# Supporting Information

## Cobalt-Catalyzed Hydrosilylation of Carbon Dioxide to the Formic Acid, Formaldehyde, and Methanol Level— How to Control the Catalytic Network?

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# 1. General Considerations

All air and moisture-sensitive experiments were conducted under dry argon atmosphere using standard Schlenk techniques or an MBraun inert-gas glovebox containing an atmosphere of purified argon. Solvents for air- and moisture-sensitive experiments were purified using a two-column solvent purification system (MBraun-SPS-7) and transferred to the glovebox without exposure to air. Deuterated solvents were degassed and stored over activated molecular sieves prior to use. All chemicals were purchased from Sigma-Aldrich, TCI and ABCR chemicals and used without further purification. [Co($^{NMe}$PNP)Cl$_2$] **5** was synthesized according to literature procedures.[1] NMR spectra were recorded on Bruker AV-400 and Bruker AV-500 spectrometers at the indicated temperatures with the chemical shifts ($\delta$) given in ppm relative to TMS and the coupling constants ($J$) in Hz. The solvent signals were used as references and the chemical shifts converted to the TMS scale (C$_6$D$_6$: $\delta^1$H = 7.16 ppm, $\delta^{13}$C = 128.1 ppm; toluene-d$_8$: $\delta^1$H = 2.09, 6.98, 7.00, 7.09, $\delta^{13}$C = 125.5, 128.3, 129.2, 137.9). For quantification, the NMR samples were measured with a 500 MHz Bruker AVANCE III HD NMR spectrometer equipped with a Prodigy Cryo-Probe. $^{13}$C spectra (125.74 MHz) were recorded using a 90° pulse with 1H *inverse gated* decoupling (pulse program zgig). 256 scans were accumulated using a recycling delay of 60 seconds to allow for complete relaxation of the $^{13}$C nuclei. Spectra were thoroughly phased and integrated to provide quantitative results as checked by the internal reference. CHN elemental microanalyses were measured at "Mikroanalytisches Labor Kolbe" (c/o Fraunhofer Institut UMSICHT). HR-MS spectra were recorded on a Bruker ESQ3000 spectrometer. Infrared spectra were recorded on a Thermo Scientific Nicolet™ iS5 Spectrometer with an ID7 ATR accessory.

# 2. Experimental Procedures

## 2.1 Preparations

### 2.1.1 [Co(<sup>NMe</sup>PNP)H] 9
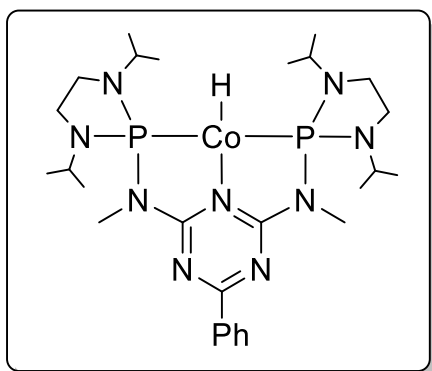


A solution of NaBEt$_3$H (91 µL, 0.0913 mmol, 1M in toluene) was added to a solution of [Co(<sup>NMe</sup>PNP)Cl$_2$] **5** (30 mg, 0.0435 mmol) in 3 mL toluene. After stirring for 20 min at room temperature, the mixture was filtrated through a syringe filter, and the volatiles were removed in vacuo. The product mixture was obtained as a dark green solid and was characterized without further purification to prevent decomposition.

**$^1$H NMR (500 MHz, Toluene-d$_8$, 298 K):** δ −13.31 (t, $^3J_{P,H} =$ 56 Hz, 1H, Co–*H*), 0.98 (d, $^3J_{H,H}$ = 6.5 Hz, 12 H, $^i$Pr–C*H*$_3$), 1.21 (d, $^3J_{HH}$ = 6.5 Hz, 12 H, $^i$Pr–C*H*$_3$), 2.89–2.94 (m, 4 H, C*H*$_2$), 3.00 (s, 6 H, NC*H*$_3$), 3.02–3.07 (m, 4 H, C*H*$_2$), 4.56 (sept, $^3J_{H,H}$ = 6.5 Hz, 4 H, $^i$Pr–C*H*), 7.19–7.30 (m, 3 H, Ph-*p*–*H*, Ph-*m*–*H*), 8.72 (d, $^3J_{H,H}$ = 7.4 Hz, 2 H, Ph-*o*–*H*).

**$^{13}$C{$^1$H} NMR (126 MHz, Toluene-d$_8$, 298 K):** δ 19.7 (CH$_3$, $^i$Pr–*C*H$_3$), 20.9 (CH$_3$, $^i$Pr–*C*H$_3$), 28.9 (CH$_3$, N*C*H$_3$), 39.9 (*C*H$_2$), 44.2 (m, CH, $^i$Pr–*C*H), 128.2 (CH, Ph-*m*–*C*H), 128.9 (CH, Ph-*o*–*C*H), 131.0 (CH, Ph-*p*–*C*H), 138.2 (Ph-*i*–*C*), 165.9 (m, Triazine-*o*–*C*), 166.2 (Triazine-*p*–*C*).

**$^{31}$P{$^1$H} NMR (202 MHz, Toluene-d$_8$, 298 K):** δ 178.1.

**HRMS (ESI$^+$):** calcd. for [C$_{27}$H$_{49}$N$_9$P$_2$Co]$^+$: 620.29127; found: 620.29102

**IR (Diamond ATR cell, cm$^{-1}$):** 2960, 2926, 2853, 1746, 1588, 1538, 1520, 1463, 1979, 1359, 1260, 1223, 1173, 1086, 1047, 1027, 967, 910, 860, 801, 775, 764, 743, 699, 609, 585, 520, 507, 491, 485, 478, 466, 453, 441.

**Figure S1: ¹H NMR spectrum (500 MHz, toluene-d₈, 298 K)** of **9** (* = Toluene, ** = BEt₃).



**Figure S2: ¹³C{¹H} NMR spectrum (126 MHz, toluene-d₈, 298 K)** of **9**.
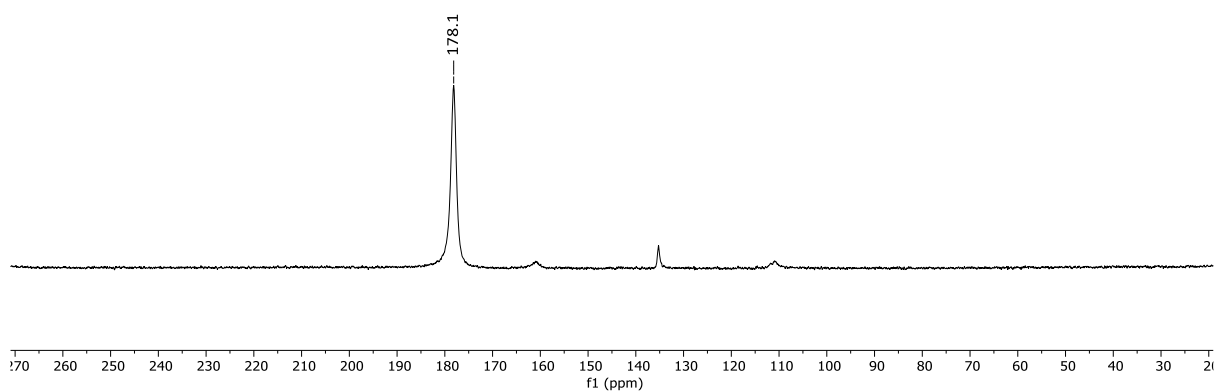
**Figure S3:** $^{31}P\{^1H\}$ **NMR spectrum (202 MHz, toluene-d$_8$, 298 K) of 9**.
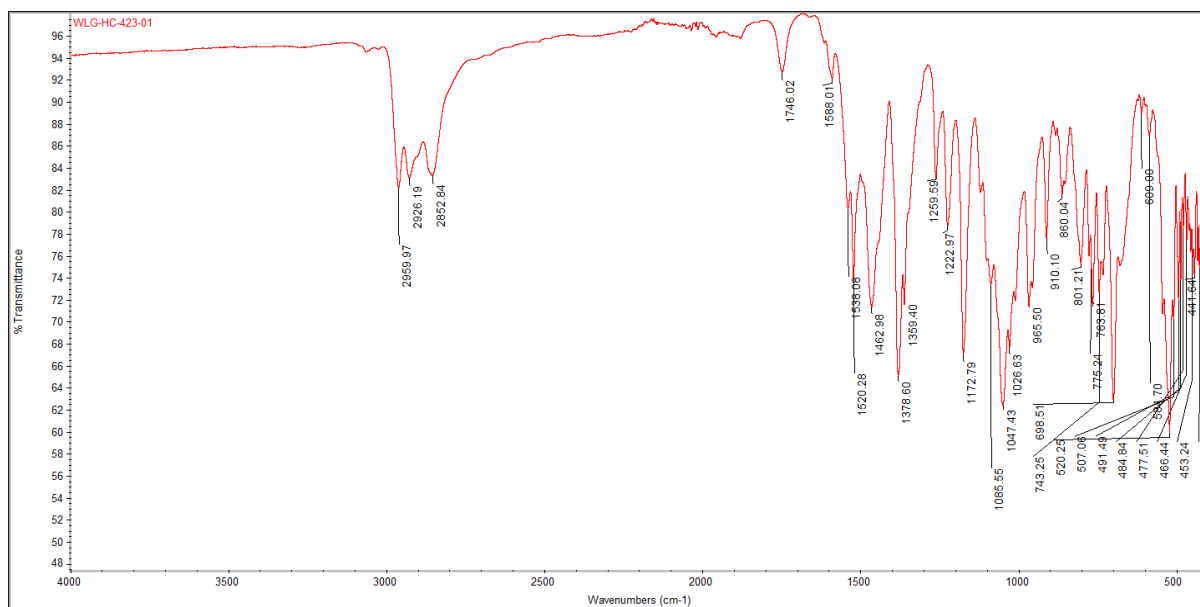


**Figure S4: IR spectrum (Diamond ATR cell) of 9**.

### 2.1.2 [Co($^{NMe}$PNP)(SiPhH$_2$)H$_2$] 10
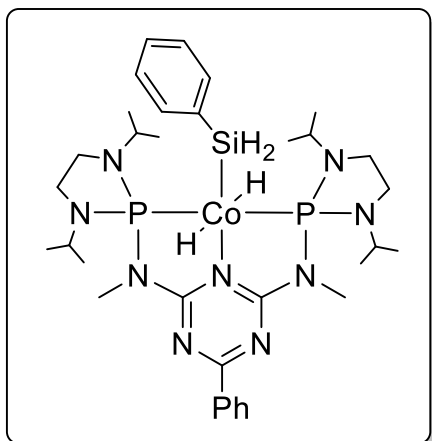


A solution of NaBEt$_3$H (183 µL, 0.183 mmol, 1M in toluene) was added to a solution of [Co($^{NMe}$PNP)Cl$_2$] **5** (60 mg, 0.0870 mmol) in toluene (6 mL), and the mixture was stirred for 5 min. Subsequently, phenylsilane (10.7 µL, 0.0870 mmol) was added, and the mixture was stirred at room temperature for 20 min. After filtration, the volatiles were removed in vacuo. The product mixture was obtained as brown solid and was characterized without further purification to prevent decomposition.

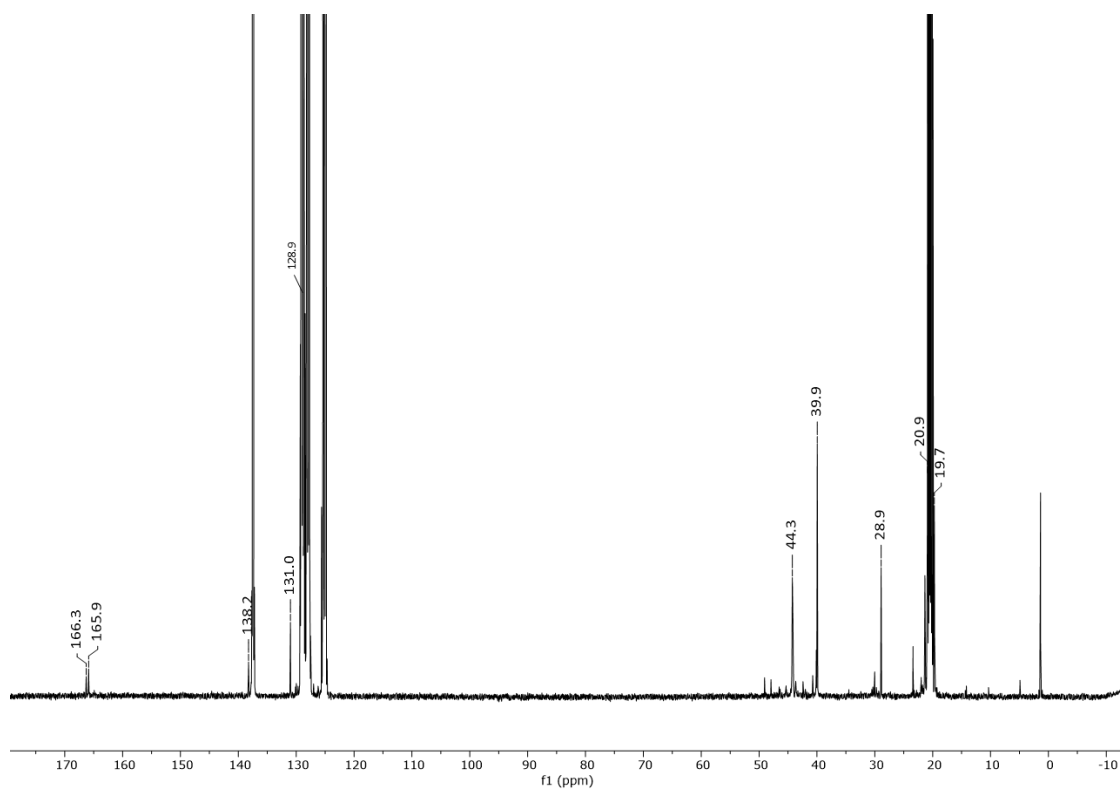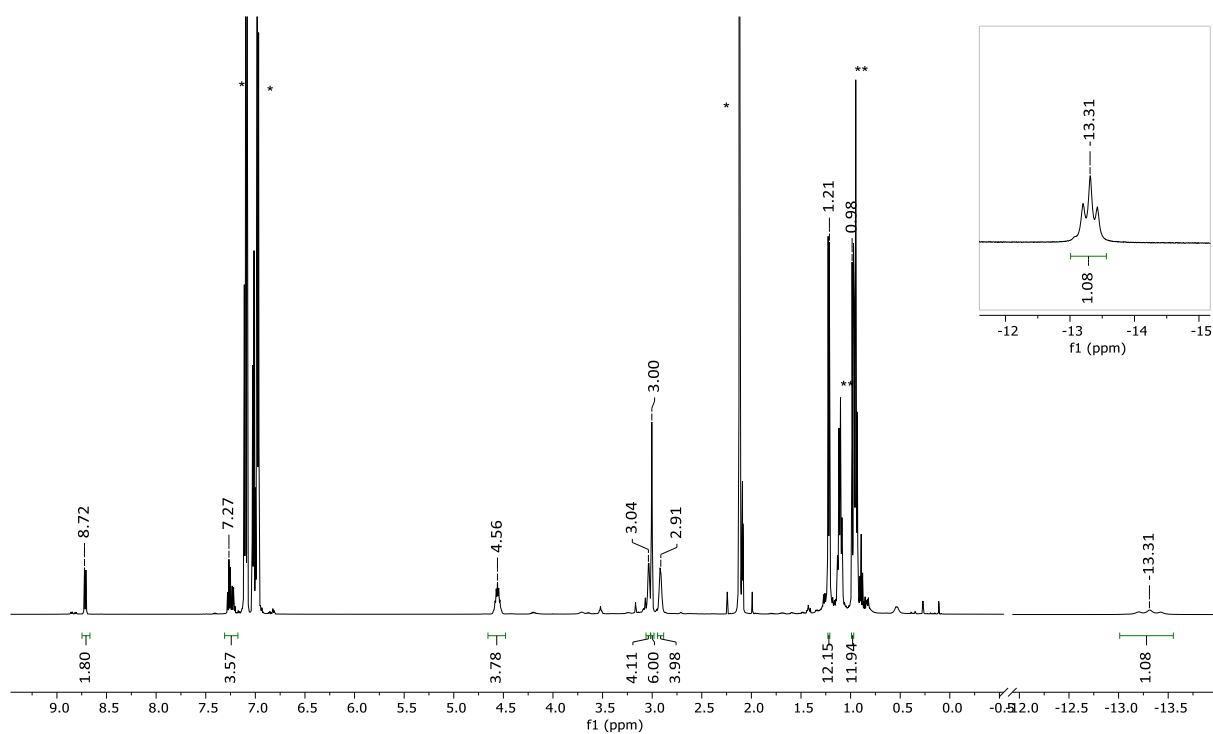**$^1$H NMR (400 MHz, C$_6$D$_6$, 298 K):** δ −9.28 (t, $^2J_{P,H}$ = 47.6 Hz, 2 H, Co−**H**), 0.89 (d, $^3J_{H,H}$ = 6.7 Hz, 12 H, $^i$Pr−C**H**$_3$), 1.17 (d, $^3J_{H,H}$ = 6.7 Hz, 12 H, $^i$Pr−C**H**$_3$), 2.93–2.96 (m, 14 H, NC**H**$_3$, C**H**$_2$), 4.54–4.59 (m, 6 H, $^i$Pr−C**H**, Si**H**$_2$), 7.20–7.24 (m, 2 H, Ar−C**H**), 7.28–7.32 (m, 4 H, Ar−C**H**), 8.03–8.05 (m, 2 H, Si−Ph−**H**), 8.80–8.81 (m, 2 H, Ar−C**H**).

**$^1$H NMR (400 MHz, toluene-d$_8$, 298 K):** δ −9.39 (t, $^2J_{P,H}$ = 47.7 Hz, 2 H, Co−**H**), 0.88 (d, $^3J_{H,H}$ = 6.7 Hz, 12 H, $^i$Pr−C**H**$_3$), 1.12 (d, $^3J_{H,H}$ = 6.7 Hz, 12 H, $^i$Pr−C**H**$_3$), 2.90–3.03 (m, 14 H, NC**H**$_3$, C**H**$_2$), 4.40 (t, $^3J_{P,H}$ = 10.4 Hz, 2 H, Si**H**$_2$), 4.51 (sept, $^3J_{H,H}$ = 6.6 Hz, 4 H, $^i$Pr−C**H**,), 7.14–7.31 (m, 6 H, Ar−C**H**), 7.92 (d, $^3J_{H,H}$ = 6.8 Hz, 2 H, Ar−C**H**), 8.72 (d, $^3J_{H,H}$ = 7.2 Hz, 2 H, Ar−C**H**).

**$^{13}$C{$^1$H} NMR (400 MHz, C$_6$D$_6$, 298 K):** δ 20.8 ($^i$Pr−**C**H$_3$), 21.2 (m, $^i$Pr−**C**H$_3$), 30.2 (m, N−**C**H$_3$), 40.5 (**C**H$_2$), 44.1 (m, $^i$Pr−**C**H), 127.0 (CH, Ar−**C**H), 128.3 (CH, Ar−**C**H), 128.4 (CH, Ar−**C**H), 129.1 (CH, Ar−**C**H), 131.5 (CH, Ar−**C**H), 136.0 (CH, Ar−**C**H), 137.9 (Triazine−Ph-$i$−**C**), 147.3 (SiPh-$i$−**C**), 165.9 (m, Triazine-$o$−**C**), 167.0 (Triazine-$p$−**C**).

**$^{31}$P{$^1$H} NMR (400 MHz, C$_6$D$_6$, 298 K):** δ 174.0.

**IR (Diamond ATR cell, cm⁻¹):** 2961, 2927, 2864, 2025, 1758, 1587, 1544, 1520, 1469, 1425, 1380, 1361, 1260, 1222, 1173, 1093, 1054, 1027, 968, 933, 912, 839, 801, 776, 764, 742, 729, 698, 543, 520, 491, 463, 454, 443, 436.
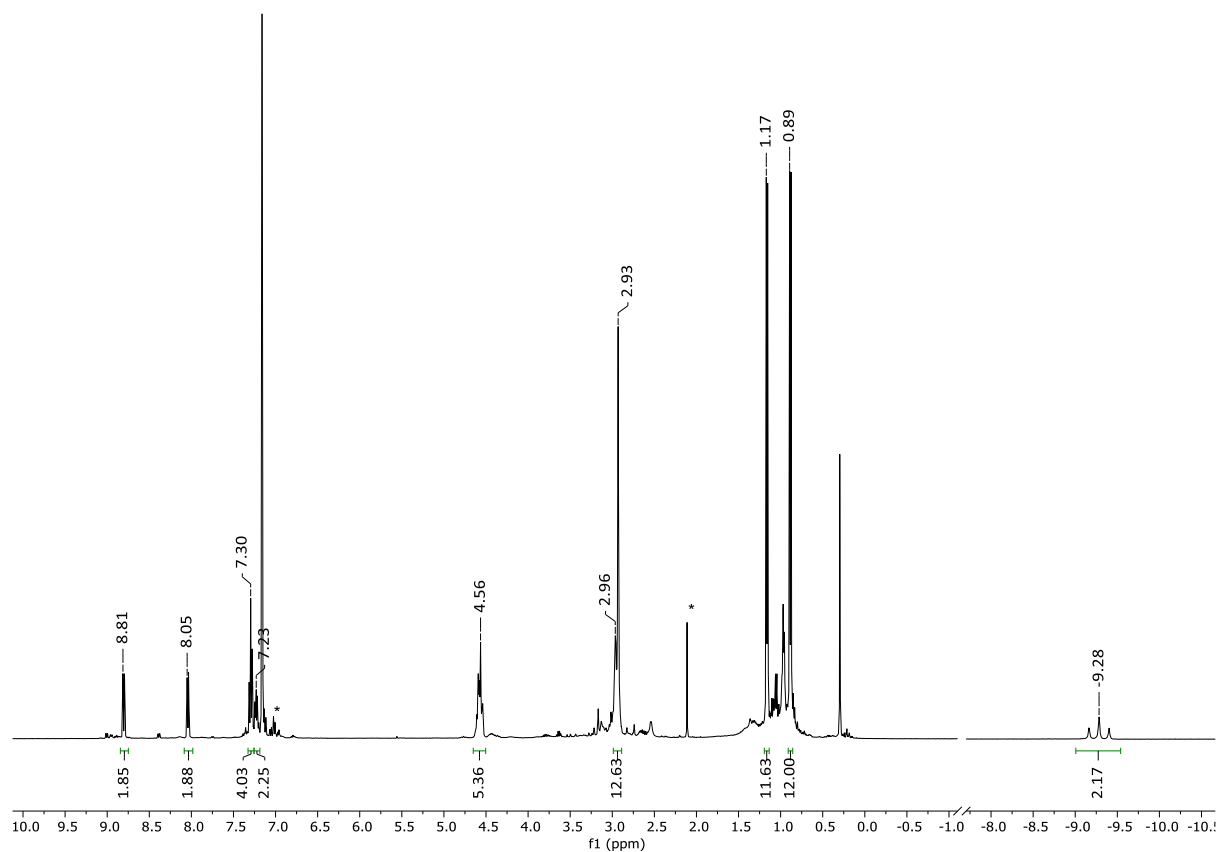


