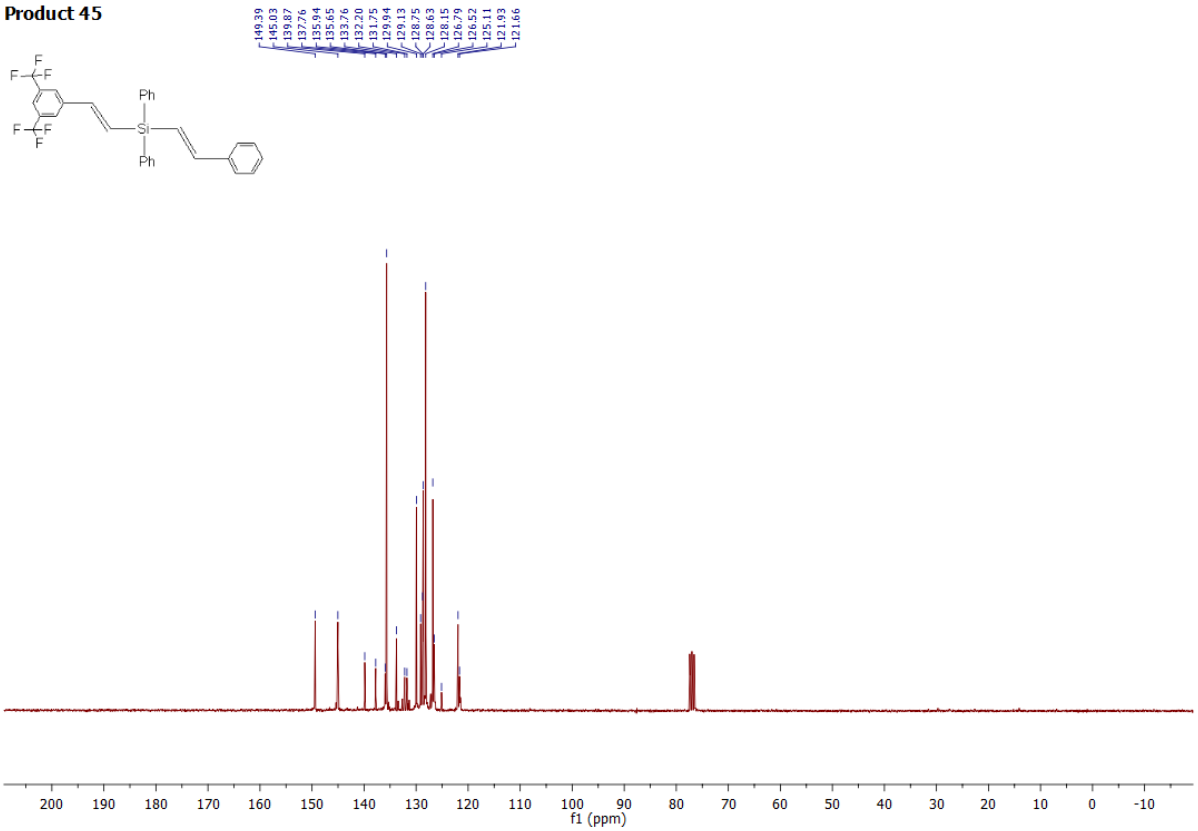



**Figure S128.** $^{13}$C NMR (100 MHz, $CDCl_3$) of product **45**

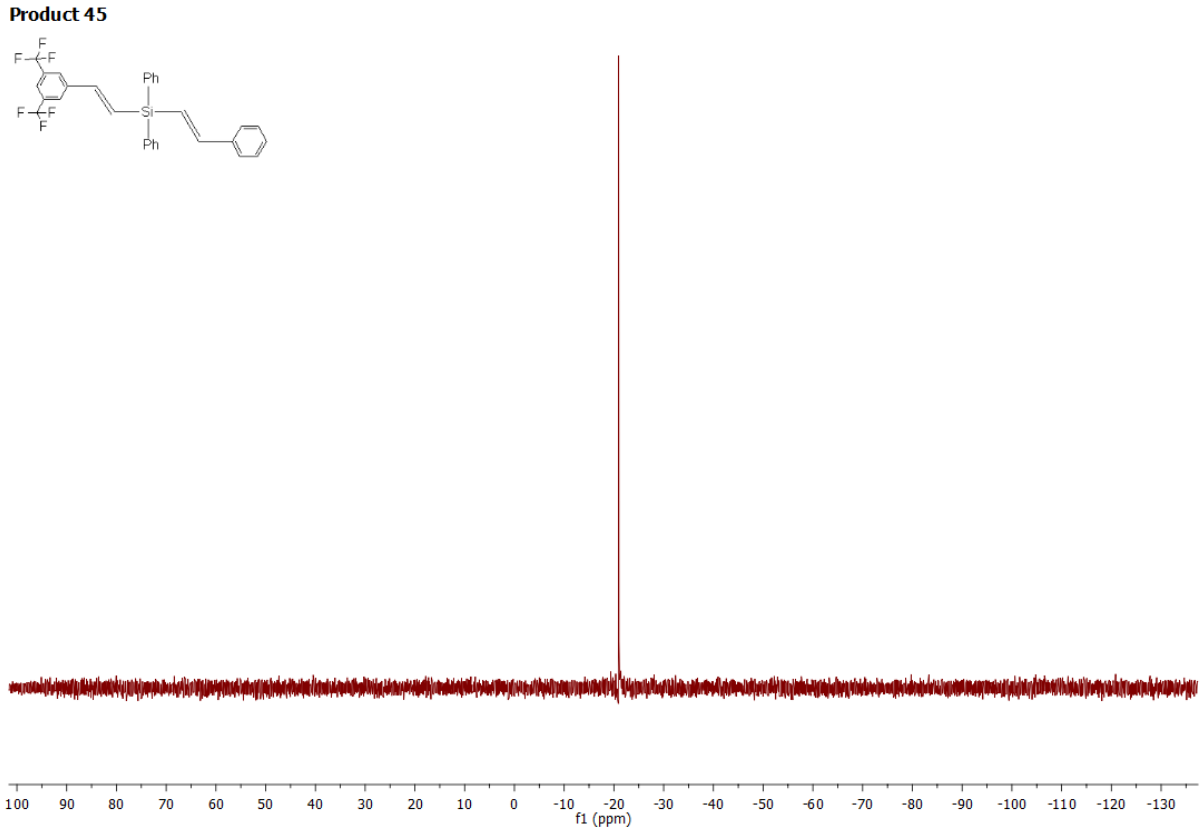



**Figure S129.** $^{29}$Si NMR (79 MHz, $CDCl_3$) of product **45**

*Analytical data of product 45:*

Isolated yield: 86% (495.8 mg); $^{1}$H NMR ($CDCl_3$, δ, ppm): 6.92 (d, 1H, $J_{HH}$ = 19.1 Hz, =C*H*Si), 7.01 – 7.21 (m, 3H, =C*H*Si and =C*H*$CH_2$), 7.35 – 7.97 (m, 18H, Ph and –$C_6H_3$-); $^{13}$C NMR ($CDCl_3$, δ, ppm): 121.66 (m, *C*$F_3$), 121.93, 125.11, 126.54 (d, *J* = 3.1 Hz), 126.79, 128.15, 128.63, 128.75, 129.13, 129.94, 131.75, 132.20, 133.76, 135.56, 135.94, 137.76, 139.87, 145.03, 149.39; $^{29}$Si NMR ($CDCl_3$, δ, ppm): -19.23; MS: *m/z* (rel. intensity): 51 (22), 77 (29), 103 (23), 104 (20), 181 (22), 183 (36), 201 (22), 219 (19), 227 (17), 278 (77), m279 (28), 362 (17), 421 (100), 422 (29), 446 (15), 447 (19), 505 (53), 506 (17), 524 (13, $M^+$); anal. calcd. for $C_{30}H_{22}F_6Si$ (%): C: 68.69, H: 4.23; found: C: 68.80, H: 4.31.