**Figure S5:** $^1$H NMR spectrum (400 MHz, C$_6$D$_6$, 298 K) of **10** (* = Toluene).
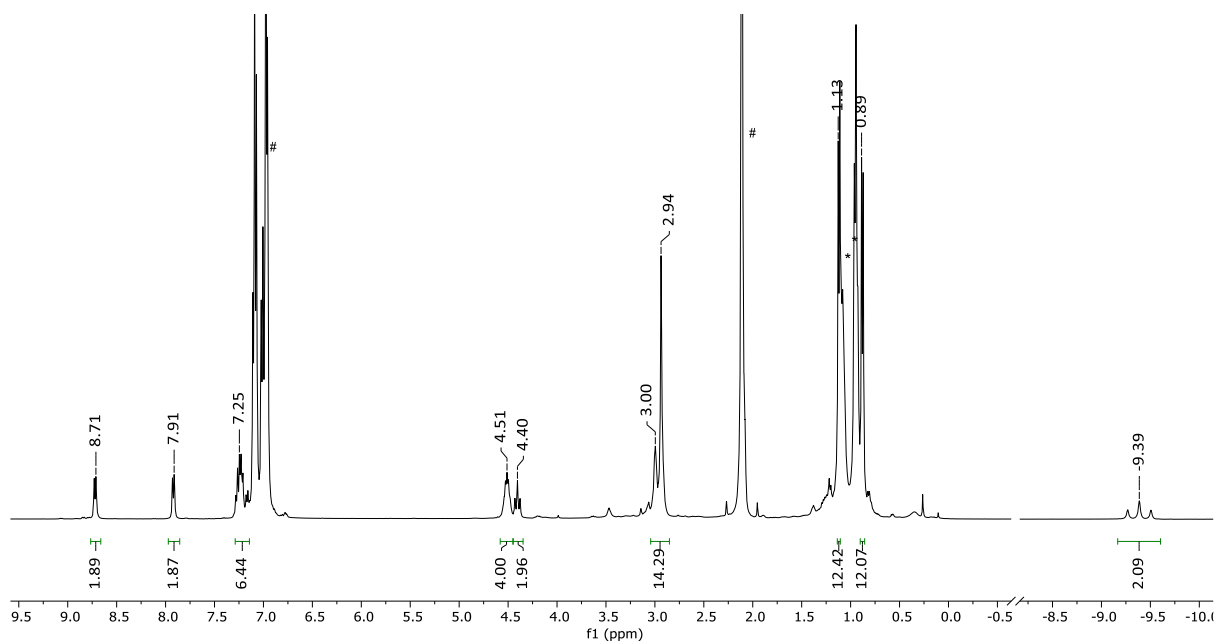
**Figure S6:** $^1$H NMR spectrum (400 MHz, toluene-d$_8$, 298 K) of **10.** * = BEt$_3$, # - Toluene.
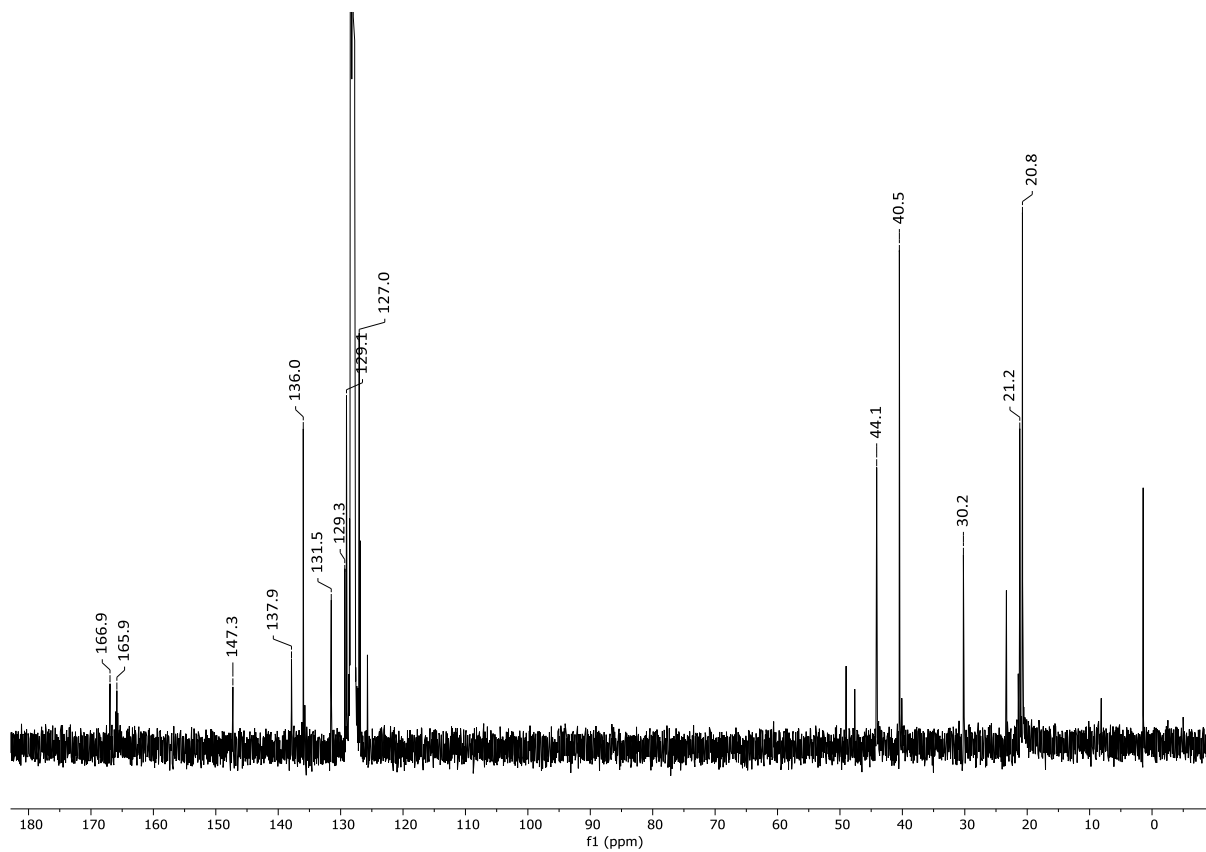


**Figure S7:** $^{13}$C{$^1$H} NMR spectrum (400 MHz, C$_6$D$_6$, 298 K) of **10**.
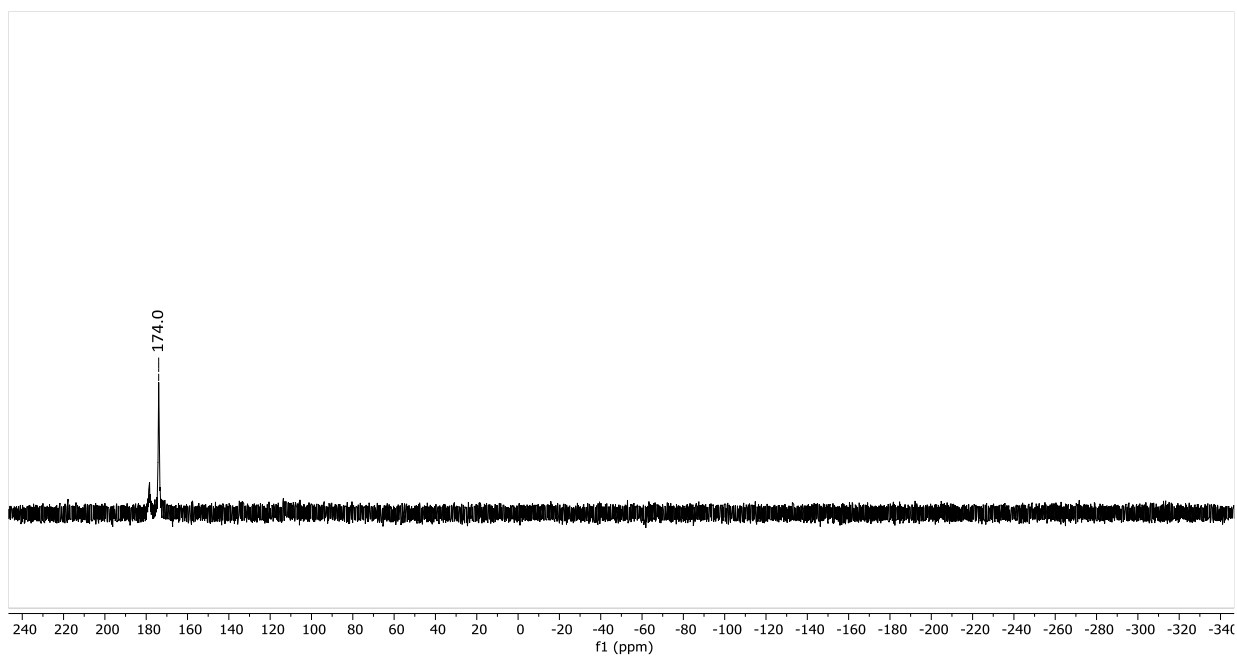
**Figure S8:** $^{31}P\{^1H\}$ **NMR spectrum (162 MHz, C$_6$D$_6$, 298 K) of 10**.

174.0
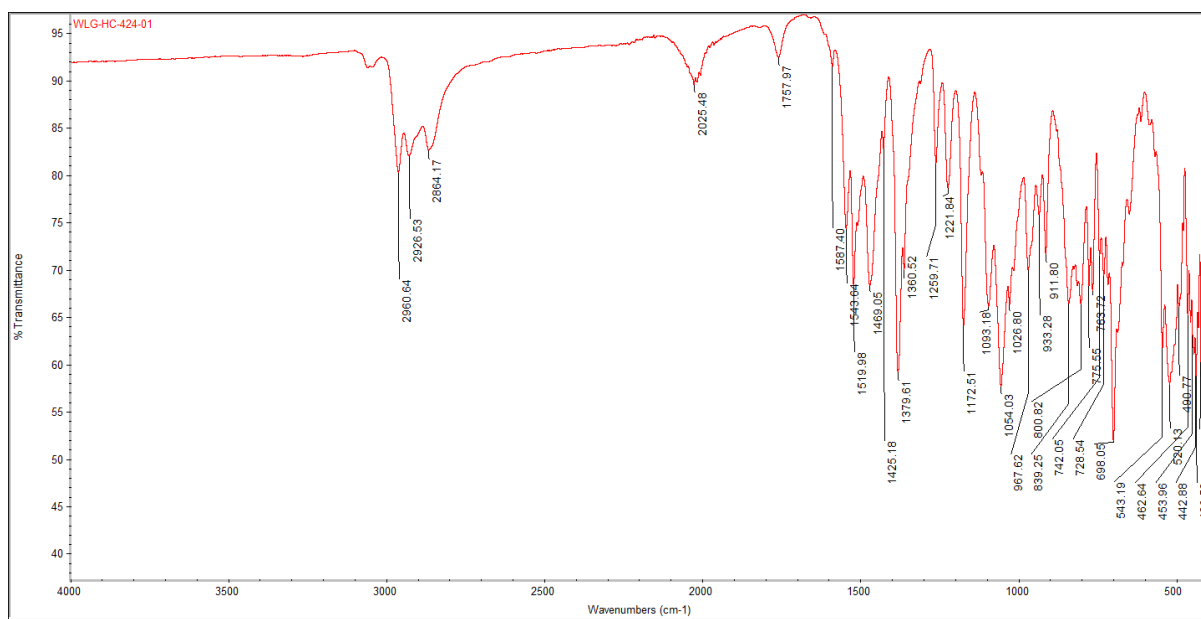


**Figure S9: IR spectrum (Diamond ATR cell) of 10**.

### 2.1.3 [Co($^{NMe}$PNP)OCHO] 11
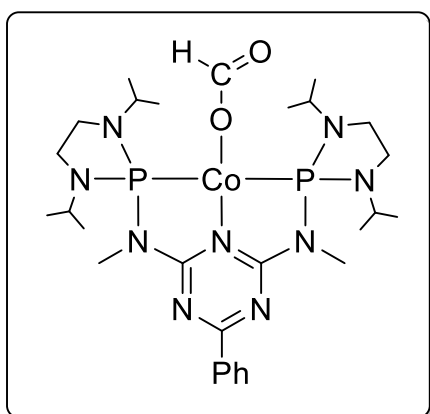


[Co($^{NMe}$PNP)H] **9** (15 mg, 0.0242 mmol, 1 eq) was dissolved in 1 mL toluene-$d_8$ in a Schlenk tube. The reaction mixture was frozen in liquid nitrogen and the headspace evacuated. Subsequently, the reaction mixture was exposed to 1 bar $CO_2$ and stirred for 20 min while warming to room temperature. After subsequent filtration, the volatiles were removed in vacuo. The product mixture was obtained as a brown solid and was characterized without further purification to prevent decomposition.

**$^1$H NMR (500 MHz, Toluene-$d_8$, 298 K):** δ 1.24 (d, $^3J_{H,H}$ = 6.5 Hz, 12 H, $^i$Pr–C*H*$_3$), 1.29 (d, $^3J_{H,H}$ = 6.5 Hz, 12 H, $^i$Pr–C*H*$_3$), 2.92–2.94 (m, 6 H, NC*H*$_3$), 2.95–3.03 (m, 8 H, C*H*$_2$), 4.08 (sept, $^3J_{H,H}$ = 6.5 Hz, 4 H, $^i$Pr–C*H*), 7.17 (t, $^3J_{H,H}$ = 7.8 Hz, 2 H, Ph-*m*–*H*), 7.39 (t, $^3J_{H,H}$ = 7.3 Hz, 1 H, Ph-*p*–*H*), 7.83 (s, 1 H, OC*H*O), 8.68 (d, $^3J_{H,H}$ = 7.5 Hz, 2 H, Ph-*o*–*H*).

**$^{13}$C{$^1$H} NMR (126 MHz, Toluene-$d_8$, 298 K):** δ 21.8 (CH$_3$, $^i$Pr–*C*H$_3$), 22.3 (CH$_3$, $^i$Pr–*C*H$_3$), 28.7 (CH$_3$, N*C*H$_3$), 43.0 (*C*H$_2$), 47.3 (m, CH, $^i$Pr–*C*H), 127.6 (CH, Ph-*o*–*C*H), 129.0 (CH, Ph-*m*–*C*H), 130.3 (CH, Ph-*p*–*C*H), 139.1 (Ph-*i*–*C*), 157.8 (Triazine-*p*–*C*), 166.4 (m, Triazine-*o*–*C*), 173.9 (m, CH, O*C*HO).

**$^{31}$P{$^1$H} NMR (162 MHz, Toluene-$d_8$, 298 K):** δ 111.9.

**IR (Diamond ATR cell, cm$^{-1}$):** 2961, 2928, 2855, 1910, 1593, 1548, 1458, 1380, 1259, 1215, 1173, 1121, 1069, 1049, 1026, 1008, 956, 910, 853, 801, 777, 756, 694, 584, 561.
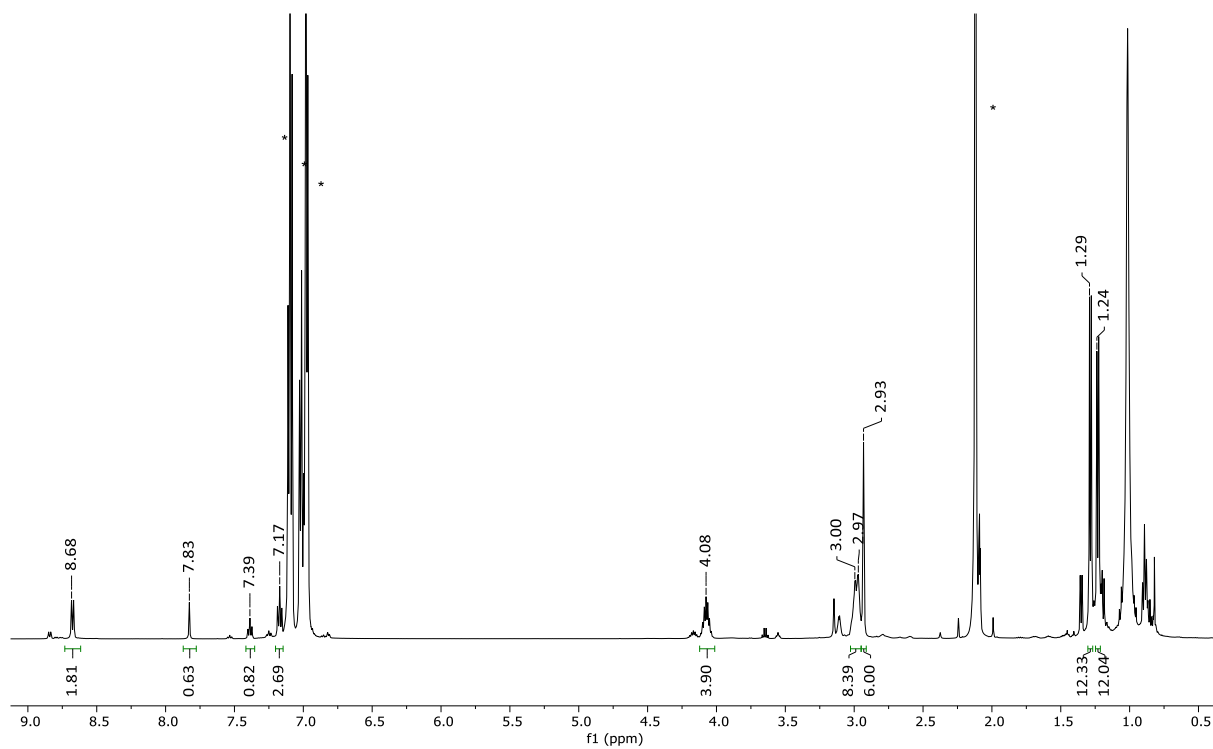
**Figure S10:** $^1H$ NMR spectrum (126 MHz, toluene-$d_8$, 298 K) of **11** prepared with $^{12}CO_2$ (* = Toluene).
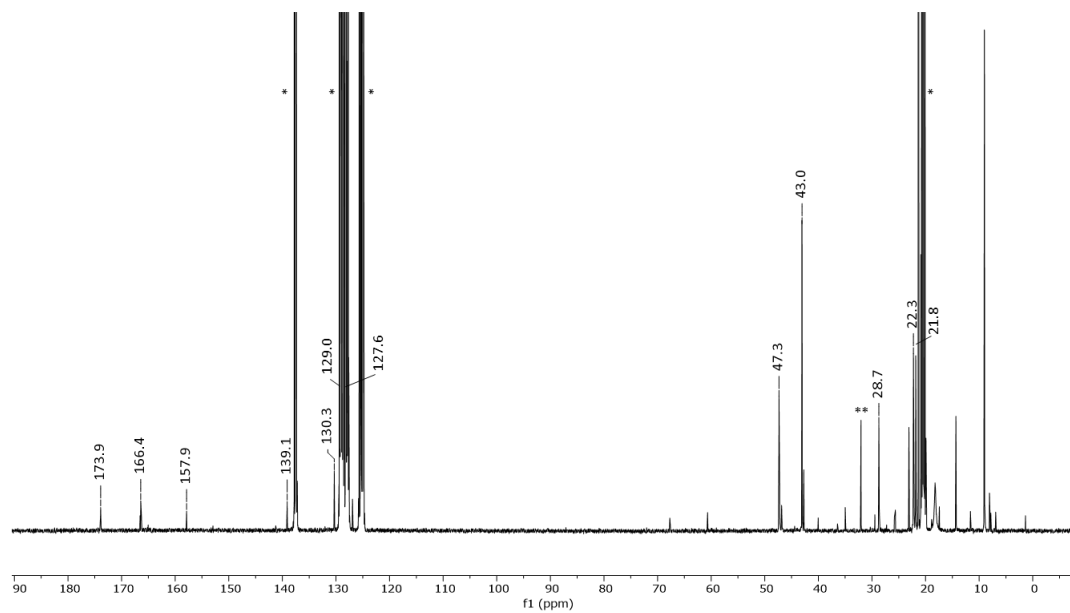


**Figure S11:** $^{13}C\{^1H\}$ NMR spectrum (500 MHz, toluene-$d_8$, 298 K) of **11** prepared with $^{12}CO_2$ (* = Toluene, ** - H grease).
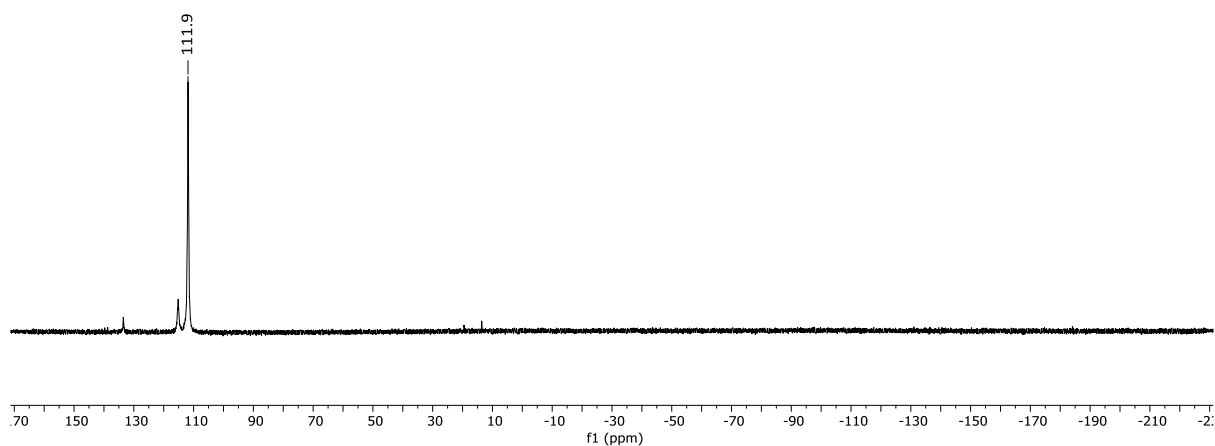
**Figure S12: $^{31}P\{^{1}H\}$ NMR spectrum (202 MHz, toluene-$d_8$, 298 K)** of **11** prepared with $^{12}CO_2$.

## Preparation of the $^{13}C$ isotopologue [Co($^{NMe}$PNP)O$^{13}$CHO]

A solution of NaBEt$_3$H (32 µL, 0.0320 mmol, 1M in toluene) was added to a toluene-$d_8$ (1 mL) solution of [Co($^{NMe}$PNP)Cl$_2$] **5** (10 mg, 0.0145 mmol). After stirring for 20 min at room temperature, the mixture was filtrated through a syringe filter and transferred into a J. Young NMR tube. The reaction mixture was frozen in liquid nitrogen and the headspace evacuated. Subsequently, the solution was exposed to $^{13}CO_2$ (1 bar) and warmed to room temperature. The NMR tube was carefully shaken and the mixture analyzed by NMR spectroscopy.
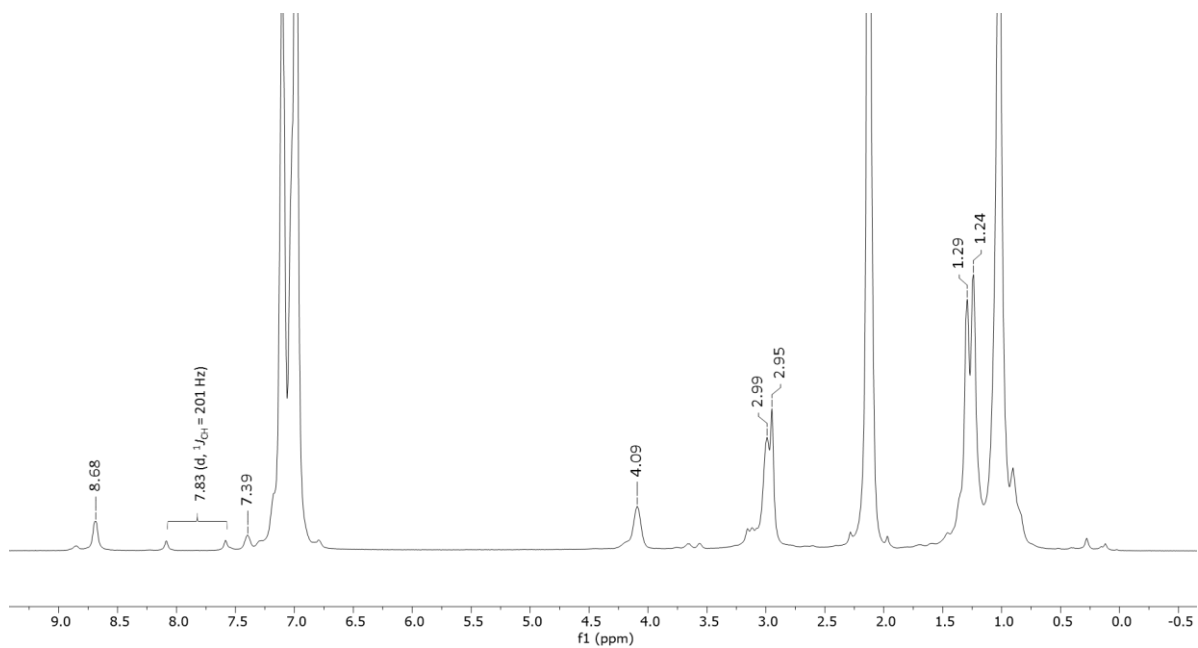
**Figure S13: $^{1}H$ NMR spectrum (400 MHz, toluene-d$_8$, 298 K)** of **11** prepared with $^{13}CO_2$.
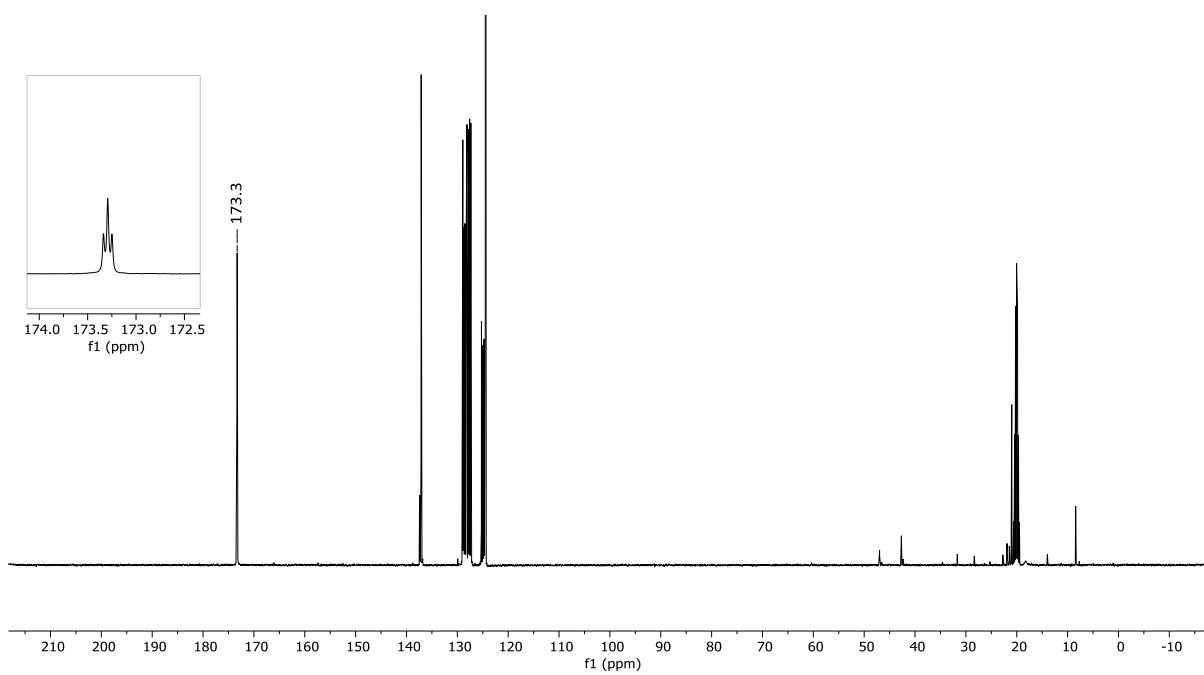


**Figure S14: $^{13}C\{^{1}H\}$ NMR spectrum (101 MHz, toluene-d$_8$, 298 K)** of **11** prepared with $^{13}CO_2$.
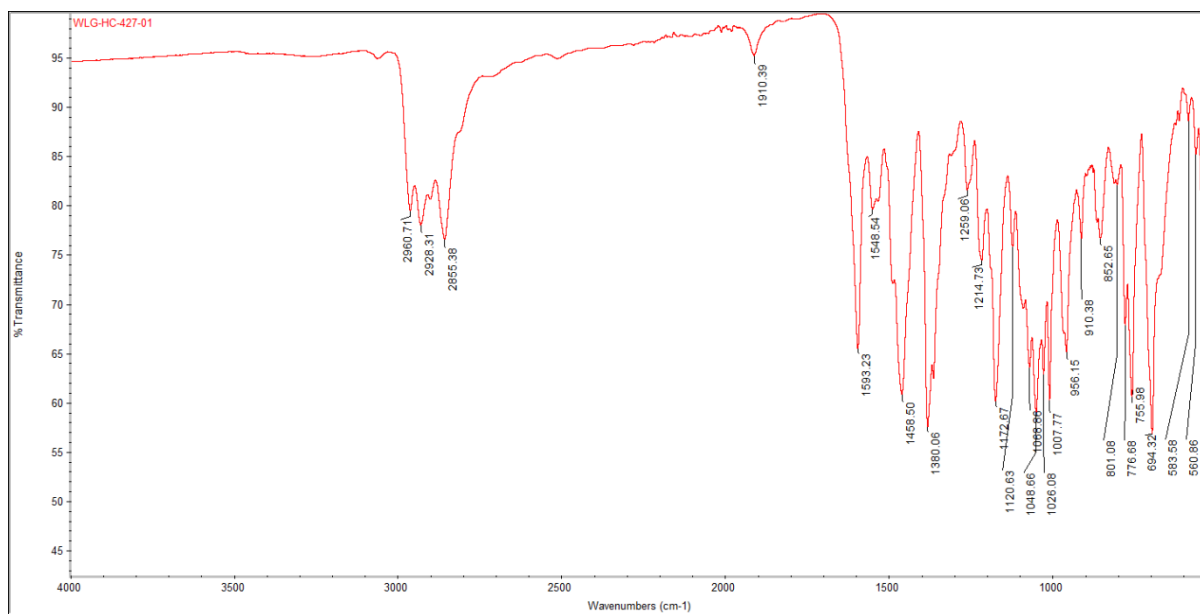
**Figure S15: IR spectrum (Diamond ATR cell)** of **11**.

### 2.1.4  [Co(NMePNP)(SiHPh(OCHO))H2] 12
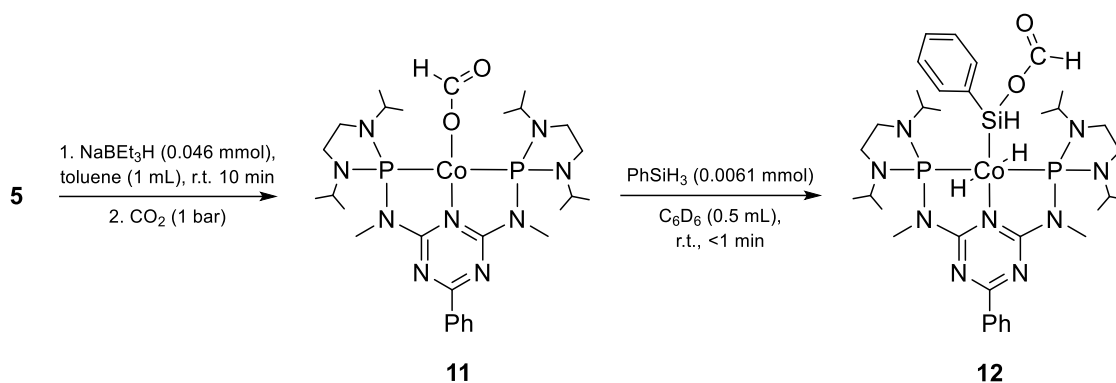


NaBEt$_3$H (46 µL, 0.046 mmol, 1M in toluene) was added to **5** (15 mg, 0.022 mmol) in toluene (1 mL). The mixture was stirred for 10 min at room temperature. Subsequently, the mixture was frozen and the headspace evacuated and exposed to 1 bar $^{13}CO_2$. The reaction mixture was stirred for 15 min while warming to room temperature, followed by removal of the volatiles in vacuum. The residue was dissolved in C$_6$D$_6$, the solution was filtered and 1,4-dioxane was added as internal standard to determine the yield of **11** (0.0061 mmol, 28%). Subsequently, phenylsilane (0.8 µL, 0.0061 mmol) was added to the NMR tube. After careful shaking, the solution was analyzed by NMR spectroscopy. Product **12** was present with an NMR yield of 0.0034 mmol (15%).

**$^1$H NMR** (400 MHz, C$_6$D$_6$, 298 K): δ −8.80 (t, $^2J_{P,H}$ = 47.1 Hz, 2 H, Co–**H**), 0.82–0.84 (m, 12 H), 1.04 (d, $^3J_{H,H}$ = 6.7 Hz, 6 H, $^i$Pr–C**H**$_3$), 1.15 (d, $^3J_{H,H}$ = 6.7 Hz, 6 H, $^i$Pr–C**H**$_3$), 2.85 (m, NC**H**$_3$, 6 H), 2.90–2.94 (m, 8 H, C**H**$_2$), 4.42–4.51 (m, 4 H, $^i$Pr–C**H**). 5.79 (td, $^3J_{P,H}$ = 9.0 Hz, $^3J_{C,H}$ = 3.4 Hz, 1 H, Si–**H**), 7.23–7.28 (m, 6H, Ar–C**H**), 7.90 (d, $^3J_{H,H}$ = 7.8 Hz, 2 H, Ar–C**H**), 8.48 (d, $^1J_{C,H}$ = 201.7 Hz, 1 H, OC**H**O), 8.73–8.75 (m, 2 H, Ar–C**H**).

**$^{31}$P{$^1$H} NMR** (162 MHz, C$_6$D$_6$, 298 K): δ 170.8.

**$^{13}$C{$^1$H} NMR** (101 MHz, C$_6$D$_6$, 298 K): δ 20.6–21.2 (m, CH$_3$, $^i$Pr–**C**H$_3$), 30.3 (m, CH$_3$, N**C**H$_3$), 40.3–40.5 (m, **C**H$_2$), 44.2 (CH, $^i$Pr–**C**H), 127.0 (Ar–**C**H), 128.4 (Ar–**C**H), 131.5 (Ar–**C**H), 134.5 (Ar–**C**H), 138.2 (Ph–**C**), 146.4 (Ph–**C**), 162.1 (O**C**HO), 165.6 (m, Triazine-$o$–**C**).

Two Ph–**C**H and the Triazine-$p$–C signal could not be properly located.

**HRMS (ESI$^+$):** calcd. for [$^{13}$C$^{12}$C$_{33}$H$_{55}$O$_2$N$_9$P$_2$SiCo]$^+$ = [M–H]$^+$: 771.30833; found: 771.30812.
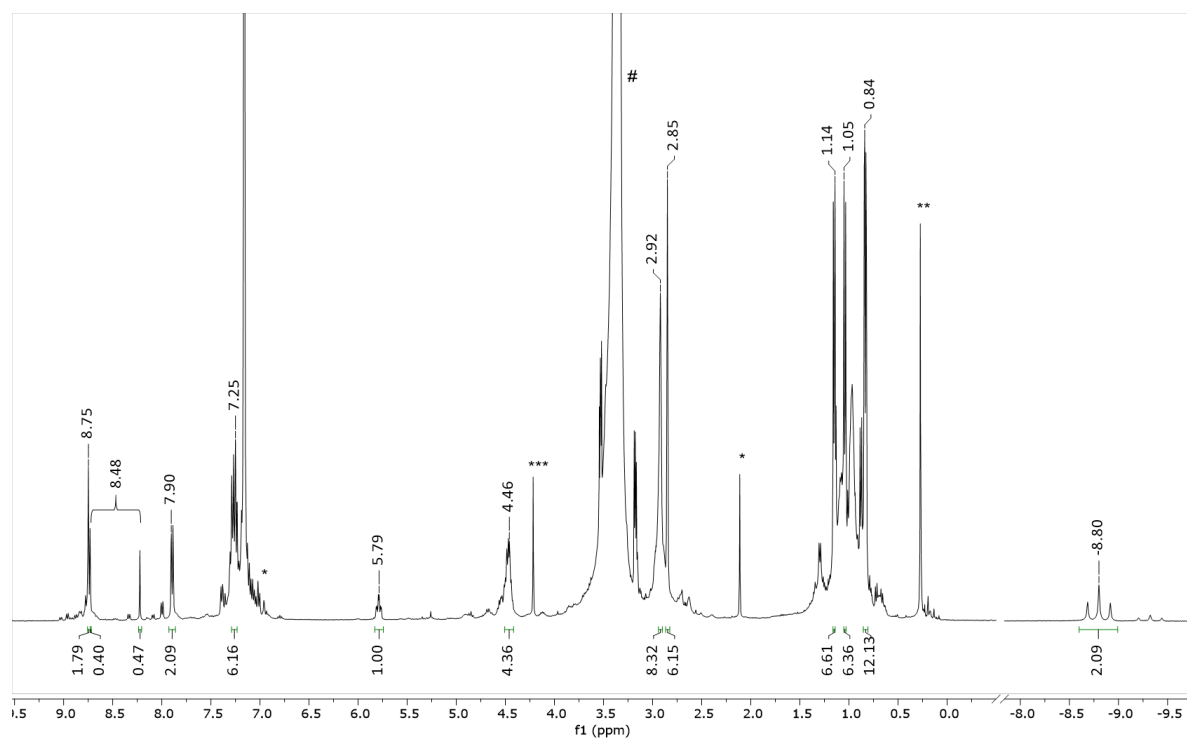
**Figure S16:** $^1$**H NMR spectrum (400 MHz, C$_6$D$_6$, 298 K)** of **12** (* Toluene, ** silicone grease, *** phenylsilane, # 1,4-dioxane).
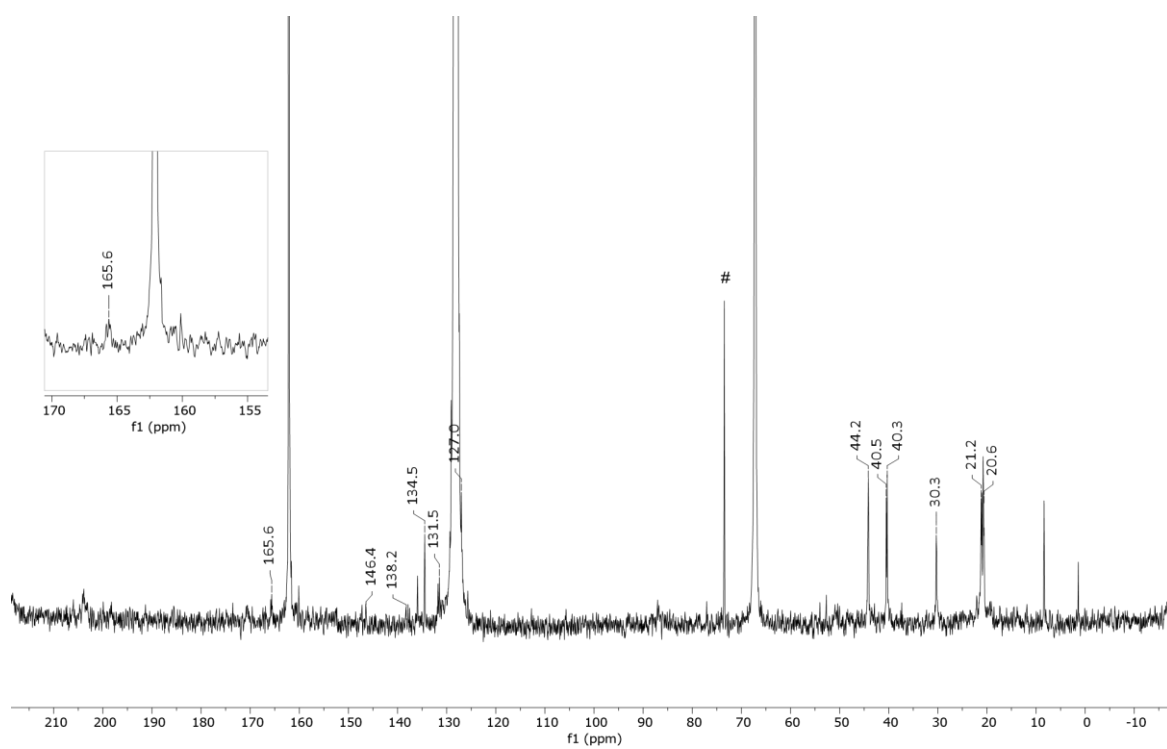


**Figure S17:** $^{13}$**C{**$^1$**H} NMR spectrum (101 MHz, 298 K, C$_6$D$_6$)** of **12**. # unidentified impurity.
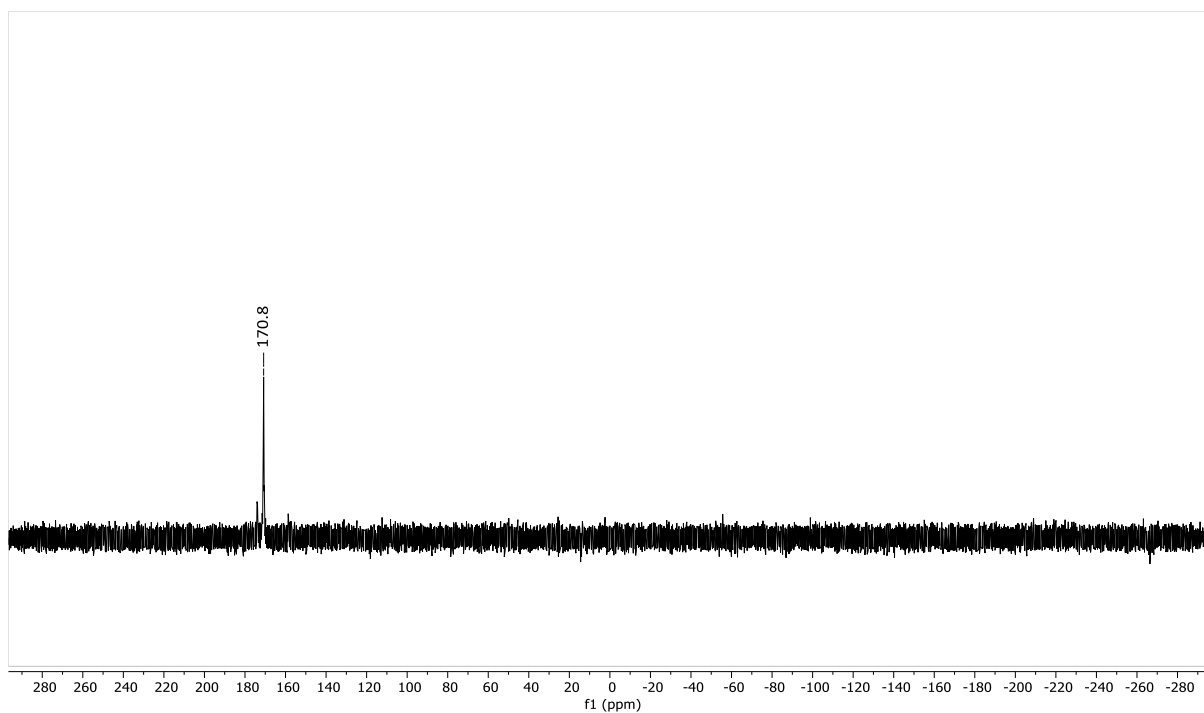
**Figure S18:** $^{31}P\{^1H\}$ NMR spectrum (162 MHz, $C_6D_6$, 298 K) of **12**.
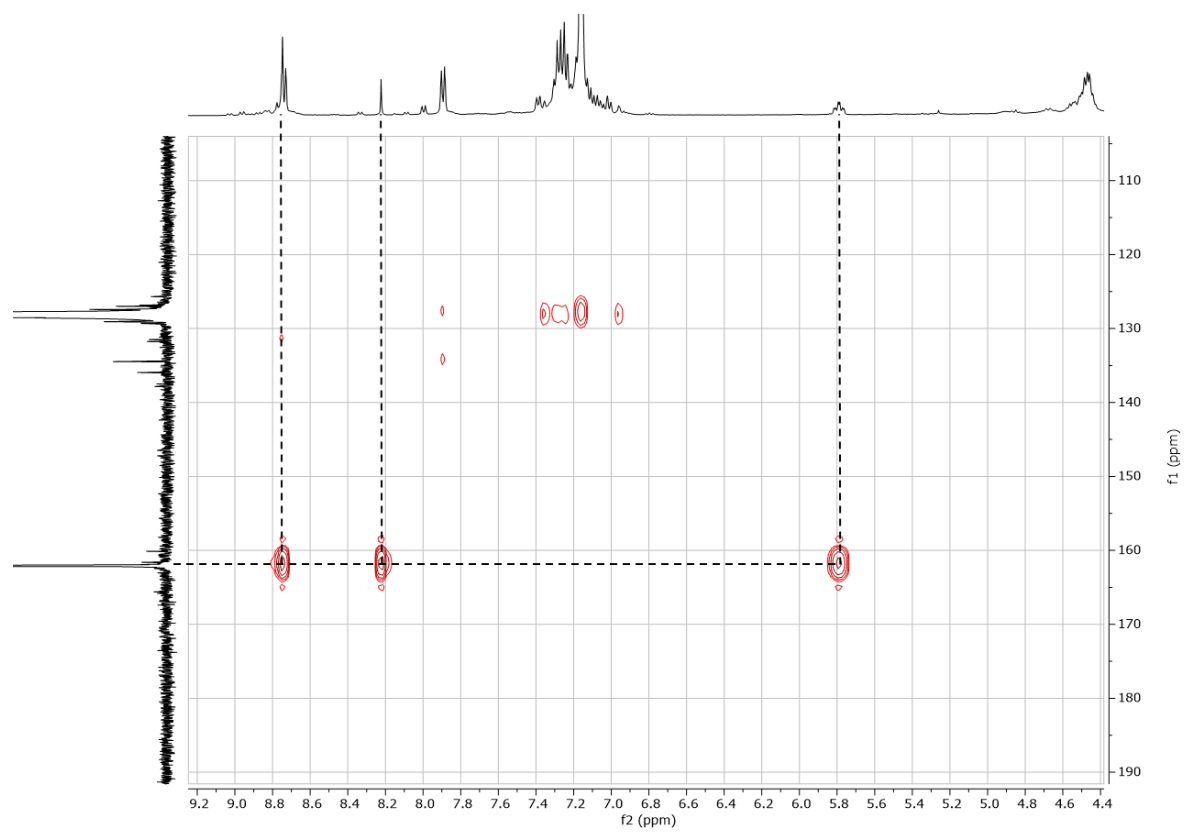


**Figure S19:** $^{13}C^1H$ HMBC NMR spectrum (298 K, $C_6D_6$) of **12**.

## 2.2 Catalytic Hydrosilylation of Carbon Dioxide

### 2.2.1 Catalytic activity of 9

In a flame dried Schlenk tube, solvent (0.5 mL), the respective additive, and phenylsilane (271 mg, 2500 µmol) were added to the respective catalyst (5 µmol). Followed by the addition of $CO_2$ by one freeze-pump-thaw cycle, the flask was left open to a continuous stream of $CO_2$. The reaction mixture was stirred at 80 °C for 4 h. After that, mesitylene was added as an internal standard. The mixture was filtered through a syringe filter and the amount of silylated products was analyzed by quantitative $^{13}C\{^1H\}$ NMR spectroscopy in accordance to the previous reports[2-3] with an estimated error of ±5%.