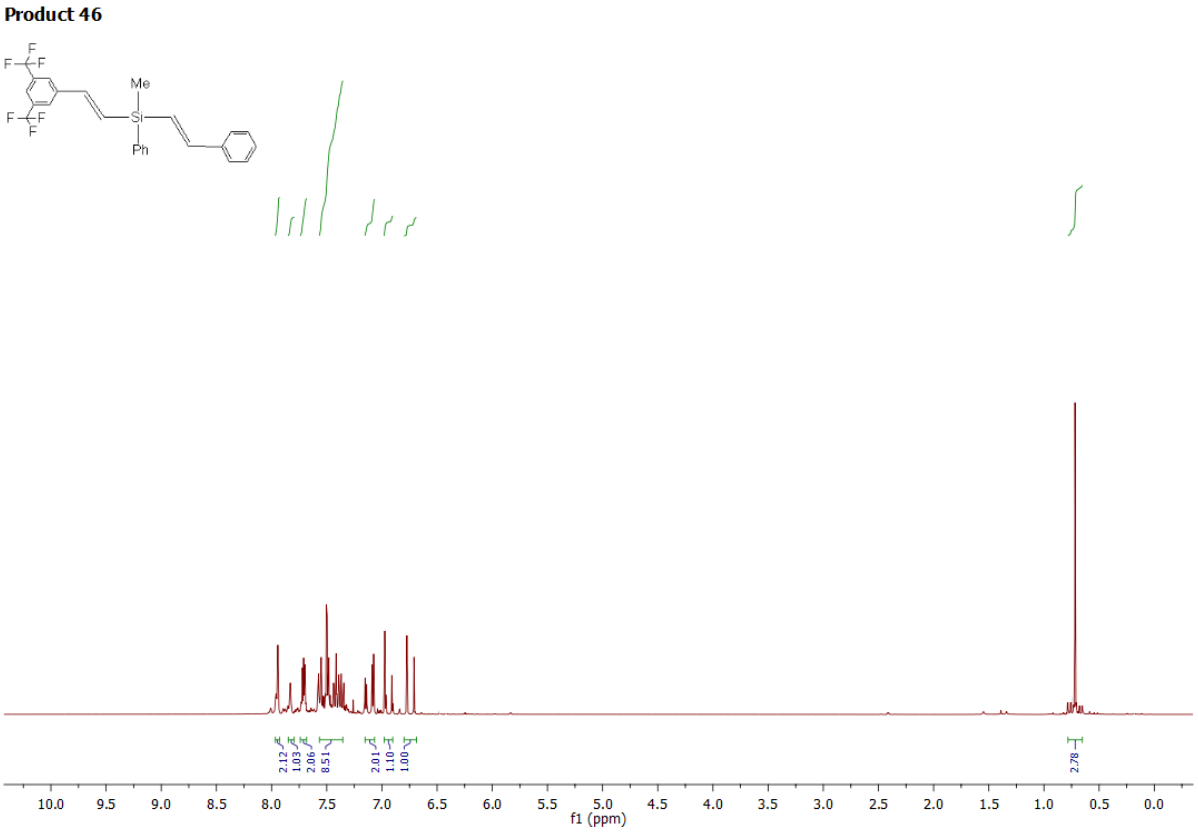



**Figure S130.** $^{1}$H NMR (400 MHz, $CDCl_3$) of product **46**

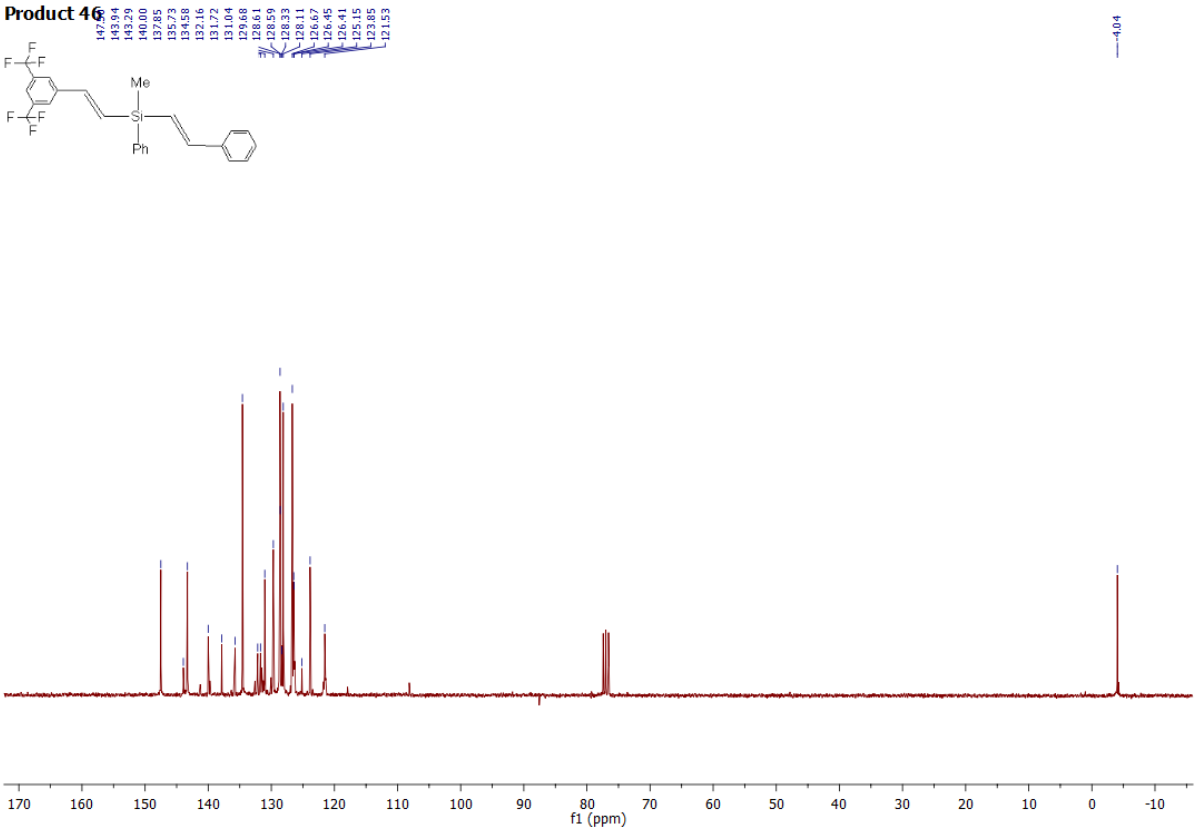



**Figure S131.** $^{13}$C NMR (100 MHz, $CDCl_3$) of product **46**

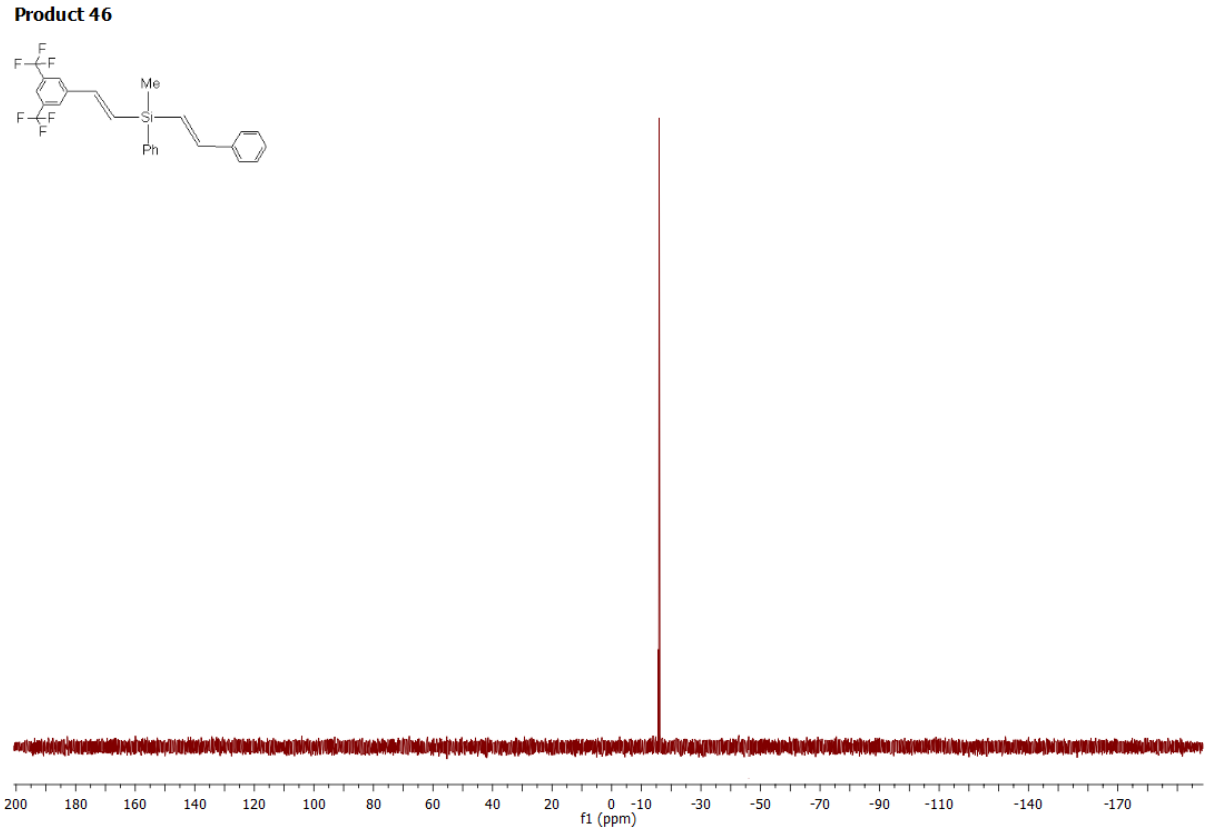



**Figure S132.** $^{29}$Si NMR (79 MHz, $CDCl_3$) of product **46**

*Analytical data of product 46:*

Isolated yield: 88% (447.3 mg); $^{1}$H NMR ($CDCl_3$, δ, ppm): 0.72 (s, 3H, C*H*$_3$), 6.74 (d, 1H, $J_{HH}$ = 19.2 Hz, =C*H*Si), 6.94 (d, 1H, $J_{HH}$ = 19.1 Hz, =C*H*Si), 7.11 (d, 1H, $J_{HH}$ = 19.1 Hz, =C*H*CH$_2$), 7.12 (d, 1H, $J_{HH}$ = 19.2 Hz, =C*H*CH$_2$), 7.35 – 7.56 (m, 8H, Ph), 7.68 – 7.74 (m, 2H, Ph), 7.81 – 7.85 (m, 1H, -C$_6$H$_4$-), 7.93 – 7.96 (m, 2H, -C$_6$H$_4$-); $^{13}$C NMR ($CDCl_3$, δ, ppm): -4.04 (*C*H$_3$), 121.53 (m, *C*F$_3$), 123.85, 125.15, 126.43 (d, *J* = 2.9 Hz), 126.67, 128.11, 128.31, 128.59, 128.61, 129.68, 131.04, 131.72, 132.16, 134.58, 135.73, 137.85, 140.00, 143.29, 143.94, 147.50; $^{29}$Si NMR ($CDCl_3$, δ, ppm): -15.82; MS: *m/z* (rel. intensity): 51 (11), 91 (11), 105 (20), 139 (26), 145 (14), 219 (10), 278 (10), 283 (12), 284 (13), 303 (24), 304 (100), 305 (18), 443 (40), 444 (11), 462 (12, M$^+$); anal. calcd. for $C_{25}H_{20}F_6Si$ (%): C: 64.92, H: 4.36; found: C: 65.12, H: 4.52.