**Table S1:** Hydrosilylation of carbon dioxide with phenylsilane.

| Entry | Catalyst | Additive | Conversion Si–H | TON Formate | TON Acetal | TON Methoxide |
|-------|----------|----------|-----------------|-------------|------------|---------------|
| 1 | 5 | 4 mol% KOtBu | 29% | 25 | 18 | 7 |
| 2 | 5 | 2.1 mol% NaBEt$_3$H | 41% | 13 | 39 | 12 |
| 3 | 9 | - | 35% | 40 | 43 | 11 |

Cobalt catalyst **5** or **9** (1 mol%), $CO_2$ (1 bar), PhSiH$_3$ (2500 µmol), 80 °C, 4 h.
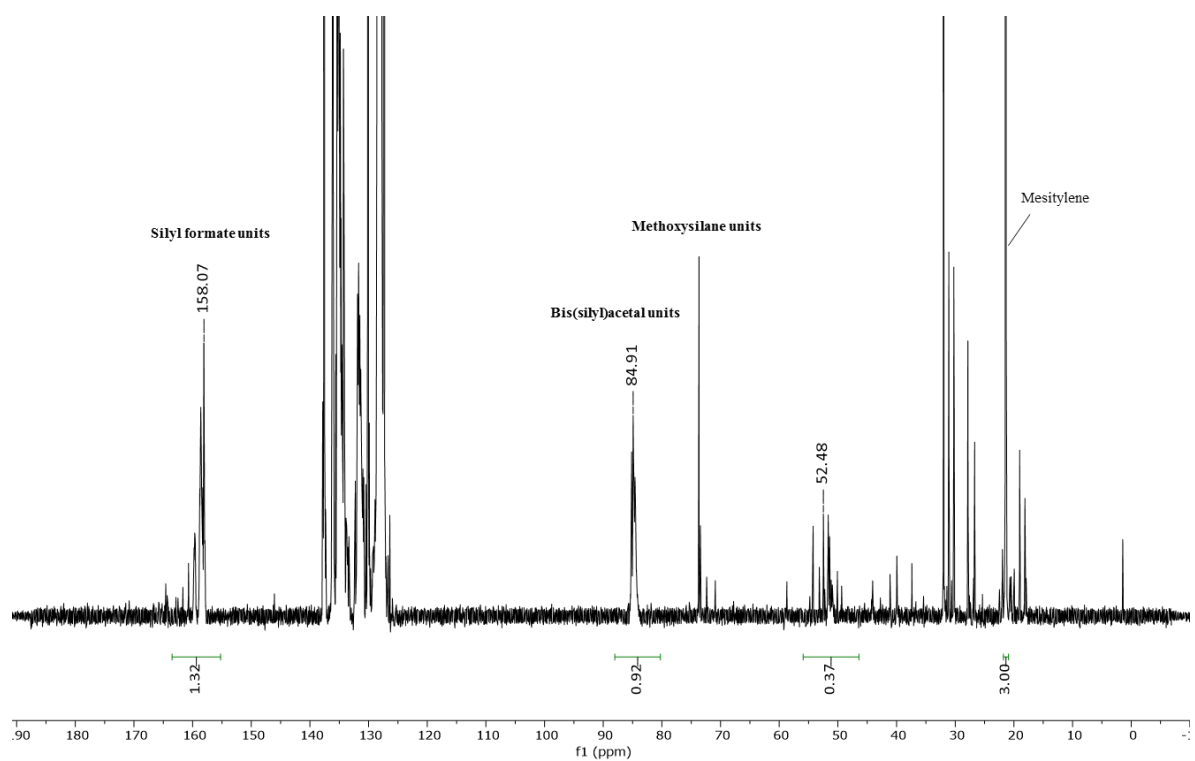
**Figure S20:** $^{13}C\{^1H\}$ **NMR spectrum (126 MHz, 298 K, C₆D₆)** of the reaction mixture for Table S1, Entry 1.
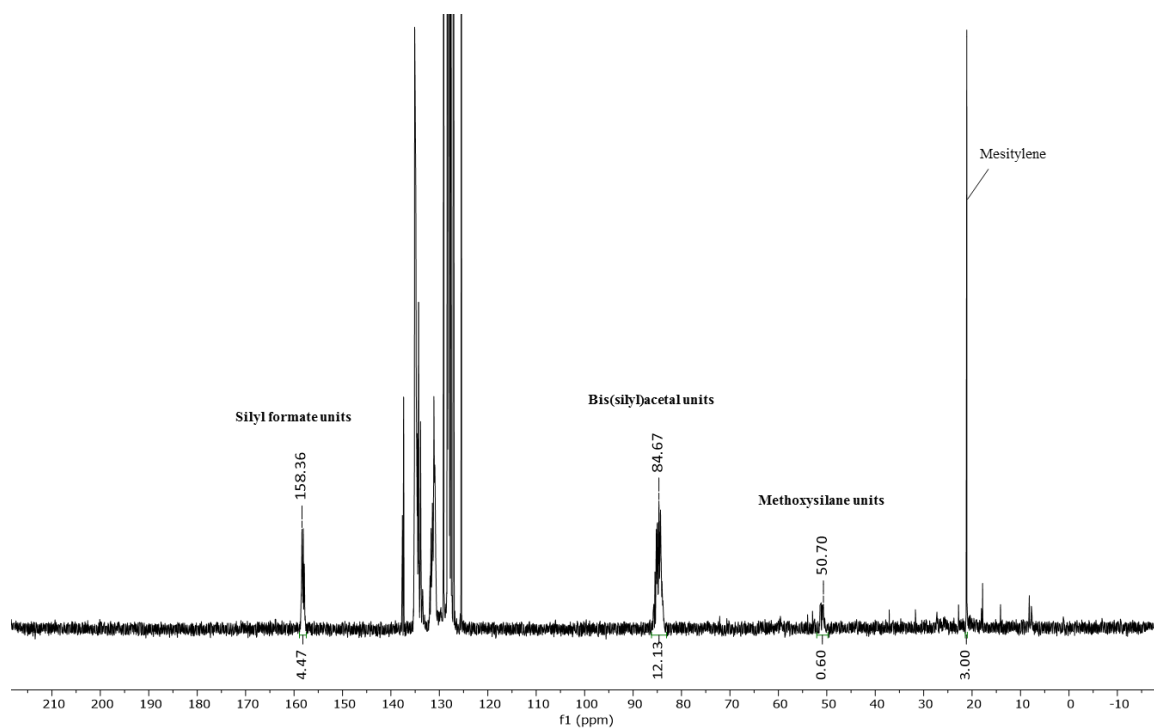


**Figure S21:** $^{13}C\{^1H\}$ **NMR spectrum (126 MHz, 298 K, C₆D₆)** of the reaction mixture for Table S1, Entry 2.
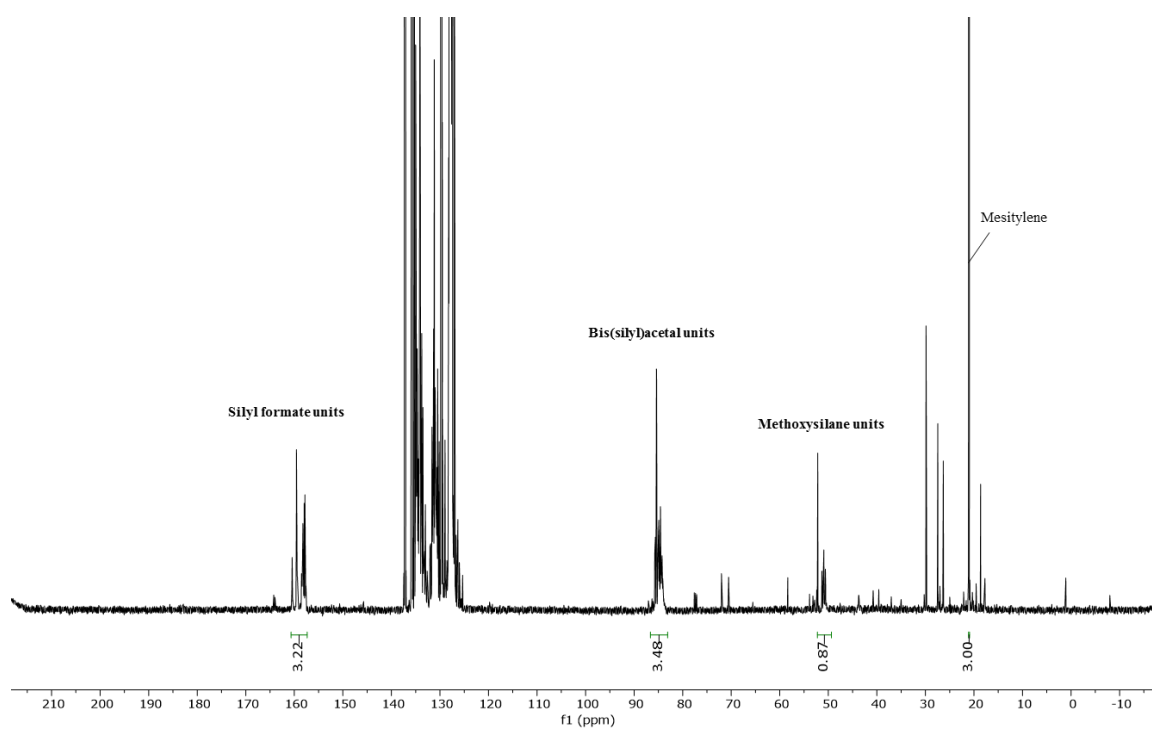
**Figure S22:** $^{13}C\{^1H\}$ **NMR spectrum (126 MHz, 298 K, C$_6$D$_6$)** of the reaction mixture for Table S1, Entry 3.

### 2.2.2 Catalytic activity of 10 and 11

In a flame-dried Schlenk tube, phenylsilane (271 mg, 2500 µmol) and benzene-$d_6$ (0.5 mL) were added to the respective catalyst (5 µmol). Subsequently, $^{13}CO_2$ (1 bar) was added by one freeze-pump-thaw cycle, and the reaction mixture was stirred at 80 °C for 4 h. After that, mesitylene (30 mg, 0.25 mmol) was added as an internal standard. The mixture was filtered through a syringe filter, and the silylated products were analyzed by quantitative $^{13}C\{^1H\}$ NMR spectroscopy by following the procedure reported in previous reports[2-3] with an estimated error of ±5%.

**Table S2:** Hydrosilylation of carbon dioxide with phenylsilane.

| Entry | Catalyst | Conversion $^{13}CO_2$ | Selectivity Formate | Selectivity Acetal | Selectivity Methoxide |
|-------|----------|-----------|-----------|-----------|-----------|
| 1 | 10 | 35% | 83% | 10% | 7% |
| 2 | 11 | 78% | 53% | 34% | 13% |

Cobalt catalyst **10** or **11** (0.2 mol%), $^{13}CO_2$ (1 bar), $C_6D_6$, PhSiH$_3$ (2500 µmol), 80 °C, 4 h.
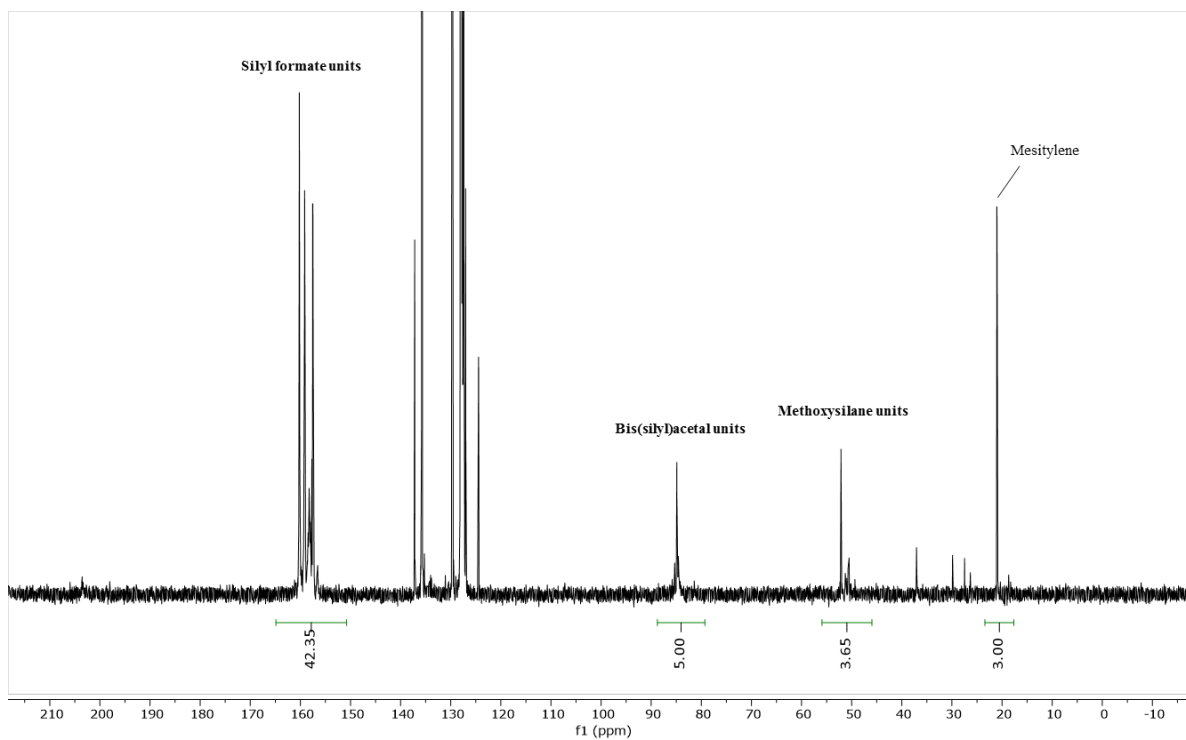
**Figure S23:** $^{13}C\{^1H\}$ **NMR spectrum (126 MHz, 298 K, C₆D₆)** of the reaction mixture for Table S2, Entry 1.
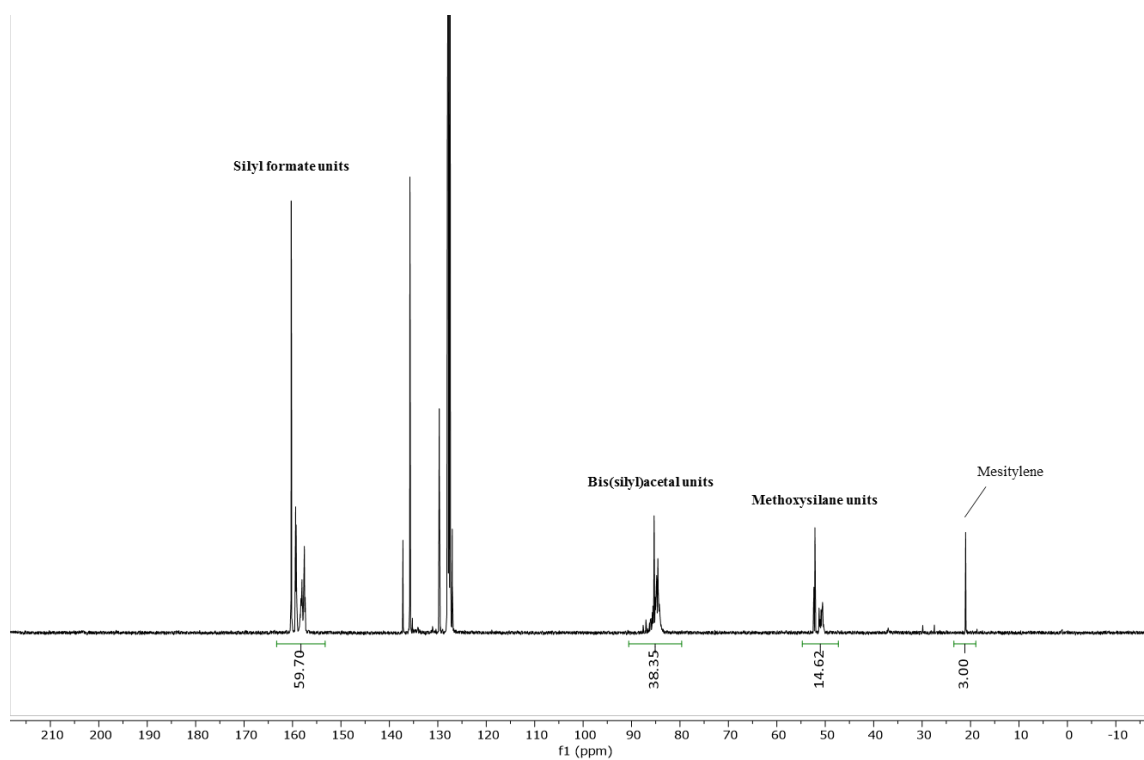


**Figure S24:** $^{13}C\{^1H\}$ **NMR spectrum (126 MHz, 298 K, C₆D₆)** of the reaction mixture for Table S2, Entry 2.

## 2.3 Control Experiments

### 2.3.1 Reaction of 10 with CO₂
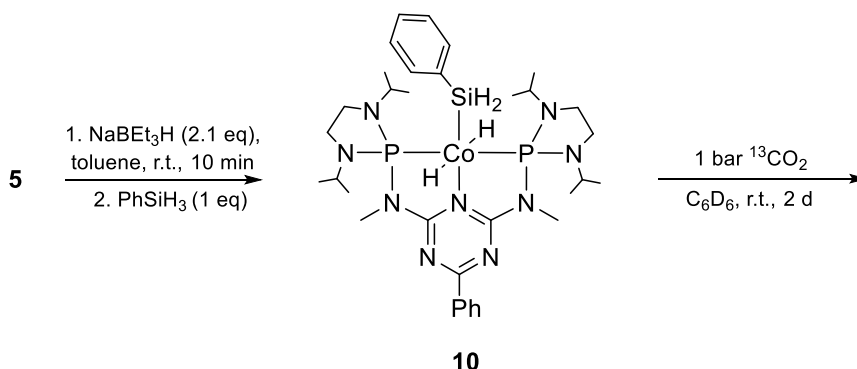


NaBEt$_3$H (46 µL, 0.046 mmol, 1M in toluene) was added to **5** (15 mg, 0.022 mmol) in toluene (1 mL). The mixture was stirred for 10 min at room temperature. After that time, the volatiles were removed in vacuo, and C$_6$D$_6$ (0.6 mL) were added to the residue. The mixture was filtrated, 15 mg 1,4-dioxane was added as an internal standard and the yield of **9** determined by $^1$H NMR spectroscopy (0.0068 mmol, 31%). Subsequently, the required amount of phenylsilane (0.8 µL, 0.0068 mmol) was added. The solution was frozen, the headspace evacuated and the mixture exposed to 1 bar $^{13}$CO$_2$. After thawing and careful shaking, the sample was analyzed by NMR spectroscopy.
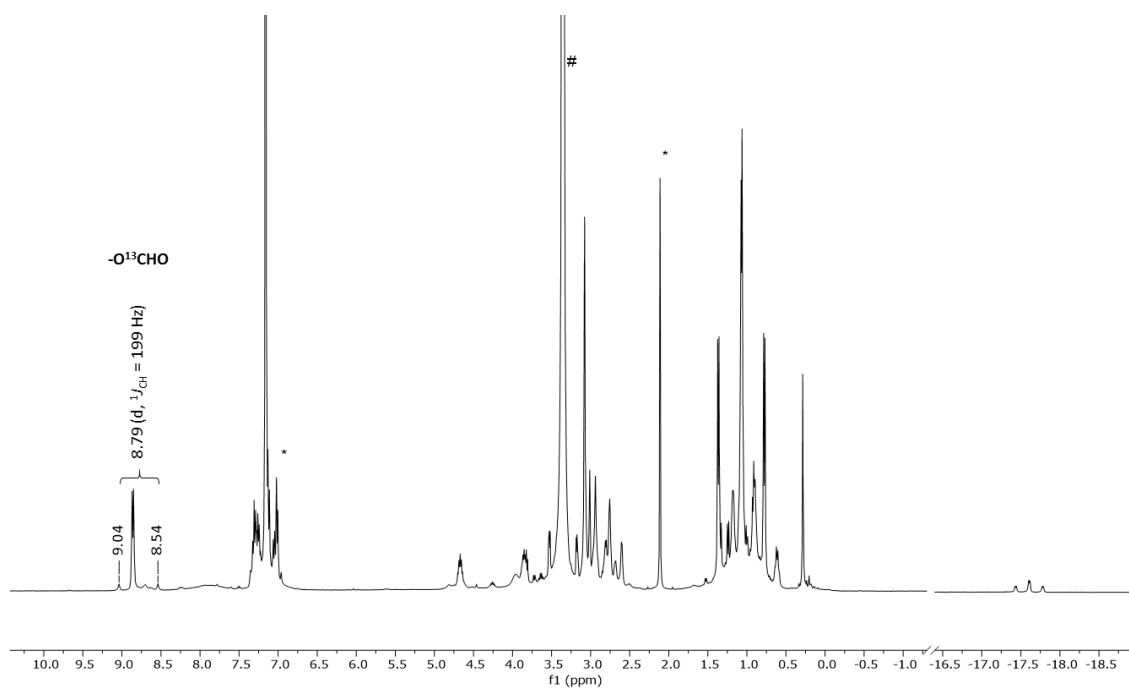
**Figure S25:** **$^1$H NMR (400 MHz, 298 K, C$_6$D$_6$)** of the reaction of **10** with $^{13}$CO$_2$ after 2 d; * - Toluene, # - 1,4-dioxane.
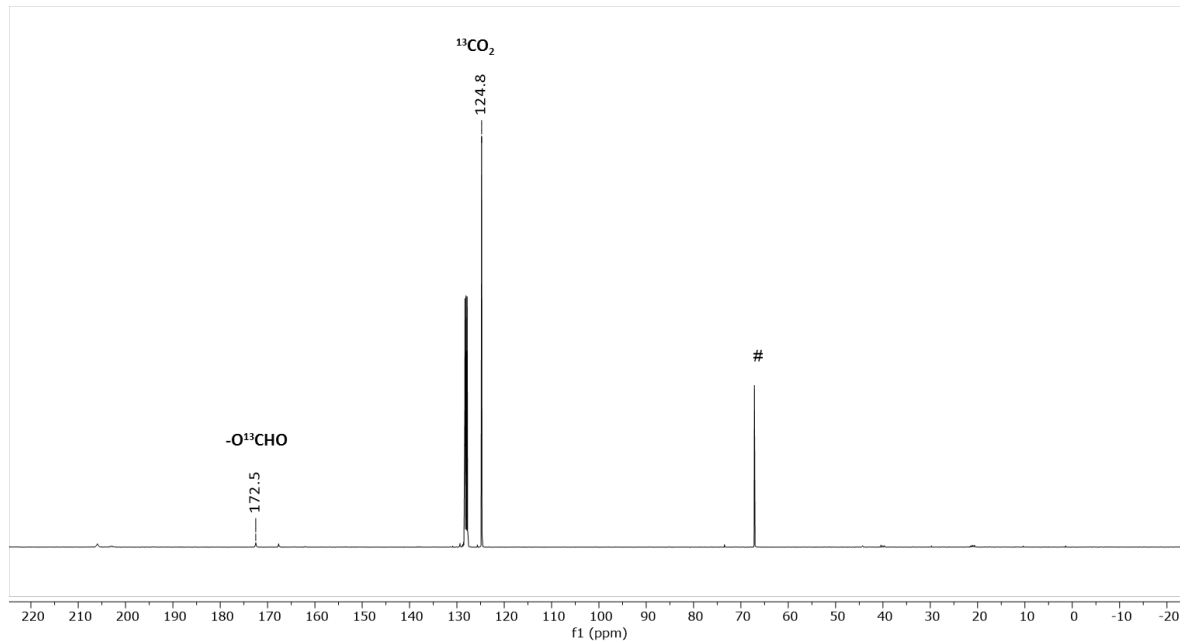


**Figure S26:** **$^{13}$C{$^1$H} NMR spectrum (101 MHz, C$_6$D$_6$, 298 K)** of the reaction of **10** with $^{13}$CO$_2$ after 2 d; # - 1,4-dioxane.

S25
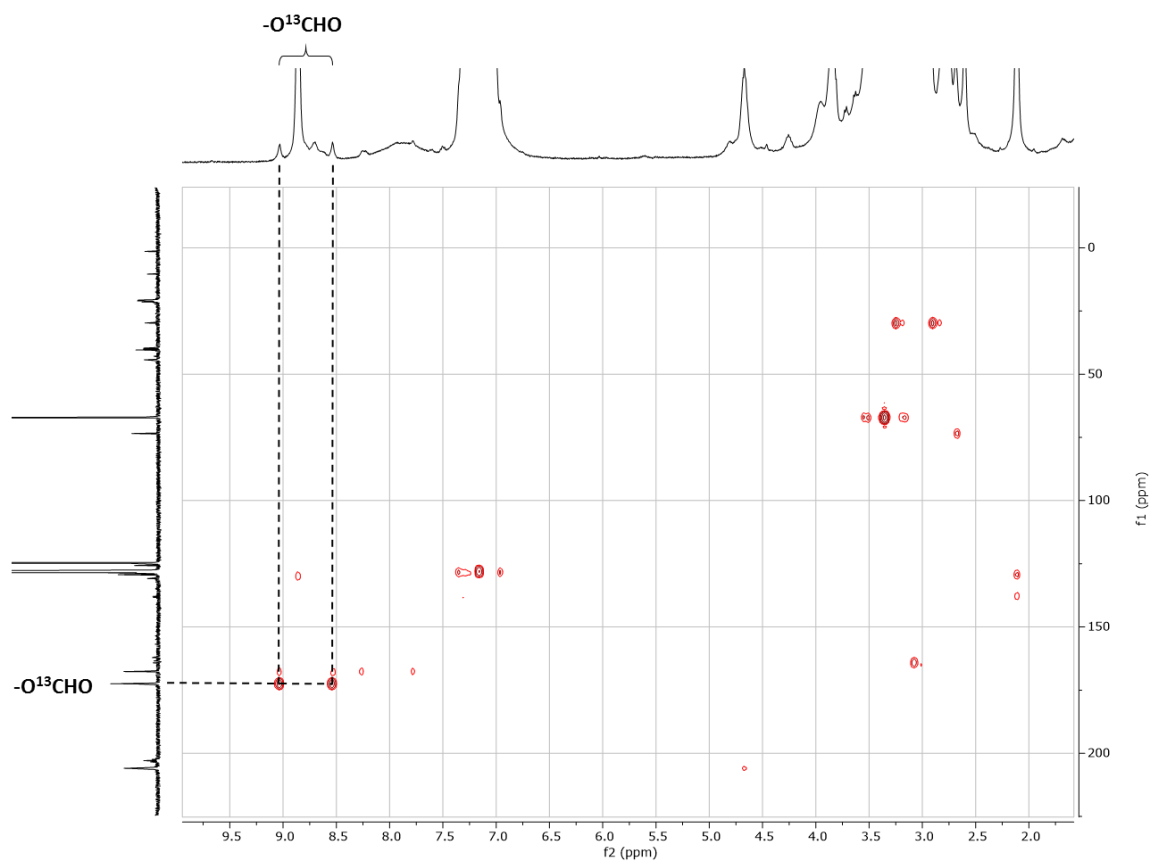
**Figure S27:** $^{13}C^{1}H$ **HMBC NMR spectrum (298 K, C₆D₆)** of the reaction of **10** with $^{13}CO_2$ after 2 d.

## 2.3.2 Reaction of 11 with xs. PhSiH₃
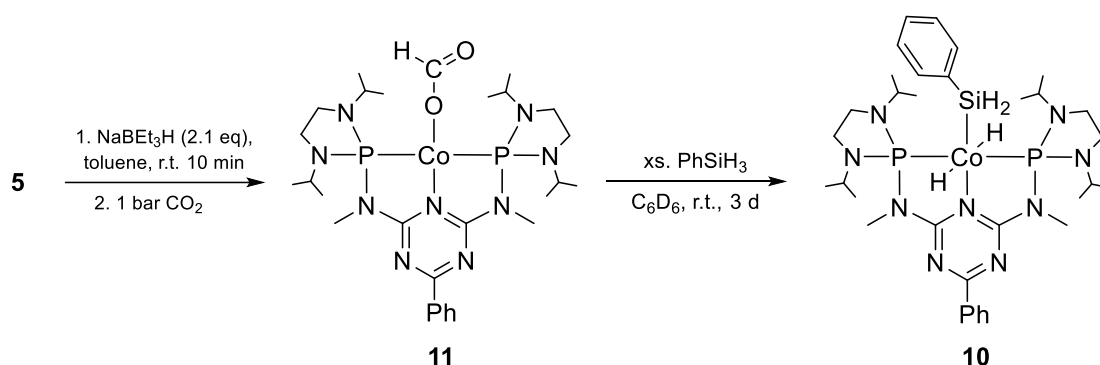


NaBEt₃H (46 µL, 0.046 mmol, 1M in toluene) was added to **5** (15 mg, 0.022 mmol) in toluene (1 mL). The mixture was stirred for 10 min at room temperature. Subsequently, the mixture was frozen and the headspace evacuated and exposed to 1 bar $^{13}CO_2$. The reaction mixture was stirred for 15 min while warming to room temperature, followed by removal of the volatiles in vacuum. The residue was dissolved in $C_6D_6$, the solution was filtered and phenylsilane (2.8 µL, 0.022 mmol) was added. The tube was carefully shaken and the solution analyzed by NMR spectroscopy.
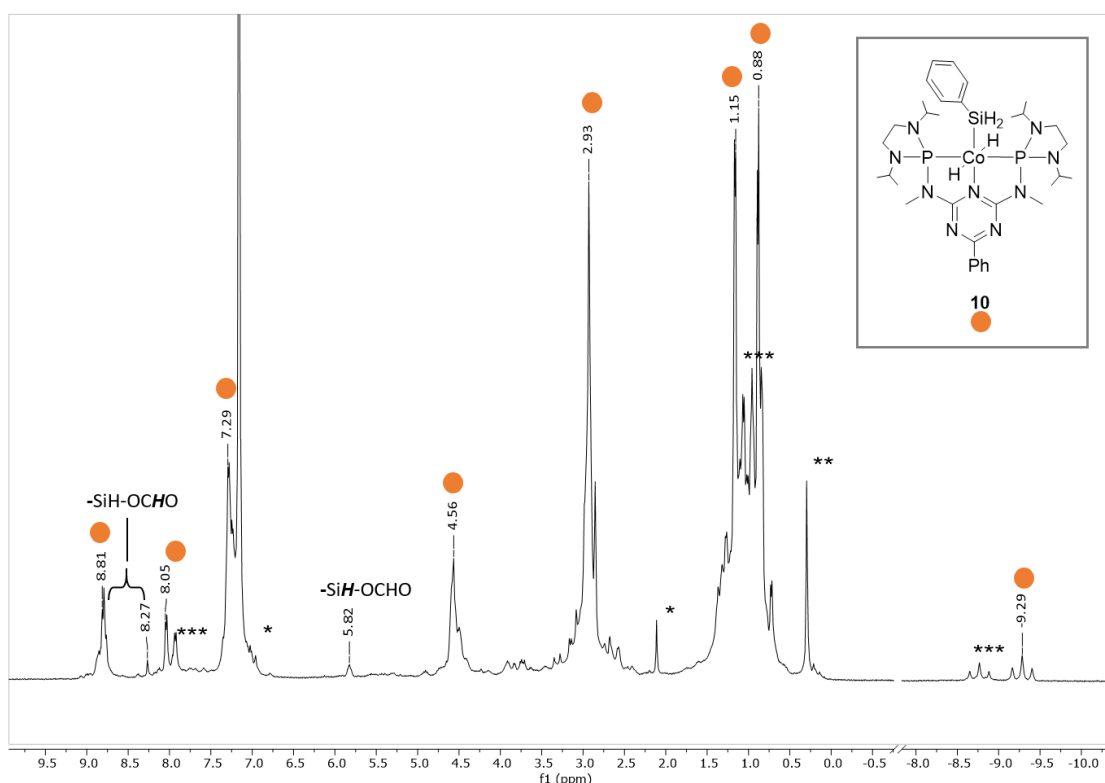


**Figure S 28:** $^1$H NMR (400 MHz, 298 K, $C_6D_6$) of the reaction of **11** with xs. PhSiH₃, * - Toluene, ** - silicone grease, *** - unidentified impurity).
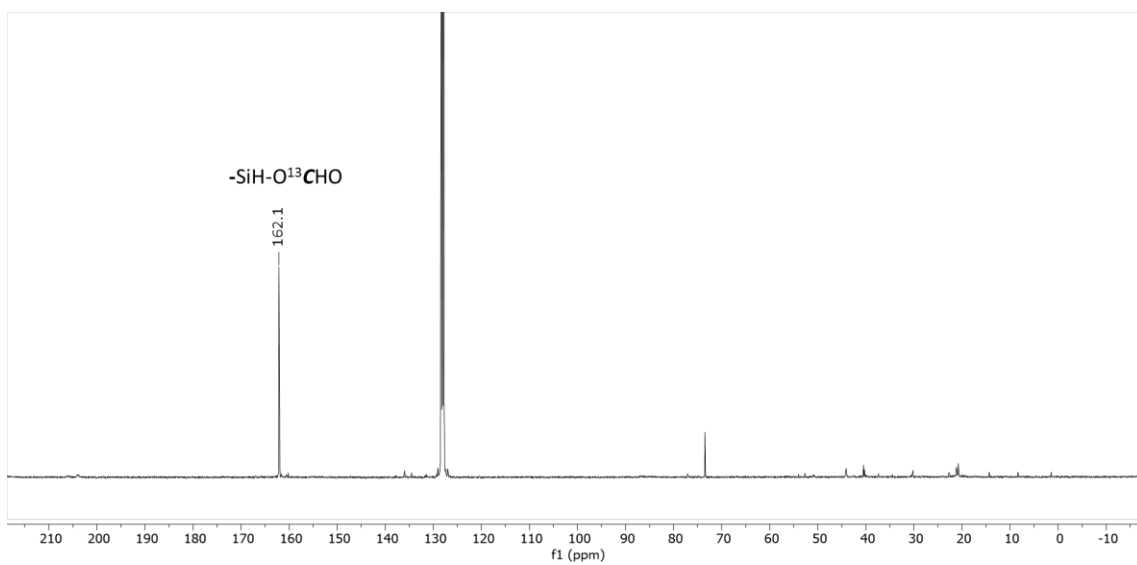
**Figure S29:** $^{13}C\{^1H\}$ **NMR (101 MHz, 298 K, C$_6$D$_6$)** of the reaction of **11** with xs. PhSiH$_3$.
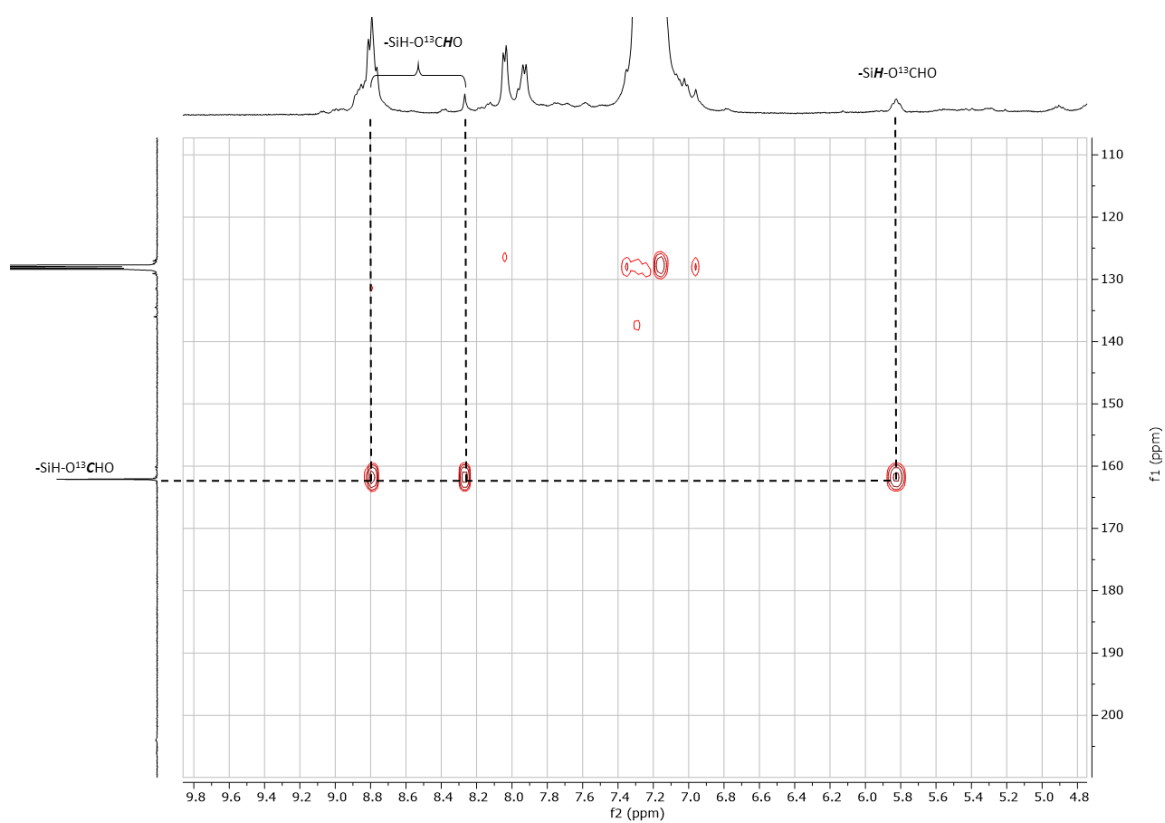


**Figure S30:** $^{13}C^1H$ **HMBC NMR (298 K, C$_6$D$_6$)** of the reaction of **11** with xs. PhSiH$_3$.

### 2.3.3 Preparation of 10 from 5, KO$^t$Bu and PhSiH$_3$

Phenylsilane (6.3 mg, 0.058 mmol) was added to a mixture of **5** (20.0 mg, 0.029 mmol) and potassium *tert*-butoxide (6.5 mg, 0.058 mmol) in toluene (3 mL). The resulting mixture was stirred for 10 min at room temperature. The volatiles were then removed under vacuum. The residue was washed with pentane (2×5 mL) and dried under reduced pressure. Finally, the product was dissolved in C$_6$D$_6$ (0.5 mL) and analyzed by $^1$H NMR spectroscopy.
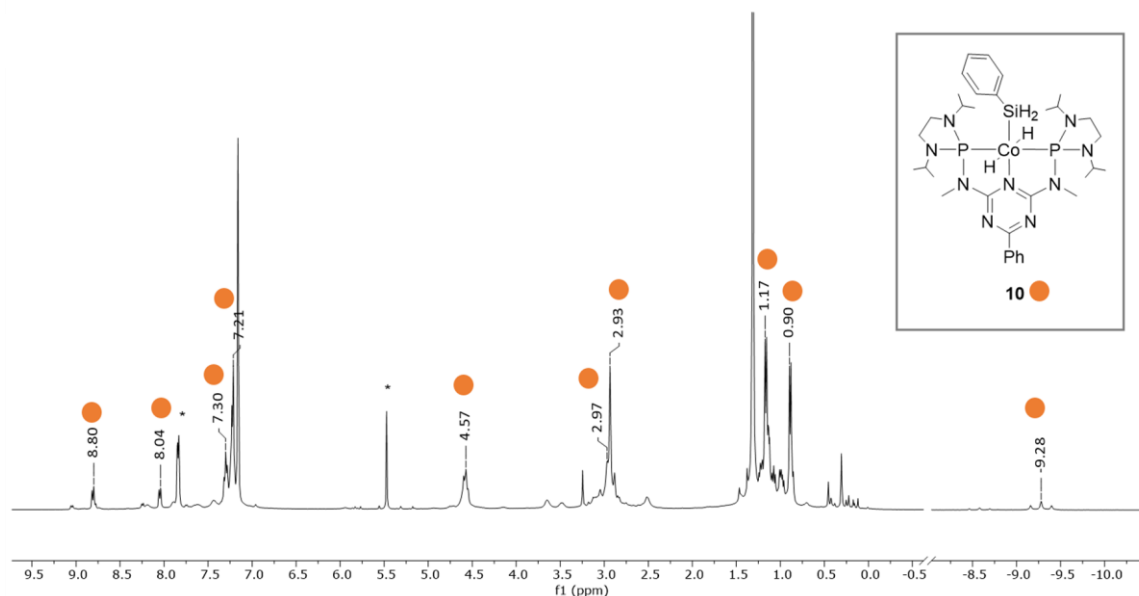


**Figure S31: $^1$H NMR (400 MHz, 298 K, C$_6$D$_6$)** of the reaction of **5** with KO$^t$Bu and PhSiH$_3$ (* unidentified impurity).

### 2.3.4 Reaction of 5 and KO*t*Bu

KO*t*Bu (3.3 mg, 0.029 mmol) was added to a solution of **5** (10.00 mg, 0.015 mmol) in $C_6D_6$ (0.5 mL) in an NMR tube at room temperature. The mixture was carefully shaken and analyzed by ^{1}H NMR spectroscopy after 5 min. The ^{1}H NMR spectrum indicates that **5** remains present in the reaction mixture.
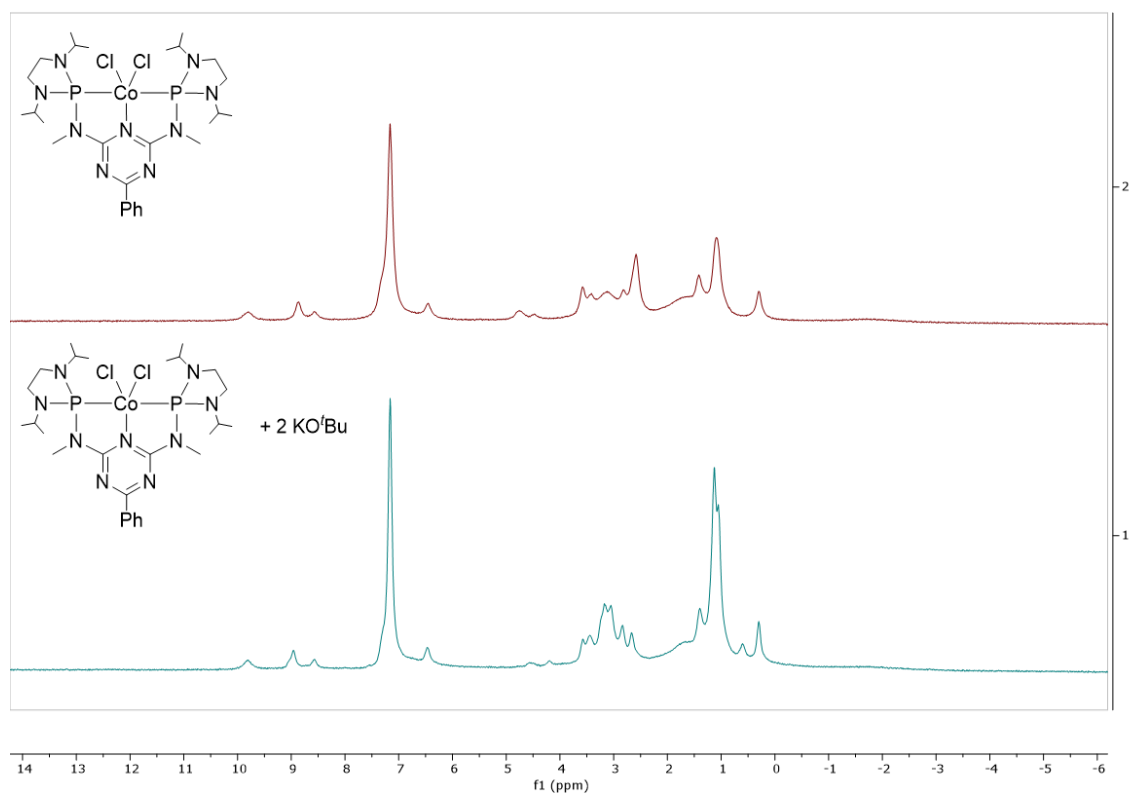


**Figure S32:** [1]**H NMR (400 MHz, 298 K, $C_6D_6$)** of **5** (top) and a mixture of **5** and KO*t*Bu (bottom).

## 2.3.5 NMR analysis of the reaction mixture containing 9, PhSiH₃, and CO₂ under catalytic conditions

A solution of NaBEt₃H in toluene (46 µL, 0.046 mmol) was added to **5** (15 mg, 0.022 mmol) in toluene-d₈ (0.6 ml), and the mixture was stirred for 5 min at room temperature. PhSiH₃ (27 µL, 0.22 mmol) was added, and the solution was transferred into an NMR tube. After one freeze-pump-thaw-cycle, CO₂ (1 bar) was added. The tube was shaken carefully, and the mixture was analyzed by $^1$H NMR spectroscopy. The $^1$H NMR spectra indicate that neither **10** nor **12** formed during the reaction.
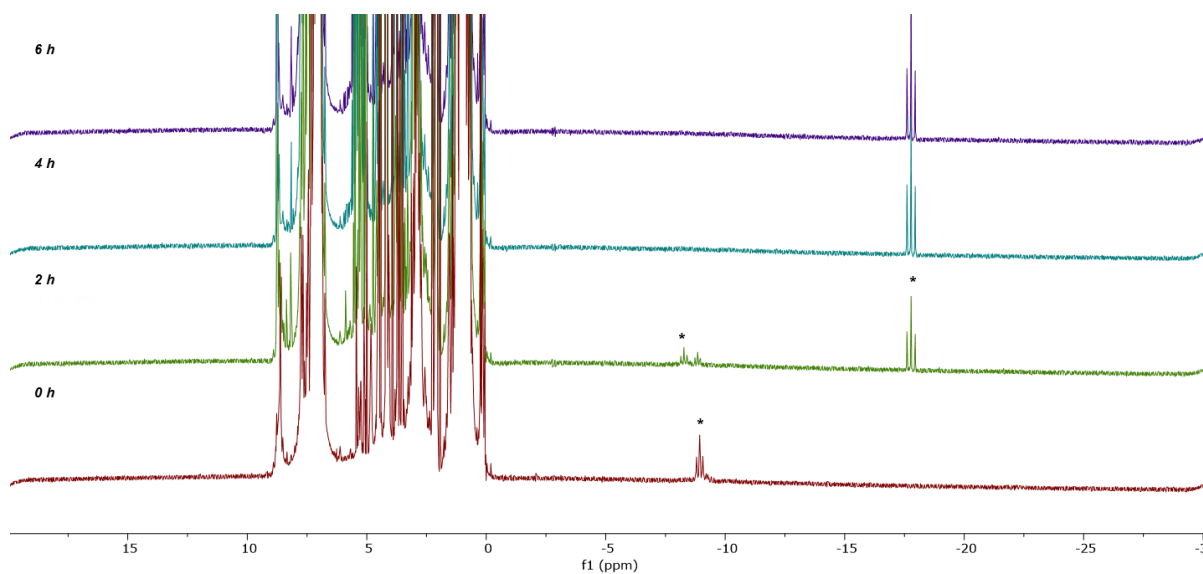


**Figure S 33:** $^1$**H NMR (400 MHz, 298 K, C₆D₆)** of the reaction of **9** with 10 eq PhSiH₃ and 1 bar $^{13}$CO₂ (* unidentified compounds).

# 3. Computational Details

All calculations were performed with the ORCA program package.[4-5] All structures were calculated without any truncations of the ligand. The hybrid functional B3LYP was used for geometry optimizations and frequency calculations[6-8] in combination with the atom-pairwise dispersion correction with Becke-Johnson damping D3BJ from Grimme.[9-10] Key bond lengths and angles of the calculated structure of **5** were compared to the molecular structure determined by X-ray diffraction[1] to justify the functional choice. Several DFT functionals could successfully reproduce the geometrical features within the expected uncertainty of the calculations, as seen in Table S3. To accelerate the calculations, the density fitting (RI-J) and "chain of spheres" (COSX) approximation (RIJCOSX)[11] was used with the auxiliary basis set def2/J.[12] The geometry optimizations and frequency calculations were performed with Ahlrichs triple-$\zeta$ quality basis set Def2-TZVP for the first coordination sphere (Co, Cl, P, Si, O, N, $CO_2$, and H), while the triple-$\zeta$ quality basis set Def2-SVP was used for all other atoms.[13] The following thresholds were used for optimizations: energy change tolerance of $1 \times 10^{-6}$ a.u., root mean square gradient of $3 \times 10^{-5}$ a.u., a maximum gradient of $1 \times 10^{-4}$ a.u., root mean square step of $6 \times 10^{-4}$ a.u. and maximum step of $1 \times 10^{-3}$ a.u. The DFT integration grid was set to Grid5. Tight convergence criteria (energy tolerance of $1 \times 10^{-8}$ a.u.) were used for all calculations. The geometry optimizations were performed without constraints. The conductor-like polarizable continuum (CPCM) model was used to describe solvation effects during the geometry optimizations and frequency calculations of the intermediates. Benzene ($\varepsilon = 2.28$) was chosen as solvent. Calculations of harmonic vibrational frequencies were performed to ensure that the number of imaginary frequencies is zero for local minima and one for transition states. The zero-point vibrational energies, thermal corrections to the electronic energies (298 K) and the entropy contributions were taken from the frequency calculations. The Gibbs free energies of each structure were corrected to the reference state of 1M by a factor of +1.89 kcal mol$^{-1}$.