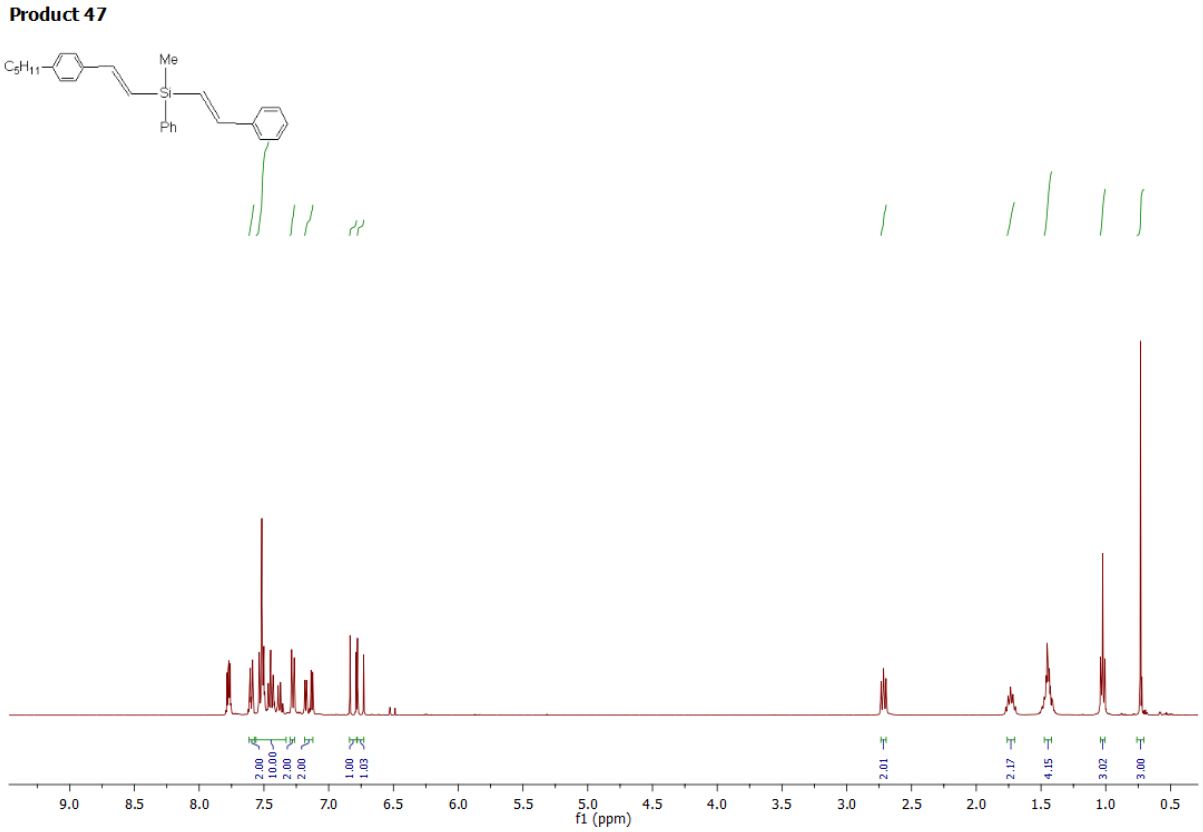



**Figure S133.** $^{1}$H NMR (400 MHz, $CDCl_3$) of product **47**

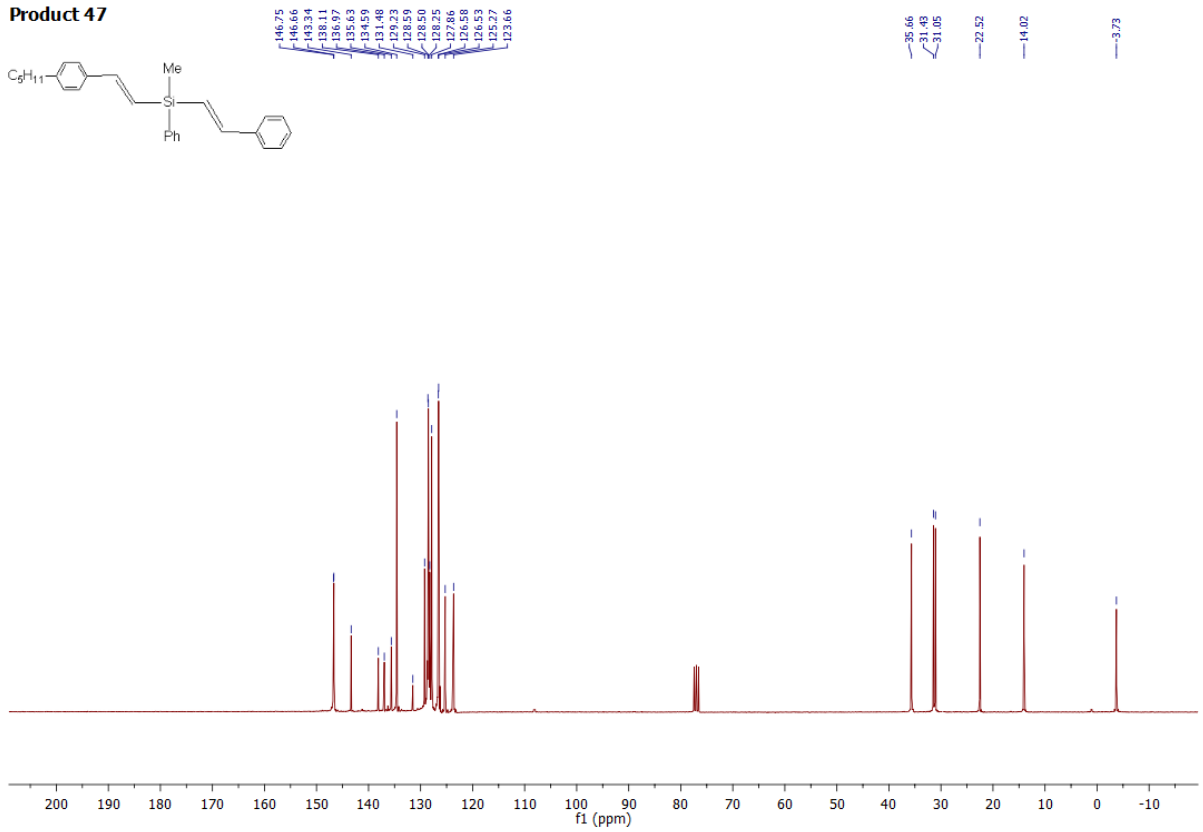



**Figure S134.** $^{13}$C NMR (100 MHz, $CDCl_3$) of product **47**

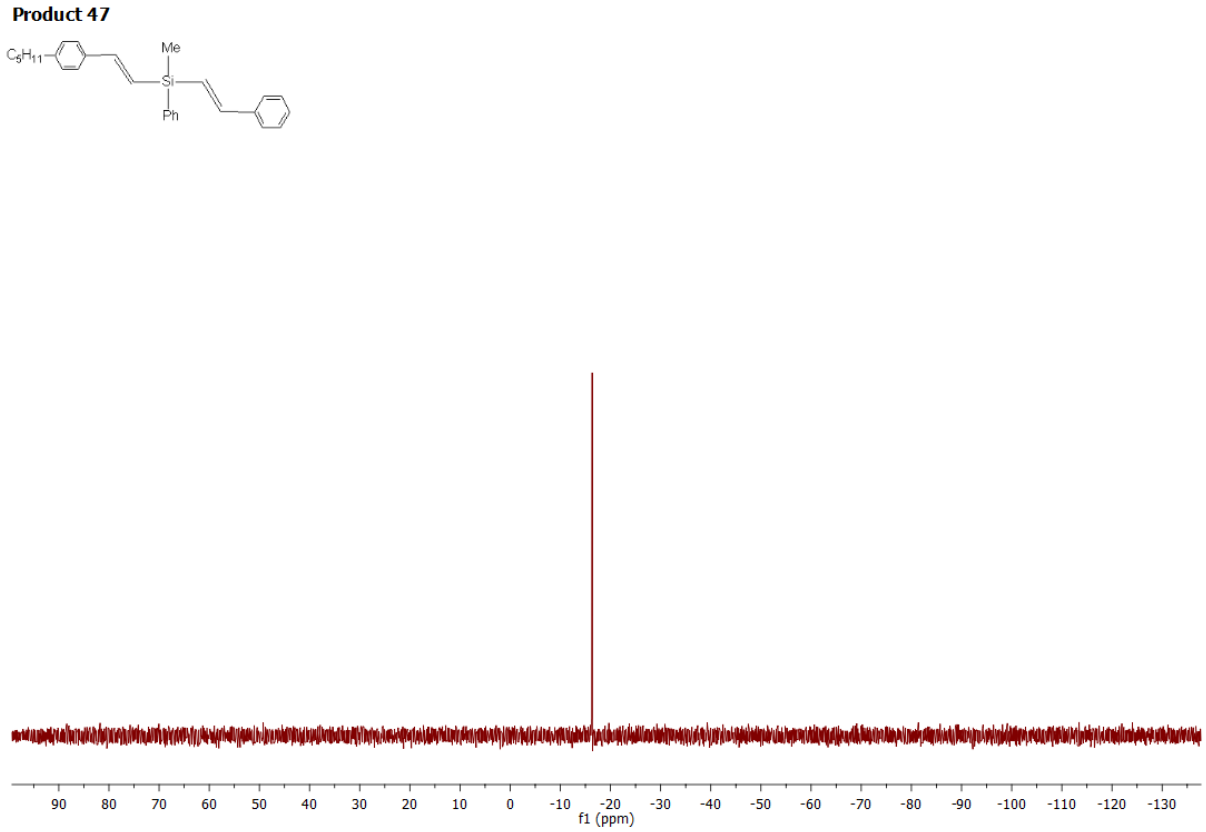



**Figure S135.** $^{29}$Si NMR (79 MHz, $CDCl_3$) of product **47**

*Analytical data of product 47:*

Isolated yield: 90% (392.3 mg); $^{1}$H NMR ($CDCl_3$, δ, ppm): 0.73 (s, 3H, C*H*$_3$), 1.02 (t, 3H, $J_{HH}$ = 6.9 Hz, -$(CH_2)_4$C*H*$_3$), 1.37 – 1.50 (m, 4H, -$(CH_2)_4$C*H*$_3$), 1.67 – 1.80 (m, 2H, -$(CH_2)_4$C*H*$_3$), 2.66 – 2.76 (m, 2H, =CHC*H*$_2$), 6.75 (d, 1H, $J_{HH}$ = 19.1 Hz, =C*H*Si), 6.81 (d, 1H, $J_{HH}$ = 19.1 Hz, =C*H*Si), 7.15 (d, 1H, $J_{HH}$ = 19.1 Hz, =C*H*$CH_2$), 7.16 (d, 1H, $J_{HH}$ = 19.1 Hz, =C*H*$CH_2$), 7.28 (d, 2H, $J_{HH}$ = 8.1 Hz, -$C_6H_4$-) 7.35 – 7.54 (m, 10H, Ph and -$C_6H_4$-), 7.57 – 7.62 (m, 2H, Ph); $^{13}$C NMR ($CDCl_3$, δ, ppm): -3.73 (*C*H$_3$), 14.02, 22.52, 31.05, 31.43, 31.66, 123.66, 125.27, 126.55 (d, *J* = 3.6 Hz), 127.86, 128.25, 128.50, 128.59, 129.23, 131.48, 134.59, 135.63, 136.97, 128.11, 143.34, 146.66, 146.75; $^{29}$Si NMR ($CDCl_3$, δ, ppm): -16.35; MS: *m/z* (rel. intensity): 105 (18), 249 (19), 250 (24), 277 (38), 291 (15), 292 (25), 293 (44), 294 (20), 304 (17), 305 (73), 307 (44), 308 (18), 317 (18), 318 (70), 319 (100), 320 (51), 321 (23), 381 (54), 383 (36), 384 (17), 389 (18), 396 (26, $M^+$); anal. calcd. for $C_{28}H_{32}Si$ (%): C: 84.79, H: 8.13; found: C: 84.92, H: 8.28.