**Table S3:** Molecular structure of **5** (left) and key bond lengths and angles of the molecular structure of **5** determined by XRD[1] and the calculated geometry obtained with different DFT functionals (def2-TZVP (selected atoms), def-SVP; no solvation model). H atoms were omitted for clarity.
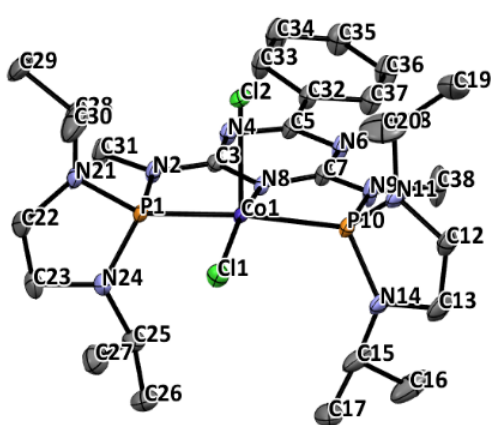


| Bond/Angle [Å / °] | XRD | B3LYP | BP86 | M06L |
|---|---|---|---|---|
| **Co1−Cl1 (plan)** | 2.22 | 2.25 | 2.22 | 2.25 |
| **Co1−Cl2 (ax)** | 2.39 | 2.43 | 2.37 | 2.43 |
| **Co1−P1** | 2.21 | 2.18 | 2.15 | 2.18 |
| **Co1−P10** | 2.22 | 2.19 | 2.15 | 2.18 |
| **Co1−N8** | 1.92 | 1.95 | 1.91 | 1.94 |
| **P1−N2** | 1.73 | 1.75 | 1.76 | 1.75 |
| **P1−N21** | 1.66 | 1.66 | 1.68 | 1.66 |
| **N2−C3** | 1.35 | 1.36 | 1.37 | 1.36 |
| **C3−N8** | 1.36 | 1.35 | 1.37 | 1.36 |
| **P10−N9** | 1.74 | 1.75 | 1.76 | 1.75 |
| **P10−N14** | 1.65 | 1.66 | 1.67 | 1.66 |
| **N9−C7** | 1.35 | 1.36 | 1.37 | 1.36 |
| **C7−N8** | 1.35 | 1.35 | 1.37 | 1.36 |
| **C7−N6** | 1.33 | 1.34 | 1.34 | 1.33 |
| **N2−C31** | 1.48 | 1.45 | 1.46 | 1.45 |
| **N9−C38** | 1.46 | 1.46 | 1.46 | 1.45 |
| **Cl1−Co1−Cl2** | 107.8 | 115.14 | 113.14 | 113.13 |
| **Cl1−Co1−P1** | 94.6 | 92.41 | 92.48 | 93.91 |
| **Cl1−Co1−N8** | 164.9 | 158.57 | 159.60 | 160.82 |
| **Cl1−Co1−P10** | 94.1 | 94.09 | 92.54 | 93.65 |
| **Cl2−Co1−P1** | 94 | 95.29 | 95.71 | 95.19 |
| **Cl2−Co1−N8** | 87.3 | 86.26 | 87.26 | 86.05 |
| **Cl2−Co1−P10** | 94.9 | 95.88 | 95.69 | 94.31 |
| **N8−Co1−P10** | 84.8 | 84.25 | 85.10 | 84.16 |
| **N8−Co1−P1** | 83.7 | 84.07 | 85.12 | 84.23 |
| **P1−Co1−P10** | 165.1 | 163.26 | 164.59 | 164.44 |
| **Co1−P1−N2** | 99.1 | 99.57 | 99.70 | 99.48 |
| **Co1−P1−N21** | 130.1 | 132.60 | 132.41 | 132.48 |
| **Co1−P10−N9** | 97.9 | 99.22 | 99.72 | 99.51 |
| **Co1−P10−N14** | 121.1 | 117.38 | 117.89 | 117.72 |
| **P1−N2−C3** | 117.1 | 116.33 | 115.80 | 116.68 |
| **P10−N9−C7** | 118.3 | 116.82 | 115.78 | 116.57 |

**Table S4: Imaginary frequencies calculated at the B3LYP level of theory.**

| TS | Imaginary frequency |
|----|---------------------|
| TS1 | $-155.67$ cm$^{-1}$ |
| TS2 | $-114.96$ cm$^{-1}$ |
| TS3 | $-188.43$ cm$^{-1}$ |
| TS4 | $-508.69$ cm$^{-1}$ |

**Table S5: Selected IR frequencies calculated at the B3LYP level of theory.**

| | | |
|---|---|---|
| **9** | Co–H | 1771.21 cm$^{-1}$ |
| **10** | H–Co–H | 1968.63 cm$^{-1}$, 1759.84 cm$^{-1}$ |
| **11** | C–O | 1667.89 cm$^{-1}$, 1313.92 cm$^{-1}$ |

**Figure S34: Geometries of the key intermediates and transition states. Selected C and H atoms were omitted for clarity.**

| 9 | 15 | 14 |
|---|---|---|
| Co–H 153 pm<br>Co–P 211 pm<br>Co–N 192 pm | Co–H 151 pm<br>Co–C 197 pm, Co–O2 223 pm<br>C–O1 121 pm, C–O2 124 pm | Co–H 146 pm<br>Co–Si 226 pm, Co–O 200 pm<br>C–O1 128 pm, C–O2 122 pm<br>C–H 111 pm |
| **18** | **23** | **TS1** |
| Co–H 162 pm<br>Co–O1 214 pm<br>C–O1 130 pm, C–O2 143 pm<br>C–H1 125 pm, C–H2 110 pm | Co–H 144 pm<br>Co–O 208 pm<br>Co–Si 235 pm<br>Si1–O 188 pm, Si2–O 161 pm | Co–H 152 pm<br>Co–C 255 pm<br>C–O1 118 pm, C–O2 117 pm |
| **TS2** | **TS3** | **TS4** |
| Co–H 148 pm<br>Co–C 205 pm<br>C–O 128 pm<br>C–H 109 pm<br>Co–O 206 pm | Co–H1 175 pm<br>Co–C 224 pm<br>C–H2, C–H3 111 pm<br>C–H1 118 pm<br>Co–O 207 pm | Co–H 145 pm<br>Co–Si 233 pm<br>C–O 140 pm<br>C–H1, H2, H3 110 pm<br>Co–O 214 pm<br>H–Co–Si 61°, Co–Si–O 60° |

**Table S6: Solvent-corrected electronic energies ($E_{el/sol}$) for B3LYP+D3BJ, non-thermal ZPE corrections ($E_{ZPE}$), thermal energy correction ($E_{therm}$), enthalpy correction ($H_{therm}$), and entropy correction (TS). All energies are given in Hartree.**

| Structure | $E_{el/sol}$ | $E_{ZPE}$ | $E_{therm}$ | $H_{therm}$ | -TS |
|---|---|---|---|---|---|
| $CO_2$ | -188.59082316 | 0.01009254 | 0.00249275 | 0.00094421 | 0.02409076 |
| $PhSiH_3$ | -522.62306798 | 0.11512786 | 0.00614051 | 0.00094421 | 0.03737384 |
| $(PhSiH_2)OCHO$ (13) | -711.24138829 | 0.13205729 | 0.00898981 | 0.00094421 | 0.04431007 |
| $(PhSiH_2O)_2CH_2$ (22) | -1233.90182292 | 0.25505252 | 0.01624663 | 0.00094421 | 0.06094851 |
| $(PhSiH_2)_2O$ | -1119.39429800 | 0.22127568 | 0.01314765 | 0.00094421 | 0.05411528 |
| HCHO | -114.49691885 | 0.02649370 | 0.00286769 | 0.00094421 | 0.02546616 |
| $(PhSiH_2)_2OCH_3$ (30) | -637.19372640 | 0.15004776 | 0.00891070 | 0.00094421 | 0.04390305 |
| 9 | -3614.22119186 | 0.74197559 | 0.04385247 | 0.00094421 | 0.11334509 |
| 15 | -3802.82316300 | 0.75760781 | 0.04568638 | 0.00094421 | 0.11610373 |
| 16 | -3802.82731445 | 0.75727365 | 0.04631487 | 0.00094421 | 0.11788196 |
| 11 | -3802.85431443 | 0.75907714 | 0.04666187 | 0.00094421 | 0.11928943 |
| 14 | -4325.51647979 | 0.87855285 | 0.05463116 | 0.00094421 | 0.13343127 |
| 17 | -4325.48664140 | 0.87970985 | 0.05367398 | 0.00094421 | 0.13157557 |
| 18 | -4325.47227760 | 0.88100400 | 0.05365315 | 0.00094421 | 0.13300930 |
| 19 | -4325.51042515 | 0.88123012 | 0.05459299 | 0.00094421 | 0.13434208 |
| 20 | -4848.15996623 | 1.00170727 | 0.06065275 | 0.00094421 | 0.14480975 |
| 21 | -4848.16838838 | 1.00248332 | 0.06032170 | 0.00094421 | 0.14380293 |
| 23 | -4848.11667875 | 0.99748734 | 0.06169819 | 0.00094421 | 0.14676139 |
| 24 | -4733.65053753 | 0.96786039 | 0.05928532 | 0.00094421 | 0.14306677 |
| 25 | -3728.75713840 | 0.77504443 | 0.04485354 | 0.00094421 | 0.11420655 |
| 26 | -3728.75150766 | 0.77750765 | 0.04615111 | 0.00094421 | 0.11759074 |

| | | | | |
|---|---|---|---|---|
| 27 | -3728.77961898 | 0.77642975 | 0.04681643 | 0.00094421 | 0.11923123 |
| 28 | -4251.43160104 | 0.89643538 | 0.05326325 | 0.00094421 | 0.13026408 |
| 29 | -4251.43124395 | 0.89621151 | 0.05329487 | 0.00094421 | 0.13140029 |
| TS1 | -3802.81779069 | 0.75445254 | 0.04702311 | 0.00094421 | 0.11950221 |
| TS2 | -3728.74583492 | 0.77374444 | 0.04545687 | 0.00094421 | 0.11599282 |
| TS3 | -3728.74644868 | 0.77475099 | 0.04599720 | 0.00094421 | 0.11786869 |
| TS4 | -4251.41376763 | 0.89513166 | 0.05350123 | 0.00094421 | 0.13096423 |
| | | | | | |
| 32 | -4135.69960031 | 0.84341703 | 0.04964877 | 0.00094421 | 0.12456998 |
| HOCHO | -189.76410412 | 0.03325969 | 0.00324382 | 0.00094421 | 0.02826891 |
| 33 | -4514.14165709 | 0.89493632 | 0.05807373 | 0.00094421 | 0.14081998 |
| 34 | -4514.11187907 | 0.89603953 | 0.05700756 | 0.00094421 | 0.13875009 |
| 10 | -4136.90444144 | 0.86109751 | 0.05114815 | 0.00094421 | 0.12670454 |
| 10' | -4136.89333287 | 0.86120018 | 0.04944349 | 0.00094421 | 0.12351069 |
| 12 | -4325.53215650 | 0.87761517 | 0.0536108 | 0.00094421 | 0.13205296 |
| 12' | -4325.52153701 | 0.87759930 | 0.05373372 | 0.00094421 | 0.13238953 |
| 14' | -4325.50037247 | 0.87789228 | 0.05306100 | 0.00094421 | 0.13089307 |
| 14'' | -4325.48535324 | 0.87963195 | 0.05316185 | 0.00094421 | 0.13014690 |
| 20' | -4848.14959490 | 0.99985204 | 0.06099713 | 0.00094421 | 0.14664719 |
| 20'' | -4848.14009420 | 1.00129345 | 0.05944333 | 0.00094421 | 0.14184815 |

# 4. Orbital Localization Output

## Occupied MOs

```
-------------------------------------------------------------------------------
                        ORCA ORBITAL LOCALIZATION
-------------------------------------------------------------------------------
```

Input orbitals are from              ... 571_C2B3a_567.gbw
Output orbitals are to               ... 571_C2B3a_567_loc_output.gbw
Max. number of iterations            ... 128
Localizations seeded randomly        ... on
Convergence tolerance                ... 1.000e-06
Treshold for strong local MOs        ... 9.500e-01
Treshold for bond MOs                ... 8.500e-01
Operator                   ... 0
Orbital range for localization       ... 150 to 175
Localization criterion               ... PIPEK-MEZEY
Warning: cannot retrieve the overlap matrix S
      ... Overlap was succesfully recalculated
Entering Jacobi type localization:
Using Cholesky decomposition as initial guess.
Initial value of the localization sum :    7.716486
ITERATION  0 : L=  8.7363572136 DL= 1.02e+00 (MAX-T)=  44.507
ITERATION  1 : L=  8.7588276417 DL= 2.25e-02 (MAX-T)=  4.327
ITERATION  2 : L=  8.7589654237 DL= 1.38e-04 (MAX-T)=  1.064
ITERATION  3 : L=  8.7589705261 DL= 5.10e-06 (MAX-T)=  0.118
ITERATION  4 : L=  8.7589705548 DL= 2.87e-08 (MAX-T)=  0.006
LOCALIZATION SUM CONVERGED

```
-------------------------------------------------------------------------------
               LOCALIZED MOLECULAR ORBITAL COMPOSITIONS
-------------------------------------------------------------------------------
```

The Mulliken populations for each LMO on each atom are computed
The LMO`s will be ordered according to atom index and type
 (A) Strongly localized MO`s have populations of >=0.950 on one atom
 (B) Two center bond orbitals have populations of >=0.850 on two atoms
 (C) Other MO`s are considered to be `delocalized`

FOUND  -  0 strongly local MO`s
      -  6 two center bond MO`s
      - 20 significantly delocalized MO`s

Bond-like localized orbitals:
MO 155: 89O -  0.477872  and  88O -  0.467100
MO 154: 89O -  0.572257  and  88O -  0.336421
MO 153:  2P -  0.064217  and  0Co -  0.846502
MO 152:  1H -  0.518583  and  0Co -  0.384474
MO 151:  1H -  0.001081  and  0Co -  0.941438
MO 150:  1H -  0.001145  and  0Co -  0.932398
More delocalized orbitals:
MO 175:  0Co- 0.084 2P - 0.107 11P - 0.435
MO 174:  5N - 0.118 6C - 0.109 9N - 0.341
MO 173: 58C - 0.166 60C - 0.220 61H - 0.122 64C - 0.248 67H - 0.163
MO 172: 20C - 0.151 21H - 0.143 22C - 0.078 26C - 0.093
MO 171: 30C - 0.162 32C - 0.219 35H - 0.117 36C - 0.255 37H - 0.169

MO 170: 3N - 0.441 5N - 0.207
MO 169: 48C - 0.179 49H - 0.166 50C - 0.121 53H - 0.079
MO 168: 72C - 0.118 73C - 0.103 74H - 0.084 75C - 0.093 76H - 0.087 77C - 0.112 79C - 0.093 80H - 0.082
81C - 0.101 82H - 0.088
MO 167: 58C - 0.223 59H - 0.201 60C - 0.090 63H - 0.091 64C - 0.099 65H - 0.100
MO 166: 30C - 0.218 31H - 0.208 32C - 0.096 33H - 0.100 36C - 0.100 39H - 0.100
MO 165: 73C - 0.247 75C - 0.245 79C - 0.251 81C - 0.245
MO 164: 72C - 0.224 75C - 0.131 77C - 0.382 79C - 0.126
MO 163: 5N - 0.627 9N - 0.095
MO 162: 12N - 0.597 14H - 0.078
MO 161: 7N - 0.198 10N - 0.446
MO 160: 19N - 0.586
MO 159: 7N - 0.641 9N - 0.094
MO 158: 0Co- 0.622 87C - 0.107 88O - 0.173
MO 157: 40N - 0.594
MO 156: 2P - 0.081 47N - 0.584
Localized MO's were stored in: 571_C2B3a_567_loc_output.gbw

## Unoccupied MOs

--------------------------------------------------------------------------------
                    ORCA ORBITAL LOCALIZATION
--------------------------------------------------------------------------------


Input orbitals are from              ... 571_C2B3a_567.gbw
Output orbitals are to               ... 571_C2B3a_567_loc_output.gbw
Max. number of iterations        ... 128
Localizations seeded randomly        ... on
Convergence tolerance          ... 1.000e-06
Treshold for strong local MOs        ... 9.500e-01
Treshold for bond MOs          ... 8.500e-01
Operator                 ... 0
Orbital range for localization       ... 176 to 195
Localization criterion             ... PIPEK-MEZEY
Warning: cannot retrieve the overlap matrix S
       ... Overlap was succesfully recalculated
Entering Jacobi type localization:
Using Cholesky decomposition as initial guess.
Initial value of the localization sum :    4.273645
ITERATION  0 : L=   6.2460209101 DL= 1.97e+00 (MAX-T)= 34.041
ITERATION  1 : L=   6.2585078673 DL= 1.25e-02 (MAX-T)=  3.460
ITERATION  2 : L=   6.2585738627 DL= 6.60e-05 (MAX-T)=  0.236
ITERATION  3 : L=   6.2585759518 DL= 2.09e-06 (MAX-T)=  0.048
ITERATION  4 : L=   6.2585760379 DL= 8.61e-08 (MAX-T)=  0.018
LOCALIZATION SUM CONVERGED


--------------------------------------------------------------------------------
              LOCALIZED MOLECULAR ORBITAL COMPOSITIONS
--------------------------------------------------------------------------------


The Mulliken populations for each LMO on each atom are computed
The LMO`s will be ordered according to atom index and type
 (A) Strongly localized MO`s have populations of >=0.950 on one atom
 (B) Two center bond orbitals have populations of >=0.850 on two atoms
 (C) Other MO`s are considered to be `delocalized`

FOUND  -  0 strongly local MO`s
      -  1 two center bond MO`s
      - 19 significantly delocalized MO`s

S39

Bond-like localized orbitals:

MO 176:  2P -  0.013424  and   0Co -  0.920925

More delocalized orbitals:

MO 195:  72C - 0.130 73C - 0.302 77C - 0.178 79C - 0.302

MO 194:  5N - 0.153 6C - 0.137 8C - 0.364 9N - 0.080 10N - 0.083

MO 193:  87C - 0.585 88O - 0.134 89O - 0.172

MO 192:  72C - 0.130 75C - 0.302 77C - 0.178 81C - 0.302

MO 191:  3N - 0.082 4C - 0.316 6C - 0.211 7N - 0.151 9N - 0.089

MO 190:  0Co- 0.143 2P - 0.518

MO 189:  0Co- 0.094 11P - 0.575

MO 188:  0Co- 0.316 87C - 0.478

MO 187:  11P - 0.690

MO 186:  0Co- 0.310 1H - 0.335

MO 185:  2P - 0.448 43H - 0.076 46H - 0.095

MO 184:  74H - 0.082 76H - 0.264 78H - 0.346 80H - 0.290 82H - 0.110

MO 183:  21H - 0.101 24H - 0.192 26C --0.099 28H - 0.347 54C --0.118 55H - 0.077 56H - 0.278

MO 182:  17H - 0.271 22C --0.103 25H - 0.207 83C --0.141 84H - 0.232 85H - 0.099 86H - 0.117

MO 181:  41C --0.142 42H - 0.289 43H - 0.150 60C --0.157 61H - 0.144 62H - 0.141 63H - 0.188 65H - 0.100 66H - 0.088 70H - 0.095

MO 180:  44C --0.132 45H - 0.354 46H - 0.105 50C --0.160 51H - 0.118 52H - 0.119 53H - 0.279

MO 179:  14H - 0.205 16C --0.119 18H - 0.418 26C --0.089 27H - 0.188 29H - 0.092

MO 178:  46H - 0.120 57H - 0.110 68C --0.208 69H - 0.218 70H - 0.101 71H - 0.342 74H - 0.076

MO 177:  13C --0.077 15H - 0.190 32C --0.221 33H - 0.218 34H - 0.206 35H - 0.238 38H - 0.093 85H - 0.108

Localized MO's were stored in: 571_C2B3a_567_loc_output.gbw

# 5. Off-cycle intermediates and alternative isomers

The relative energies of complexes **10** and **12** and the alternative isomers **10'**, **12'**, **14'**, **14''**, **20'**, and **20''** were calculated. The Gibbs free energies [kcal mol$^{-1}$] are displayed in Figure S35 relative to complex **9** (0.0 kcal mol$^{-1}$).
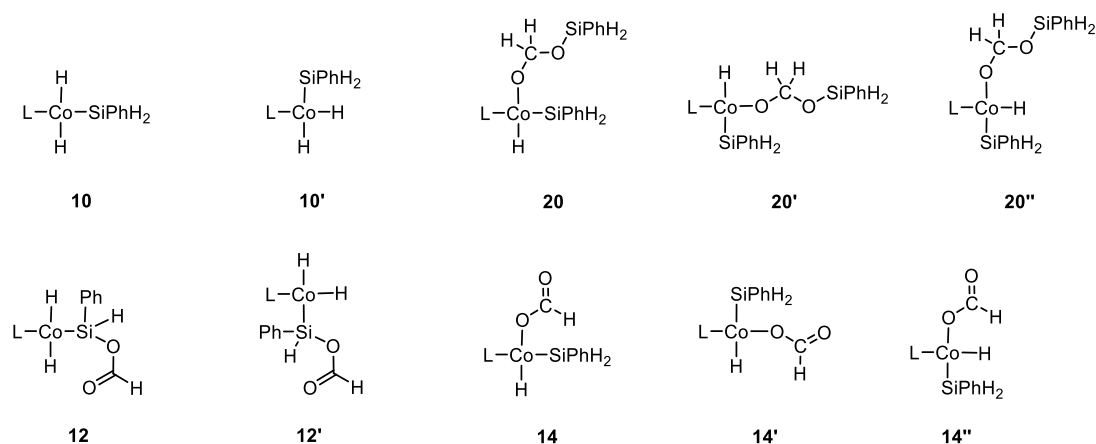


**Scheme S1:** Isomers of **10**, **12**, **14**, and **20**.
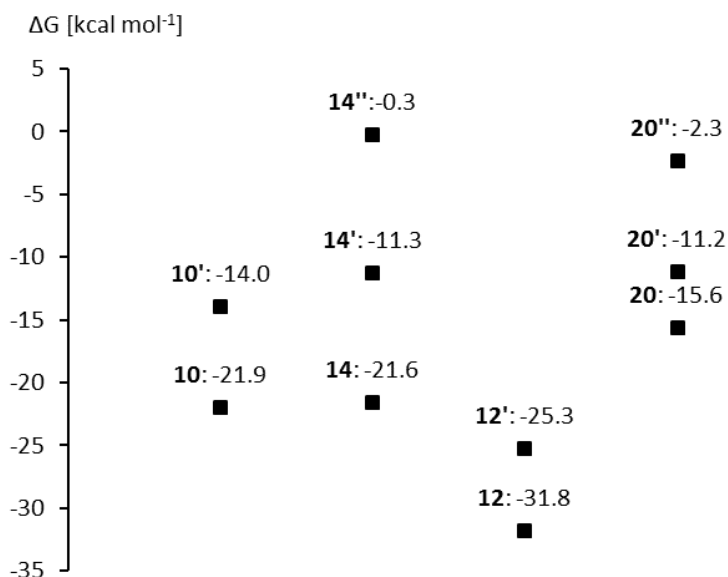


**Figure S35:** Gibbs free energies [kcal mol$^{-1}$] relative to **9** (0.0 kcal mol$^{-1}$) (B3LYP-D3BJ/def2-TZVP (selected atoms), def-SVP) for different isomers of the complexes **10**, **12**, **14**, and **20**.

# 6. Multiple Si−H activations

The computational mechanistic studies were performed based on the generation of **13** as the product of a single activation of a phenylsilane Si−H bond. This, therefore, constitutes a simplification of the reaction network since subsequent activation of the remaining Si−H bonds of the silylated products is, in theory, possible and since a complex product mixture is observed. Complex **33** forming after oxidative addition of phenylsilyl formate **13** to **11** has a relative Gibbs free energy of $-30.6$ kcal mol$^{-1}$. The product from the reductive elimination (**34**) has a relative energy of $-10.6$ kcal mol$^{-1}$. This indicates that this reaction pathway is competing with the oxidative addition of phenylsilane to **11**.
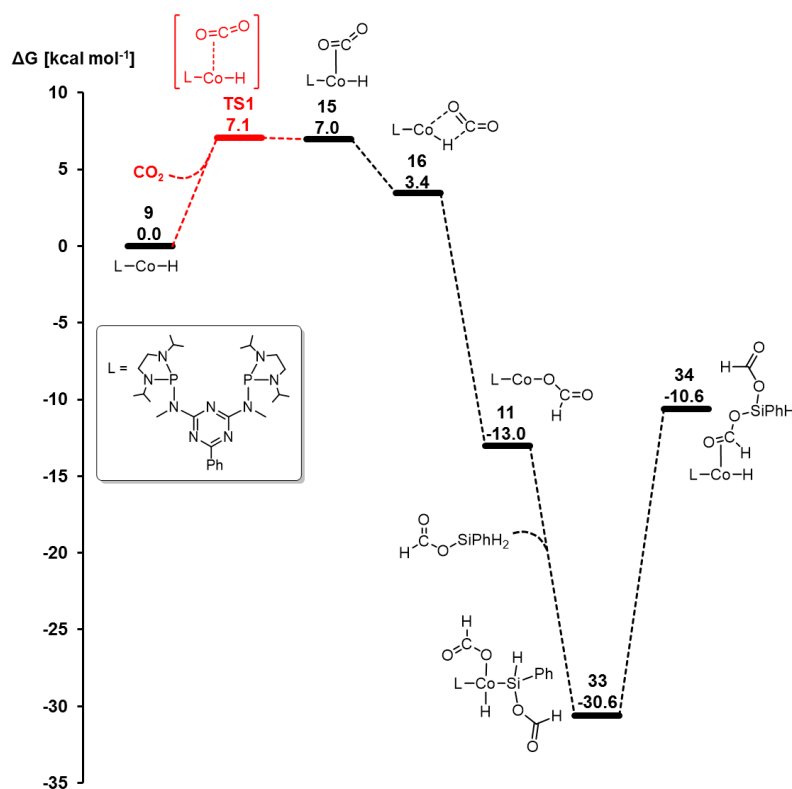


**Figure S36:** Relative Gibbs free energies [kcal mol$^{-1}$] (B3LYP-D3BJ/def2-TZVP (selected atoms), def-SVP) for the formation of a bis(formyl)silane.

# 7. Reductive elimination of formic acid

As an additional reaction pathway, we investigated the reductive elimination of formic acid from an alternative isomer **14'**, which is 10.3 kcal mol$^{-1}$ higher in energy than **14**. Cobalt(I) silyl complex **32** has a relative energy of −0.5 kcal mol$^{-1}$. Due to the high energy of **14'** compared to **14** and the low thermodynamic driving force of the reaction of **9**, $CO_2$ and $PhSiH_3$ to **32** and formic acid, the reaction is considered less favored than the generation of silyl formate **13** from **14**.
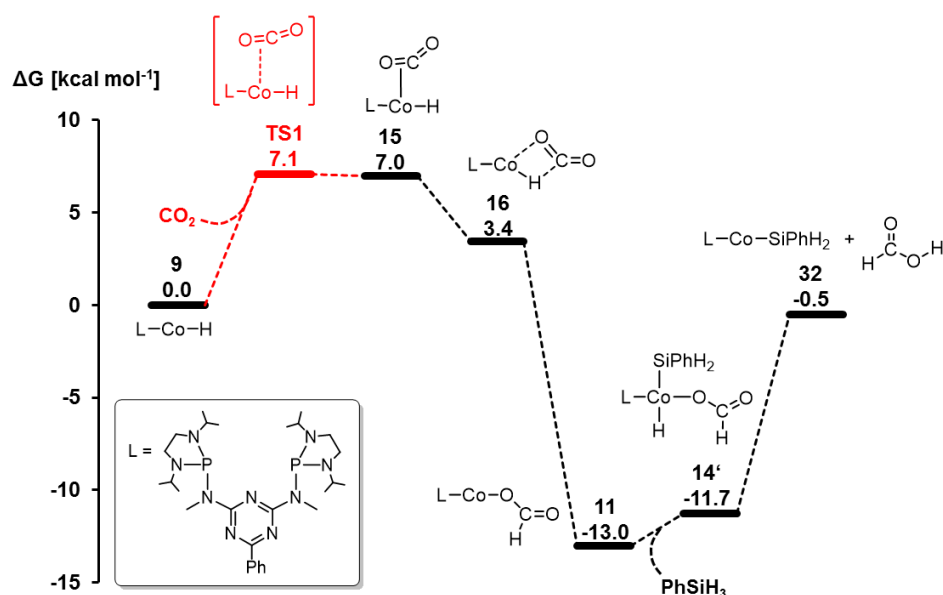


**Figure S37:** Relative Gibbs free energies [kcal mol$^{-1}$] (B3LYP-D3BJ/def2-TZVP (selected atoms), def-SVP) for the generation of **32** and formic acid from **9**, $CO_2$, and $PhSiH_3$.

# 8. Kinetic Simulations

The graphical representations of the product concentrations were obtained after microkinetic modeling.[14] Rate constants for each step were obtained with the Eyring equation using the energy difference between the connected intermediates and transition states. The free energy barriers of reactions that do not pass a transition state were neglected.

$$k = \frac{k_B T}{h} \exp\left(-\frac{\Delta G^{\#}}{RT}\right)$$

To simplify the reaction network, we only considered the insertion into the phenylsilane [Si]−H bond since under catalytic conditions, phenylsilane is in high excess compared to $CO_2$ (Figure 12). Furthermore, complexes **10** and **12** have a low relative energy ($-21.9$ kcal mol$^{-1}$ and $-31.8$ kcal mol$^{-1}$) and may supposedly accumulate during the catalytic reaction. However, under operative conditions, **10** or **12** were not observed. Therefore, their formation was not included in the simulation.

Kinetic simulations were performed using the *Tenua* program (© 2021, Daniel Wachsstock). In the case of 1 bar pressure, the starting concentrations of phenylsilane, catalyst **9**, and $CO_2$ were set to 5M, 0.05M, and 1M, respectively. The $CO_2$ concentration was calculated from the ratio of phenylsilane and $CO_2$ in the reaction, and thus, the transfer from the gas phase into the liquid phase was not considered. In the case of 40 bar pressure, the $CO_2$ concentration was increased to 40M. The time span and the simulation accuracy $\varepsilon$ were varied between $50 - 100$ s and $\varepsilon = 1 \times 10^{-6}$ and $\varepsilon = 1 \times 10^{-5}$.

## 9. XYZ Coordinates of Optimized Geometries

**9**

| | | | |
|---|---|---|---|
| 27 | 15.048714000 | 11.769397000 | 7.404234000 |
| 1 | 13.537255000 | 11.697509000 | 7.186816000 |
| 15 | 15.364078000 | 13.001834000 | 5.721588000 |
| 7 | 17.128637000 | 13.234611000 | 5.832646000 |
| 6 | 17.751758000 | 12.590999000 | 6.855606000 |
| 7 | 19.080972000 | 12.660844000 | 7.003843000 |
| 6 | 19.600787000 | 11.976899000 | 8.032669000 |
| 7 | 18.895611000 | 11.178816000 | 8.848329000 |
| 6 | 17.578351000 | 11.133952000 | 8.631350000 |
| 7 | 16.946943000 | 11.883357000 | 7.689945000 |
| 7 | 16.783700000 | 10.278626000 | 9.329369000 |
| 15 | 15.197777000 | 10.005926000 | 8.561699000 |
| 7 | 14.322410000 | 9.320422000 | 9.821771000 |
| 6 | 13.969987000 | 7.921888000 | 9.586482000 |
| 1 | 12.964548000 | 7.827361000 | 9.133966000 |
| 1 | 13.975002000 | 7.344499000 | 10.524925000 |
| 6 | 15.025922000 | 7.392344000 | 8.613735000 |
| 1 | 15.914127000 | 7.023829000 | 9.164849000 |
| 1 | 14.627605000 | 6.552379000 | 8.023457000 |
| 7 | 15.332883000 | 8.532662000 | 7.761480000 |
| 6 | 16.193429000 | 8.416527000 | 6.584171000 |
| 1 | 16.272428000 | 9.448089000 | 6.204919000 |
| 6 | 17.615610000 | 7.938552000 | 6.905394000 |
| 1 | 18.108158000 | 8.603915000 | 7.628645000 |
| 1 | 18.226731000 | 7.930904000 | 5.989036000 |
| 1 | 17.620755000 | 6.917280000 | 7.322066000 |
| 6 | 15.528962000 | 7.575608000 | 5.491917000 |
| 1 | 15.414654000 | 6.523617000 | 5.801396000 |
| 1 | 16.136921000 | 7.589248000 | 4.573793000 |
| 1 | 14.531285000 | 7.975194000 | 5.255636000 |
| 6 | 13.468862000 | 10.174550000 | 10.660313000 |
| 1 | 13.999386000 | 11.139897000 | 10.727431000 |
| 6 | 13.353491000 | 9.608906000 | 12.077856000 |
| 1 | 12.762778000 | 8.678084000 | 12.092751000 |
| 1 | 12.844067000 | 10.329698000 | 12.735519000 |
| 1 | 14.346654000 | 9.391429000 | 12.501708000 |
| 6 | 12.093190000 | 10.437953000 | 10.034004000 |
| 1 | 12.208521000 | 10.908505000 | 9.045960000 |
| 1 | 11.498576000 | 11.109115000 | 10.673846000 |
| 1 | 11.523364000 | 9.502234000 | 9.913601000 |
| 7 | 14.877259000 | 14.546651000 | 5.245929000 |
| 6 | 14.298199000 | 14.600937000 | 3.908147000 |
| 1 | 14.587596000 | 15.527078000 | 3.384968000 |
| 1 | 13.192406000 | 14.563415000 | 3.941044000 |
| 6 | 14.843930000 | 13.372906000 | 3.171167000 |

| | | | |
|---|---|---|---|
| 1 | 14.130515000 | 13.026322000 | 2.408383000 |
| 1 | 15.791446000 | 13.610785000 | 2.649047000 |
| 7 | 15.020774000 | 12.373859000 | 4.211018000 |
| 6 | 15.232467000 | 10.962006000 | 3.912585000 |
| 1 | 15.260118000 | 10.480621000 | 4.902499000 |
| 6 | 14.041136000 | 10.368871000 | 3.159812000 |
| 1 | 13.114772000 | 10.555353000 | 3.725332000 |
| 1 | 14.163201000 | 9.281107000 | 3.041060000 |
| 1 | 13.929912000 | 10.802529000 | 2.152243000 |
| 6 | 16.578518000 | 10.707549000 | 3.224226000 |
| 1 | 16.639390000 | 11.223130000 | 2.251359000 |
| 1 | 16.732216000 | 9.631650000 | 3.043536000 |
| 1 | 17.404544000 | 11.071277000 | 3.855248000 |
| 6 | 14.504181000 | 15.541515000 | 6.256935000 |
| 1 | 15.148634000 | 15.329431000 | 7.127369000 |
| 6 | 14.819484000 | 16.960120000 | 5.776016000 |
| 1 | 15.861581000 | 17.037782000 | 5.427269000 |
| 1 | 14.663344000 | 17.682289000 | 6.592452000 |
| 1 | 14.158194000 | 17.256762000 | 4.945780000 |
| 6 | 13.045027000 | 15.414525000 | 6.716077000 |
| 1 | 12.346305000 | 15.652664000 | 5.897356000 |
| 1 | 12.838008000 | 16.115889000 | 7.539578000 |
| 1 | 12.839350000 | 14.392472000 | 7.070356000 |
| 6 | 17.916746000 | 14.012631000 | 4.890988000 |
| 1 | 18.632379000 | 14.654894000 | 5.424220000 |
| 1 | 17.234873000 | 14.646482000 | 4.311957000 |
| 1 | 18.486867000 | 13.364892000 | 4.203937000 |
| 6 | 21.056208000 | 12.097123000 | 8.285661000 |
| 6 | 21.852153000 | 12.936494000 | 7.485761000 |
| 1 | 21.378059000 | 13.479009000 | 6.667081000 |
| 6 | 23.215618000 | 13.072560000 | 7.748412000 |
| 1 | 23.826300000 | 13.730958000 | 7.125514000 |
| 6 | 23.802125000 | 12.369714000 | 8.808194000 |
| 1 | 24.867656000 | 12.489121000 | 9.022551000 |
| 6 | 23.019513000 | 11.519851000 | 9.599377000 |
| 1 | 23.476703000 | 10.963237000 | 10.421655000 |
| 6 | 21.655580000 | 11.383950000 | 9.340318000 |
| 1 | 21.029272000 | 10.732140000 | 9.950038000 |
| 6 | 17.368087000 | 9.423049000 | 10.347162000 |
| 1 | 18.009965000 | 8.638334000 | 9.911834000 |
| 1 | 16.550163000 | 8.951431000 | 10.906093000 |
| 1 | 17.984730000 | 10.019019000 | 11.035105000 |

**15**

| | | | |
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| 27 | -1.228206000 | 0.738497000 | 0.523469000 |
| 1 | -2.717073000 | 0.840751000 | 0.262887000 |
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| 7 | 0.871416000 | 1.947861000 | -1.185824000 |
| 6 | 1.522837000 | 1.259547000 | -0.213295000 |

| 7 | 2.859326000 | 1.250743000 | -0.129813000 |
| 6 | 3.382049000 | 0.504484000 | 0.855030000 |
| 7 | 2.676226000 | -0.312634000 | 1.654597000 |
| 6 | 1.349808000 | -0.285585000 | 1.491356000 |
| 7 | 0.739887000 | 0.573406000 | 0.648553000 |
| 7 | 0.533023000 | -1.170038000 | 2.128291000 |
| 15 | -1.016020000 | -1.483473000 | 1.294292000 |
| 7 | -1.953012000 | -2.194352000 | 2.483959000 |
| 6 | -2.319585000 | -3.574704000 | 2.165138000 |
| 1 | -3.280474000 | -3.626211000 | 1.619120000 |
| 1 | -2.421986000 | -4.177105000 | 3.080457000 |
| 6 | -1.186752000 | -4.097244000 | 1.286464000 |
| 1 | -0.355280000 | -4.480251000 | 1.908836000 |
| 1 | -1.533496000 | -4.919493000 | 0.643096000 |
| 7 | -0.787031000 | -2.941175000 | 0.484998000 |
| 6 | 0.221983000 | -3.071400000 | -0.573140000 |
| 1 | 0.331708000 | -2.059221000 | -0.990997000 |
| 6 | 1.608558000 | -3.501208000 | -0.073936000 |
| 1 | 2.033874000 | -2.772320000 | 0.627833000 |
| 1 | 2.301139000 | -3.580569000 | -0.926271000 |
| 1 | 1.577652000 | -4.484818000 | 0.422575000 |
| 6 | -0.281661000 | -3.987854000 | -1.691273000 |
| 1 | -0.351024000 | -5.033084000 | -1.349763000 |
| 1 | 0.407799000 | -3.966419000 | -2.548821000 |
| 1 | -1.277681000 | -3.671590000 | -2.032921000 |
| 6 | -2.802524000 | -1.383179000 | 3.379018000 |
| 1 | -2.221249000 | -0.476135000 | 3.591769000 |
| 6 | -3.040025000 | -2.110513000 | 4.705432000 |
| 1 | -3.705702000 | -2.981085000 | 4.585471000 |
| 1 | -3.521902000 | -1.427676000 | 5.421309000 |
| 1 | -2.092813000 | -2.460345000 | 5.146807000 |
| 6 | -4.116233000 | -0.953388000 | 2.716086000 |
| 1 | -3.911530000 | -0.347239000 | 1.821493000 |
| 1 | -4.715145000 | -0.344008000 | 3.411527000 |
| 1 | -4.724408000 | -1.824988000 | 2.421531000 |
| 7 | -1.427704000 | 3.169599000 | -1.903315000 |
| 6 | -1.974807000 | 3.072856000 | -3.256350000 |
| 1 | -1.686097000 | 3.949730000 | -3.856502000 |
| 1 | -3.079217000 | 3.022342000 | -3.237520000 |
| 6 | -1.392722000 | 1.793973000 | -3.857646000 |
| 1 | -2.082356000 | 1.354021000 | -4.592932000 |
| 1 | -0.438288000 | 1.998280000 | -4.379735000 |
| 7 | -1.216463000 | 0.909625000 | -2.717279000 |
| 6 | -0.964224000 | -0.515660000 | -2.880138000 |
| 1 | -0.916825000 | -0.904265000 | -1.851927000 |
| 6 | -2.147531000 | -1.206669000 | -3.558938000 |
| 1 | -3.070879000 | -1.002189000 | -2.995118000 |
| 1 | -1.992826000 | -2.295169000 | -3.589234000 |
| 1 | -2.286819000 | -0.861383000 | -4.596216000 |
| 6 | 0.381738000 | -0.788460000 | -3.562217000 |

| 1 | 0.405085000 | -0.374870000 | -4.583720000 |
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| 1 | 1.202663000 | -0.326965000 | -2.991251000 |
| 6 | -1.841620000 | 4.287783000 | -1.038404000 |
| 1 | -1.216943000 | 4.213246000 | -0.140113000 |
| 6 | -1.561001000 | 5.636752000 | -1.703183000 |
| 1 | -0.514295000 | 5.707981000 | -2.040009000 |
| 1 | -1.751837000 | 6.447537000 | -0.983020000 |
| 1 | -2.215009000 | 5.812003000 | -2.572992000 |
| 6 | -3.304544000 | 4.174816000 | -0.592002000 |
| 1 | -4.002509000 | 4.326864000 | -1.432347000 |
| 1 | -3.528681000 | 4.939187000 | 0.167921000 |
| 1 | -3.494772000 | 3.187800000 | -0.145031000 |
| 6 | 1.638976000 | 2.727203000 | -2.146486000 |
| 1 | 2.369205000 | 3.360908000 | -1.623587000 |
| 1 | 0.944131000 | 3.367088000 | -2.702799000 |
| 1 | 2.185631000 | 2.078841000 | -2.850905000 |
| 6 | 4.848794000 | 0.567032000 | 1.063301000 |
| 6 | 5.645937000 | 1.391939000 | 0.249865000 |
| 1 | 5.164613000 | 1.964944000 | -0.543066000 |
| 6 | 7.021355000 | 1.474784000 | 0.467452000 |
| 1 | 7.634586000 | 2.121148000 | -0.165192000 |
| 6 | 7.615480000 | 0.734515000 | 1.496903000 |
| 1 | 8.691338000 | 0.811427000 | 1.675949000 |
| 6 | 6.830289000 | -0.098656000 | 2.302902000 |
| 1 | 7.294882000 | -0.681193000 | 3.102442000 |
| 6 | 5.454434000 | -0.183013000 | 2.087594000 |
| 1 | 4.826049000 | -0.821163000 | 2.709332000 |
| 6 | 1.077589000 | -2.041922000 | 3.158342000 |
| 1 | 1.738497000 | -2.820164000 | 2.743927000 |
| 1 | 0.237494000 | -2.520001000 | 3.677066000 |
| 1 | 1.658296000 | -1.448117000 | 3.877843000 |
| 6 | -1.125832000 | 2.242165000 | 1.791427000 |
| 8 | -1.428697000 | 1.395285000 | 2.646869000 |
| 8 | -0.797183000 | 3.407430000 | 1.763374000 |

**16**

| 27 | 14.992855000 | 11.843797000 | 7.525957000 |
|---|---|---|---|
| 1 | 13.399156000 | 11.612799000 | 7.333146000 |
| 15 | 15.297806000 | 12.988305000 | 5.745773000 |
| 7 | 17.059570000 | 13.192900000 | 5.831465000 |
| 6 | 17.685146000 | 12.586279000 | 6.869105000 |
| 7 | 19.014334000 | 12.656677000 | 7.007065000 |
| 6 | 19.541617000 | 11.995004000 | 8.045800000 |
| 7 | 18.843320000 | 11.200269000 | 8.869939000 |
| 6 | 17.526646000 | 11.147357000 | 8.662577000 |
| 7 | 16.886362000 | 11.904715000 | 7.731353000 |
| 7 | 16.746495000 | 10.270611000 | 9.342141000 |

| | | | |
|---|---|---|---|
| 15 | 15.193246000 | 9.955988000 | 8.536514000 |
| 7 | 14.279139000 | 9.235149000 | 9.724675000 |
| 6 | 14.030266000 | 7.812518000 | 9.502960000 |
| 1 | 13.036161000 | 7.650779000 | 9.048265000 |
| 1 | 14.067740000 | 7.245323000 | 10.447254000 |
| 6 | 15.126622000 | 7.345675000 | 8.540461000 |
| 1 | 16.020975000 | 7.008542000 | 9.099981000 |
| 1 | 14.776250000 | 6.499370000 | 7.930231000 |
| 7 | 15.403628000 | 8.511271000 | 7.705858000 |
| 6 | 16.307454000 | 8.441517000 | 6.555042000 |
| 1 | 16.344650000 | 9.474650000 | 6.173793000 |
| 6 | 17.741713000 | 8.033351000 | 6.917719000 |
| 1 | 18.181129000 | 8.711805000 | 7.661810000 |
| 1 | 18.379533000 | 8.067260000 | 6.020598000 |
| 1 | 17.784110000 | 7.008600000 | 7.322949000 |
| 6 | 15.725448000 | 7.561766000 | 5.446464000 |
| 1 | 15.664445000 | 6.506642000 | 5.759213000 |
| 1 | 16.362467000 | 7.605615000 | 4.549854000 |
| 1 | 14.714501000 | 7.899770000 | 5.173543000 |
| 6 | 13.395026000 | 10.045033000 | 10.576126000 |
| 1 | 13.695504000 | 11.089663000 | 10.399016000 |
| 6 | 13.617967000 | 9.735878000 | 12.057258000 |
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| 1 | 12.984394000 | 10.382444000 | 12.683339000 |
| 1 | 14.667816000 | 9.909073000 | 12.339895000 |
| 6 | 11.922311000 | 9.912302000 | 10.178871000 |
| 1 | 11.784483000 | 10.080223000 | 9.099817000 |
| 1 | 11.318371000 | 10.658326000 | 10.715818000 |
| 1 | 11.523603000 | 8.915783000 | 10.431009000 |
| 7 | 14.792388000 | 14.513415000 | 5.286570000 |
| 6 | 14.226776000 | 14.597063000 | 3.945138000 |
| 1 | 14.571394000 | 15.503852000 | 3.421070000 |
| 1 | 13.122739000 | 14.629543000 | 3.978083000 |
| 6 | 14.705106000 | 13.334216000 | 3.211291000 |
| 1 | 13.947579000 | 12.991029000 | 2.491418000 |
| 1 | 15.633654000 | 13.531077000 | 2.641778000 |
| 7 | 14.909181000 | 12.344082000 | 4.259572000 |
| 6 | 15.098327000 | 10.925598000 | 3.973052000 |
| 1 | 15.139516000 | 10.455200000 | 4.967668000 |
| 6 | 13.885970000 | 10.338757000 | 3.250390000 |
| 1 | 12.968445000 | 10.569942000 | 3.813777000 |
| 1 | 13.978979000 | 9.244607000 | 3.172290000 |
| 1 | 13.778117000 | 10.737583000 | 2.228332000 |
| 6 | 16.429745000 | 10.648614000 | 3.265739000 |
| 1 | 16.484862000 | 11.160436000 | 2.290837000 |
| 1 | 16.563549000 | 9.570584000 | 3.086110000 |
| 1 | 17.270904000 | 10.999815000 | 3.883874000 |
| 6 | 14.604564000 | 15.587396000 | 6.267062000 |
| 1 | 15.028917000 | 15.199708000 | 7.209059000 |
| 6 | 15.393431000 | 16.839951000 | 5.870134000 |