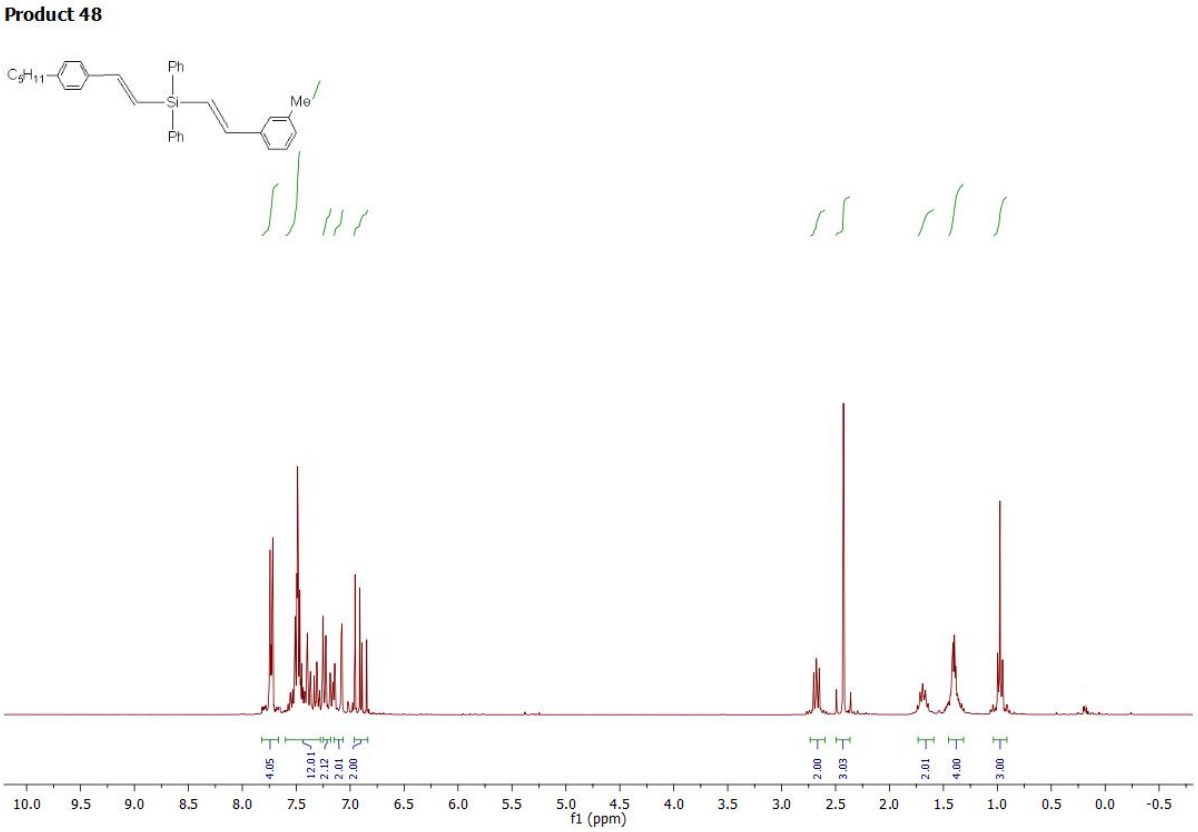



**Figure S136.** $^{1}$H NMR (400 MHz, $CDCl_3$) of product **48**

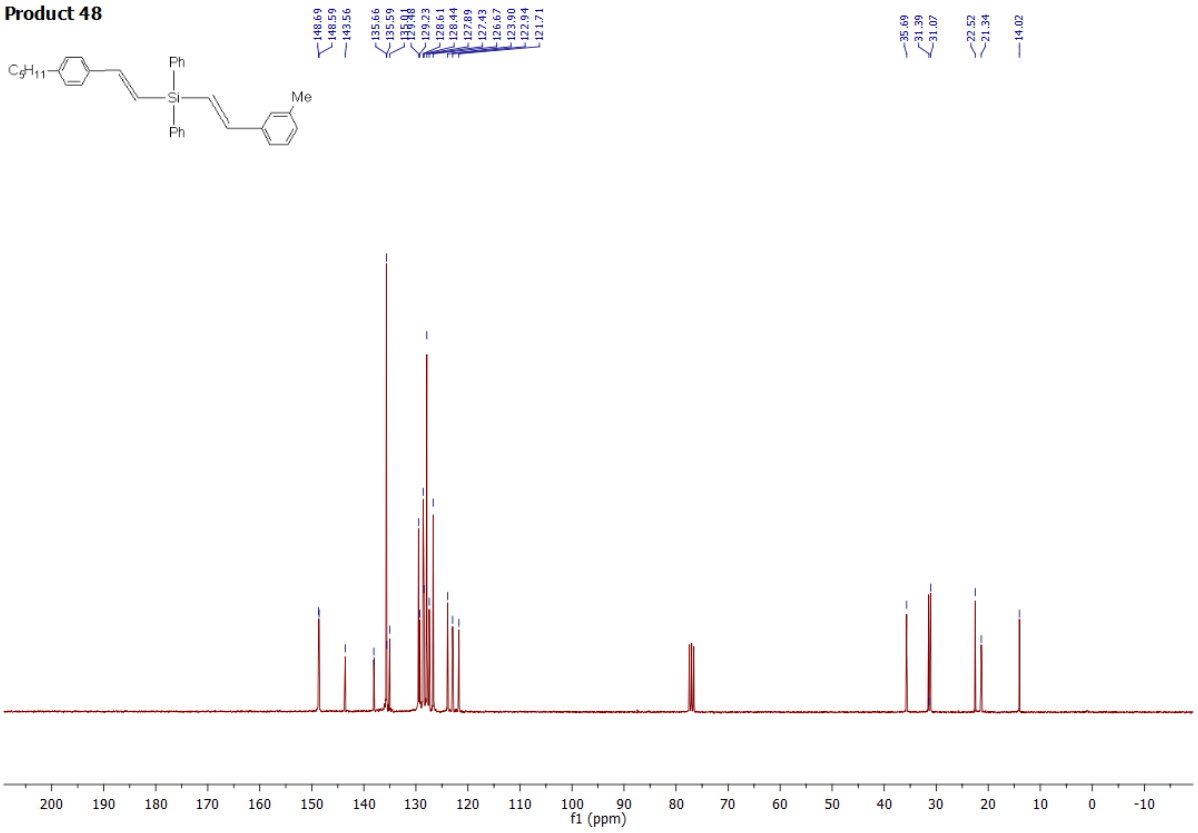



**Figure S137.** $^{13}$C NMR (100 MHz, $CDCl_3$) of product **48**

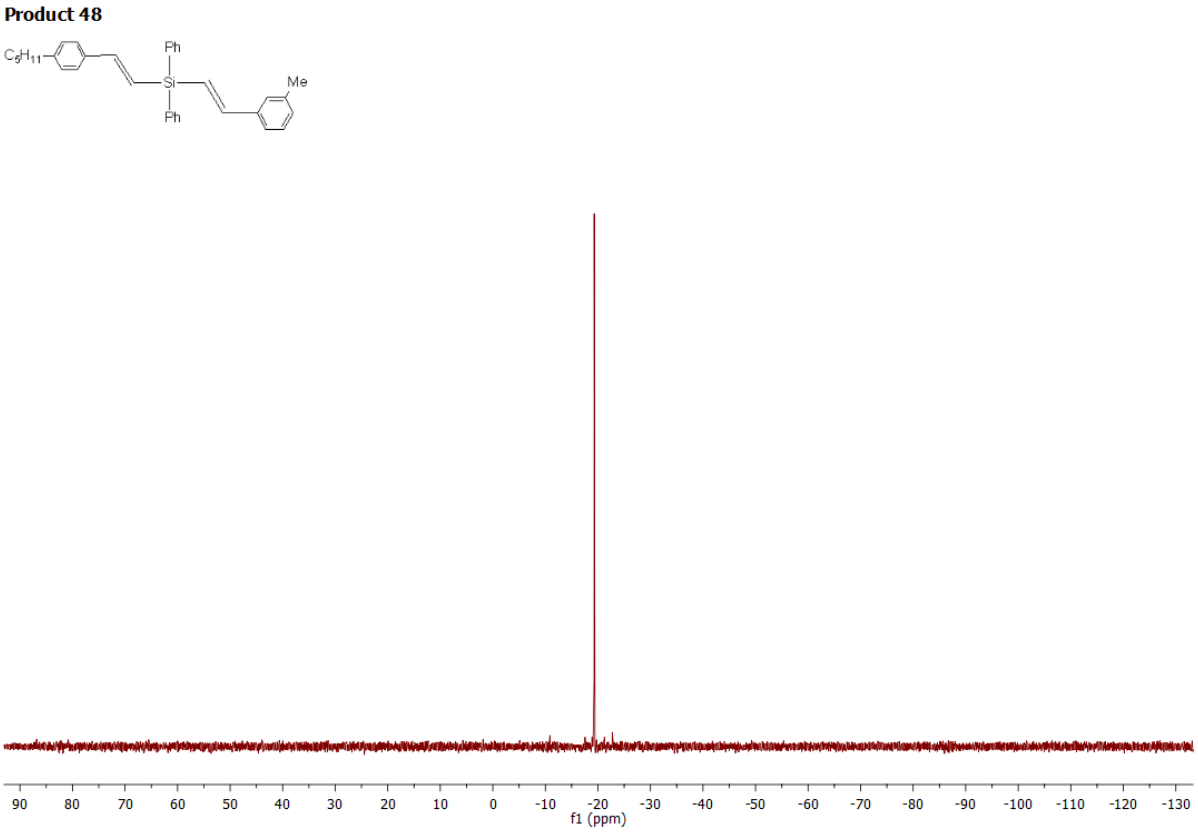



**Figure S138.** $^{29}$Si NMR (79 MHz, $CDCl_3$) of product **48**

*Analytical data of product 48:*

Isolated yield: 92% (477.9 mg); $^{1}$H NMR ($CDCl_3$, δ, ppm): 0.98 (t, 3H, $J_{HH}$ = 6.9 Hz, -$(CH_2)_4CH_3$), 1.33 – 1.44 (m, 4H, -$(CH_2)_4CH_3$), 1.62 – 1.74 (m, 2H, -$(CH_2)_4CH_3$), 2.43 (s, 3H, $CH_3$), 2.62 – 2.73 (m, 2H, =$CHCH_2$), 6.88 (d, 1H, $J_{HH}$ = 19.1 Hz, =C*H*Si), 6.92 (d, 1H, $J_{HH}$ = 19.1 Hz, =$CHCH_2$), 7.11 (d, 1H, $J_{HH}$ = 19.2 Hz, =C*H*Si), 7.12 (d, 1H, $J_{HH}$ = 19.2 Hz, =$CHCH_2$), 7.18 – 7.25 (m, 2H, Ar), 7.28 – 7.542 (m, 12H, Ar), 7.68 – 7.77 (m, 4H, Ar); $^{13}$C NMR ($CDCl_3$, δ, ppm): 14.02, 21.34, 22.52, 31.07, 31.44, 35.69, 121.71, 122.94, 123.90, 126.67, 127.43, 127.89, 128.44, 128.61, 129.23, 129.48, 135.01, 135.66, 138.00, 138.08, 143.56, 148.59, 148.69; $^{29}$Si NMR ($CDCl_3$, δ, ppm): -19.30; MS: *m/z* (rel. intensity): 105 (21), 181 (22), 206 (16), 220 (18), 221 (43), 222 (28), 234 (15), 235 (23), 278 (22), 279 (23), 291 (31), 292 (18), 311 (62), 612 (25), 324 (28), 105 (21), 181 (22), 206 (16), 220 (18), 221 (43), 222 (28), 234 (15), 235 (23), 278 (22), 278 (23), 291 (31), 292 (18), 311 (62), 312 (25), 324 (28), 367 (66), 368 (35), 380 (19), 381 (83), 382 (28), 394 (91), 395 (100), 472 (285, $M^+$); anal. calcd. for $C_{34}H_{36}Si$ (%): C: 86.38, H: 7.68; found: C: 86.26, H: 7.52.