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| 1 | 15.326392000 | 17.605212000 | 6.659062000 |
| 1 | 14.989668000 | 17.283775000 | 4.945015000 |
| 6 | 13.125304000 | 15.902902000 | 6.515489000 |
| 1 | 12.653860000 | 16.340411000 | 5.619963000 |
| 1 | 13.022476000 | 16.635054000 | 7.331208000 |
| 1 | 12.566390000 | 14.999321000 | 6.796661000 |
| 6 | 17.841841000 | 13.931899000 | 4.853041000 |
| 1 | 18.540500000 | 14.615820000 | 5.355747000 |
| 1 | 17.155197000 | 14.519670000 | 4.233166000 |
| 1 | 18.426330000 | 13.255136000 | 4.208865000 |
| 6 | 20.995435000 | 12.129349000 | 8.295800000 |
| 6 | 21.782384000 | 12.969253000 | 7.487887000 |
| 1 | 21.303664000 | 13.502052000 | 6.665553000 |
| 6 | 23.144766000 | 13.118443000 | 7.748143000 |
| 1 | 23.749626000 | 13.777140000 | 7.120146000 |
| 6 | 23.737317000 | 12.427917000 | 8.812625000 |
| 1 | 24.801967000 | 12.557803000 | 9.024978000 |
| 6 | 22.963383000 | 11.577341000 | 9.611458000 |
| 1 | 23.426399000 | 11.030735000 | 10.436996000 |
| 6 | 21.600490000 | 11.428366000 | 9.355287000 |
| 1 | 20.981041000 | 10.775642000 | 9.970965000 |
| 6 | 17.335552000 | 9.409802000 | 10.354038000 |
| 1 | 18.001042000 | 8.648288000 | 9.914755000 |
| 1 | 16.521719000 | 8.910817000 | 10.894140000 |
| 1 | 17.925620000 | 10.010237000 | 11.060346000 |
| 6 | 12.885209000 | 12.578181000 | 7.963860000 |
| 8 | 11.765488000 | 12.746074000 | 7.510471000 |
| 8 | 13.542757000 | 13.064686000 | 8.891264000 |

**11**

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| 15 | 15.244756000 | 12.986099000 | 6.119561000 |
| 7 | 16.870799000 | 13.539349000 | 6.500588000 |
| 6 | 17.544532000 | 12.744112000 | 7.376279000 |
| 7 | 18.866457000 | 12.864732000 | 7.504159000 |
| 6 | 19.466500000 | 12.003836000 | 8.336492000 |
| 7 | 18.828085000 | 11.032464000 | 9.001124000 |
| 6 | 17.503492000 | 10.963708000 | 8.833349000 |
| 7 | 16.796961000 | 11.827502000 | 8.051114000 |
| 7 | 16.789702000 | 9.979537000 | 9.443753000 |
| 15 | 15.095141000 | 9.857850000 | 8.981320000 |
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| 6 | 13.767403000 | 8.005749000 | 10.285754000 |
| 1 | 12.691967000 | 8.064787000 | 10.035622000 |
| 1 | 13.874853000 | 7.446370000 | 11.228800000 |
| 6 | 14.524149000 | 7.309774000 | 9.152420000 |

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| 1 | 13.890671000 | 6.557281000 | 8.660790000 |
| 7 | 14.858229000 | 8.387112000 | 8.232285000 |
| 6 | 15.271166000 | 8.147235000 | 6.853005000 |
| 1 | 15.376912000 | 9.154540000 | 6.421518000 |
| 6 | 16.634958000 | 7.455354000 | 6.758508000 |
| 1 | 17.405325000 | 8.045842000 | 7.278825000 |
| 1 | 16.943023000 | 7.342606000 | 5.706590000 |
| 1 | 16.611362000 | 6.450390000 | 7.211887000 |
| 6 | 14.175123000 | 7.427930000 | 6.065294000 |
| 1 | 13.995987000 | 6.409917000 | 6.448093000 |
| 1 | 14.460721000 | 7.337315000 | 5.006326000 |
| 1 | 13.232478000 | 7.993239000 | 6.126617000 |
| 6 | 13.830994000 | 10.315347000 | 11.356286000 |
| 1 | 14.460648000 | 11.213366000 | 11.233681000 |
| 6 | 14.000982000 | 9.814869000 | 12.792363000 |
| 1 | 13.359829000 | 8.939443000 | 12.984519000 |
| 1 | 13.706020000 | 10.599336000 | 13.506444000 |
| 1 | 15.044879000 | 9.526655000 | 12.993578000 |
| 6 | 12.380822000 | 10.716908000 | 11.058973000 |
| 1 | 12.276490000 | 11.050161000 | 10.014790000 |
| 1 | 12.069779000 | 11.537970000 | 11.723639000 |
| 1 | 11.689804000 | 9.875808000 | 11.232928000 |
| 7 | 14.503339000 | 14.366410000 | 5.538945000 |
| 6 | 14.162782000 | 14.304394000 | 4.117689000 |
| 1 | 14.329614000 | 15.277054000 | 3.628426000 |
| 1 | 13.104213000 | 14.021177000 | 3.969694000 |
| 6 | 15.085898000 | 13.241326000 | 3.515776000 |
| 1 | 14.610871000 | 12.751331000 | 2.652097000 |
| 1 | 16.030723000 | 13.697822000 | 3.161469000 |
| 7 | 15.306173000 | 12.291344000 | 4.596839000 |
| 6 | 15.997367000 | 11.020642000 | 4.377114000 |
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| 6 | 15.134149000 | 10.062611000 | 3.554611000 |
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| 1 | 15.640691000 | 9.092212000 | 3.433477000 |
| 1 | 14.933061000 | 10.462288000 | 2.547170000 |
| 6 | 17.405254000 | 11.195576000 | 3.797570000 |
| 1 | 17.380832000 | 11.658024000 | 2.797019000 |
| 1 | 17.902076000 | 10.217635000 | 3.698935000 |
| 1 | 18.026066000 | 11.826281000 | 4.451587000 |
| 6 | 13.831680000 | 15.310060000 | 6.443621000 |
| 1 | 14.372135000 | 15.232293000 | 7.402372000 |
| 6 | 13.983036000 | 16.747417000 | 5.940596000 |
| 1 | 15.036838000 | 16.988610000 | 5.730042000 |
| 1 | 13.606715000 | 17.454493000 | 6.695124000 |
| 1 | 13.400581000 | 16.910336000 | 5.019367000 |
| 6 | 12.364501000 | 14.948460000 | 6.695846000 |
| 1 | 11.782596000 | 14.977936000 | 5.760581000 |
| 1 | 11.905767000 | 15.662864000 | 7.396449000 |

| 1 | 12.279913000 | 13.941994000 | 7.129762000 |
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| 1 | 18.224263000 | 15.146151000 | 6.366409000 |
| 1 | 16.872102000 | 15.151783000 | 5.193468000 |
| 1 | 18.261854000 | 14.038507000 | 4.971835000 |
| 6 | 20.932477000 | 12.127311000 | 8.508182000 |
| 6 | 21.644633000 | 13.120093000 | 7.809964000 |
| 1 | 21.095037000 | 13.784756000 | 7.142978000 |
| 6 | 23.023589000 | 13.246392000 | 7.976112000 |
| 1 | 23.570132000 | 14.019914000 | 7.430736000 |
| 6 | 23.707707000 | 12.382195000 | 8.839662000 |
| 1 | 24.786824000 | 12.489669000 | 8.978291000 |
| 6 | 23.007929000 | 11.384779000 | 9.529995000 |
| 1 | 23.542746000 | 10.706027000 | 10.198934000 |
| 6 | 21.628383000 | 11.255943000 | 9.365165000 |
| 1 | 21.066808000 | 10.486409000 | 9.895752000 |
| 6 | 17.469941000 | 9.015294000 | 10.294623000 |
| 1 | 18.064092000 | 8.299172000 | 9.703427000 |
| 1 | 16.710613000 | 8.473451000 | 10.871202000 |
| 1 | 18.147965000 | 9.531168000 | 10.988452000 |
| 6 | 12.315889000 | 11.275150000 | 6.603517000 |
| 8 | 13.016023000 | 11.444075000 | 7.666526000 |
| 8 | 11.116031000 | 11.014797000 | 6.574139000 |

**14**

| 27 | 14.781418000 | 11.474405000 | 7.322816000 |
|---|---|---|---|
| 1 | 16.064988000 | 13.025962000 | 9.591926000 |
| 15 | 15.025309000 | 12.760408000 | 5.576839000 |
| 7 | 16.748829000 | 13.152824000 | 5.782025000 |
| 6 | 17.457188000 | 12.437521000 | 6.692408000 |
| 7 | 18.793543000 | 12.516247000 | 6.743913000 |
| 6 | 19.395162000 | 11.743822000 | 7.659274000 |
| 7 | 18.756832000 | 10.901216000 | 8.486415000 |
| 6 | 17.425185000 | 10.871533000 | 8.375452000 |
| 7 | 16.739953000 | 11.643443000 | 7.511324000 |
| 7 | 16.680104000 | 10.025961000 | 9.142733000 |
| 15 | 14.976727000 | 9.883013000 | 8.752443000 |
| 7 | 14.238247000 | 9.683344000 | 10.232145000 |
| 6 | 13.394180000 | 8.491120000 | 10.272868000 |
| 1 | 12.363371000 | 8.715453000 | 9.947300000 |
| 1 | 13.347551000 | 8.084116000 | 11.293637000 |
| 6 | 14.058437000 | 7.491642000 | 9.320549000 |
| 1 | 14.774311000 | 6.851642000 | 9.869356000 |
| 1 | 13.306888000 | 6.832537000 | 8.857192000 |
| 7 | 14.730563000 | 8.301600000 | 8.312849000 |
| 6 | 15.336822000 | 7.697277000 | 7.123036000 |
| 1 | 16.033816000 | 8.449582000 | 6.719993000 |
| 6 | 16.156716000 | 6.454561000 | 7.485684000 |

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| 1 | 16.900186000 | 6.682695000 | 8.264360000 |
| 1 | 16.690865000 | 6.077653000 | 6.600104000 |
| 1 | 15.511040000 | 5.641544000 | 7.854835000 |
| 6 | 14.293095000 | 7.406208000 | 6.042184000 |
| 1 | 13.509837000 | 6.729469000 | 6.419972000 |
| 1 | 14.760010000 | 6.927831000 | 5.166580000 |
| 1 | 13.812036000 | 8.337106000 | 5.712349000 |
| 6 | 14.050130000 | 10.782561000 | 11.189841000 |
| 1 | 14.830224000 | 11.519423000 | 10.947207000 |
| 6 | 14.310133000 | 10.303331000 | 12.621256000 |
| 1 | 13.541423000 | 9.587596000 | 12.953338000 |
| 1 | 14.278867000 | 11.160540000 | 13.311052000 |
| 1 | 15.293887000 | 9.815410000 | 12.706644000 |
| 6 | 12.688558000 | 11.467448000 | 11.059576000 |
| 1 | 12.531868000 | 11.835335000 | 10.036591000 |
| 1 | 12.635702000 | 12.333341000 | 11.736272000 |
| 1 | 11.871667000 | 10.777138000 | 11.326398000 |
| 7 | 14.367796000 | 14.244963000 | 5.235962000 |
| 6 | 13.943396000 | 14.427108000 | 3.852138000 |
| 1 | 14.319966000 | 15.380252000 | 3.448596000 |
| 1 | 12.842956000 | 14.451032000 | 3.773207000 |
| 6 | 14.522798000 | 13.247250000 | 3.053107000 |
| 1 | 13.782027000 | 12.879325000 | 2.328767000 |
| 1 | 15.418450000 | 13.560618000 | 2.484828000 |
| 7 | 14.840221000 | 12.202555000 | 4.021963000 |
| 6 | 15.324511000 | 10.890459000 | 3.573276000 |
| 1 | 15.210359000 | 10.226501000 | 4.444419000 |
| 6 | 14.455225000 | 10.325438000 | 2.450084000 |
| 1 | 13.393483000 | 10.329419000 | 2.732782000 |
| 1 | 14.755565000 | 9.287132000 | 2.240817000 |
| 1 | 14.578250000 | 10.897809000 | 1.516443000 |
| 6 | 16.807925000 | 10.914666000 | 3.175632000 |
| 1 | 16.994719000 | 11.654911000 | 2.380661000 |
| 1 | 17.121159000 | 9.930923000 | 2.791375000 |
| 1 | 17.450729000 | 11.164387000 | 4.032345000 |
| 6 | 14.036460000 | 15.234270000 | 6.274493000 |
| 1 | 14.632608000 | 14.953588000 | 7.153865000 |
| 6 | 14.449871000 | 16.645519000 | 5.849112000 |
| 1 | 15.499478000 | 16.673874000 | 5.515426000 |
| 1 | 14.337780000 | 17.334649000 | 6.699793000 |
| 1 | 13.818018000 | 17.027882000 | 5.031030000 |
| 6 | 12.564133000 | 15.171727000 | 6.686763000 |
| 1 | 11.897083000 | 15.415476000 | 5.843263000 |
| 1 | 12.364457000 | 15.894558000 | 7.492326000 |
| 1 | 12.317362000 | 14.172881000 | 7.070305000 |
| 6 | 17.452924000 | 14.062052000 | 4.888614000 |
| 1 | 18.111950000 | 14.726225000 | 5.465097000 |
| 1 | 16.713640000 | 14.673561000 | 4.359932000 |
| 1 | 18.066741000 | 13.516088000 | 4.155522000 |
| 6 | 20.873876000 | 11.810475000 | 7.753002000 |

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| 6 | 21.603547000 | 12.640683000 | 6.883305000 |
| 1 | 21.059366000 | 13.229182000 | 6.144429000 |
| 6 | 22.994317000 | 12.703530000 | 6.972612000 |
| 1 | 23.555920000 | 13.349960000 | 6.293789000 |
| 6 | 23.670696000 | 11.939680000 | 7.931547000 |
| 1 | 24.759997000 | 11.995311000 | 8.005991000 |
| 6 | 22.951764000 | 11.107889000 | 8.798404000 |
| 1 | 23.480406000 | 10.510257000 | 9.545064000 |
| 6 | 21.560998000 | 11.042129000 | 8.709869000 |
| 1 | 20.984741000 | 10.401506000 | 9.377623000 |
| 6 | 17.345171000 | 9.125355000 | 10.073441000 |
| 1 | 18.021332000 | 8.438967000 | 9.540918000 |
| 1 | 16.577974000 | 8.550171000 | 10.605096000 |
| 1 | 17.935653000 | 9.695476000 | 10.805192000 |
| 1 | 14.934709000 | 10.373366000 | 6.374613000 |
| 14 | 12.586430000 | 10.970706000 | 7.089421000 |
| 1 | 12.201598000 | 9.656161000 | 7.697474000 |
| 1 | 11.743098000 | 11.973480000 | 7.812754000 |
| 6 | 10.980269000 | 12.004455000 | 3.373823000 |
| 6 | 10.581281000 | 10.780410000 | 2.823754000 |
| 6 | 11.584145000 | 12.038251000 | 4.631623000 |
| 1 | 10.101349000 | 10.748145000 | 1.842163000 |
| 1 | 11.873447000 | 12.997710000 | 5.061101000 |
| 6 | 10.785612000 | 9.600546000 | 3.545343000 |
| 6 | 11.808750000 | 10.864072000 | 5.373911000 |
| 1 | 10.459488000 | 8.643732000 | 3.127343000 |
| 6 | 11.394421000 | 9.646234000 | 4.805387000 |
| 1 | 11.531588000 | 8.716895000 | 5.364501000 |
| 1 | 10.809085000 | 12.933764000 | 2.822947000 |
| 6 | 15.063954000 | 13.490932000 | 9.464504000 |
| 8 | 14.748500000 | 14.416394000 | 10.209685000 |
| 8 | 14.334831000 | 12.999494000 | 8.539531000 |

**17**

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| 7 | 16.736107000 | 12.592716000 | 5.676781000 |
| 6 | 17.407758000 | 12.312096000 | 6.816197000 |
| 7 | 18.736152000 | 12.476051000 | 6.914586000 |
| 6 | 19.290073000 | 12.094436000 | 8.073437000 |
| 7 | 18.648880000 | 11.416702000 | 9.037624000 |
| 6 | 17.337764000 | 11.227752000 | 8.838438000 |
| 7 | 16.657595000 | 11.833460000 | 7.836526000 |
| 7 | 16.619896000 | 10.334644000 | 9.559074000 |
| 15 | 15.222727000 | 9.675643000 | 8.602865000 |
| 7 | 14.371765000 | 8.794511000 | 9.734637000 |
| 6 | 14.495435000 | 7.347508000 | 9.575585000 |

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| 1 | 14.530653000 | 6.837661000 | 10.551692000 |
| 6 | 15.791350000 | 7.136444000 | 8.793419000 |
| 1 | 16.657062000 | 7.091380000 | 9.481239000 |
| 1 | 15.768658000 | 6.192848000 | 8.228205000 |
| 7 | 15.861878000 | 8.285127000 | 7.894063000 |
| 6 | 16.903554000 | 8.351282000 | 6.864344000 |
| 1 | 16.759318000 | 9.327446000 | 6.370943000 |
| 6 | 18.335519000 | 8.292659000 | 7.418079000 |
| 1 | 18.550385000 | 9.099716000 | 8.129616000 |
| 1 | 19.058774000 | 8.375965000 | 6.591768000 |
| 1 | 18.524057000 | 7.331908000 | 7.925172000 |
| 6 | 16.697073000 | 7.256187000 | 5.814316000 |
| 1 | 16.949679000 | 6.263271000 | 6.221004000 |
| 1 | 17.346941000 | 7.432743000 | 4.944290000 |
| 1 | 15.652617000 | 7.234461000 | 5.471191000 |
| 6 | 13.243286000 | 9.381917000 | 10.470223000 |
| 1 | 13.344867000 | 10.468496000 | 10.337388000 |
| 6 | 13.333601000 | 9.071021000 | 11.966971000 |
| 1 | 13.186068000 | 7.996794000 | 12.169999000 |
| 1 | 12.552126000 | 9.618195000 | 12.516263000 |
| 1 | 14.310171000 | 9.372983000 | 12.376257000 |
| 6 | 11.884142000 | 8.970516000 | 9.896079000 |
| 1 | 11.837341000 | 9.191144000 | 8.818701000 |
| 1 | 11.082560000 | 9.535820000 | 10.395792000 |
| 1 | 11.681464000 | 7.897494000 | 10.052159000 |
| 7 | 14.421641000 | 13.732308000 | 4.972024000 |
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| 1 | 14.509527000 | 14.380843000 | 2.950851000 |
| 1 | 12.917008000 | 13.803758000 | 3.489379000 |
| 6 | 14.362544000 | 12.208731000 | 3.119410000 |
| 1 | 13.536452000 | 11.772420000 | 2.536524000 |
| 1 | 15.249523000 | 12.219516000 | 2.459085000 |
| 7 | 14.599230000 | 11.431599000 | 4.326202000 |
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| 1 | 14.855813000 | 9.640196000 | 5.285395000 |
| 6 | 13.050132000 | 9.507558000 | 4.155284000 |
| 1 | 12.450191000 | 9.879699000 | 4.997361000 |
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| 1 | 12.597265000 | 9.869857000 | 3.217671000 |
| 6 | 15.408121000 | 9.385652000 | 3.214242000 |
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| 1 | 14.453757000 | 14.813771000 | 6.716264000 |
| 6 | 15.674229000 | 15.864917000 | 5.304595000 |
| 1 | 16.590240000 | 15.341264000 | 5.612973000 |
| 1 | 15.642415000 | 16.832090000 | 5.831038000 |
| 1 | 15.741423000 | 16.073490000 | 4.223659000 |

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| 1 | 13.079986000 | 16.152868000 | 4.325707000 |
| 1 | 13.095696000 | 16.699915000 | 6.016065000 |
| 1 | 12.259787000 | 15.185807000 | 5.583562000 |
| 6 | 17.456588000 | 12.995498000 | 4.480977000 |
| 1 | 18.300563000 | 13.648847000 | 4.739600000 |
| 1 | 16.775329000 | 13.542519000 | 3.819621000 |
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| 6 | 21.422412000 | 13.215959000 | 7.377765000 |
| 1 | 20.888710000 | 13.607166000 | 6.510663000 |
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| 1 | 23.298009000 | 14.167036000 | 6.889621000 |
| 6 | 23.430605000 | 13.011907000 | 8.716657000 |
| 1 | 24.480341000 | 13.262360000 | 8.892540000 |
| 6 | 22.748204000 | 12.183067000 | 9.615337000 |
| 1 | 23.269712000 | 11.771870000 | 10.483444000 |
| 6 | 21.402810000 | 11.879707000 | 9.403995000 |
| 1 | 20.853217000 | 11.239203000 | 10.094890000 |
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| 1 | 16.439051000 | 9.134446000 | 11.245791000 |
| 1 | 17.673385000 | 10.427905000 | 11.373258000 |
| 1 | 13.283929000 | 11.221881000 | 7.330033000 |
| 14 | 11.431012000 | 13.187047000 | 8.494539000 |
| 1 | 11.470162000 | 11.797916000 | 8.981128000 |
| 1 | 10.591432000 | 14.007818000 | 9.405460000 |
| 6 | 9.244127000 | 14.580763000 | 5.256399000 |
| 6 | 9.688836000 | 13.788230000 | 4.193519000 |
| 6 | 9.744752000 | 14.361620000 | 6.544257000 |
| 1 | 9.300211000 | 13.962872000 | 3.186412000 |
| 1 | 9.394350000 | 14.990380000 | 7.368143000 |
| 6 | 10.628256000 | 12.774785000 | 4.423841000 |
| 6 | 10.703646000 | 13.360350000 | 6.789649000 |
| 1 | 10.970655000 | 12.146108000 | 3.598300000 |
| 6 | 11.136009000 | 12.568131000 | 5.708635000 |
| 1 | 11.896314000 | 11.804689000 | 5.882191000 |
| 1 | 8.508650000 | 15.370074000 | 5.079856000 |
| 6 | 14.141539000 | 13.354564000 | 8.777067000 |
| 8 | 14.259966000 | 12.397452000 | 9.573492000 |
| 8 | 12.927933000 | 13.928847000 | 8.503906000 |

**18**

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| 15 | 14.619419000 | 12.515359000 | 5.734540000 |
| 7 | 16.261236000 | 13.128069000 | 6.068882000 |
| 6 | 16.880124000 | 12.622981000 | 7.158041000 |

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| 6 | 18.685950000 | 12.355792000 | 8.516071000 |
| 7 | 18.096073000 | 11.371606000 | 9.209853000 |
| 6 | 16.852131000 | 11.052812000 | 8.841589000 |
| 7 | 16.155946000 | 11.740164000 | 7.897490000 |
| 7 | 16.236906000 | 9.951398000 | 9.339763000 |
| 15 | 14.951308000 | 9.321268000 | 8.258392000 |
| 7 | 14.130588000 | 8.253868000 | 9.247509000 |
| 6 | 14.351676000 | 6.845224000 | 8.926807000 |
| 1 | 13.526814000 | 6.443759000 | 8.309562000 |
| 1 | 14.415306000 | 6.231774000 | 9.840380000 |
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| 1 | 16.529727000 | 6.690646000 | 8.816833000 |
| 1 | 15.682224000 | 5.948336000 | 7.442671000 |
| 7 | 15.688859000 | 8.067772000 | 7.409068000 |
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| 1 | 16.460493000 | 9.370482000 | 6.041155000 |
| 6 | 18.144604000 | 8.399846000 | 6.947891000 |
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| 1 | 18.841300000 | 8.699621000 | 6.149174000 |
| 1 | 18.464488000 | 7.410524000 | 7.315190000 |
| 6 | 16.600347000 | 7.398845000 | 5.215158000 |
| 1 | 16.877688000 | 6.371984000 | 5.505256000 |
| 1 | 17.281053000 | 7.706564000 | 4.407186000 |
| 1 | 15.573167000 | 7.383359000 | 4.819757000 |
| 6 | 13.014808000 | 8.682831000 | 10.099745000 |
| 1 | 12.962472000 | 9.776781000 | 9.981196000 |
| 6 | 13.282426000 | 8.385417000 | 11.579095000 |
| 1 | 13.361177000 | 7.301053000 | 11.764982000 |
| 1 | 12.457848000 | 8.767637000 | 12.201057000 |
| 1 | 14.211761000 | 8.867268000 | 11.917941000 |
| 6 | 11.674607000 | 8.085839000 | 9.653018000 |
| 1 | 11.528629000 | 8.199045000 | 8.567778000 |
| 1 | 10.846652000 | 8.599032000 | 10.165907000 |
| 1 | 11.606169000 | 7.012541000 | 9.897444000 |
| 7 | 13.821689000 | 13.915001000 | 5.289035000 |
| 6 | 13.624743000 | 14.110254000 | 3.859429000 |
| 1 | 13.944160000 | 15.116749000 | 3.535429000 |
| 1 | 12.558482000 | 14.003284000 | 3.590939000 |
| 6 | 14.464250000 | 13.028633000 | 3.158088000 |
| 1 | 13.940156000 | 12.649667000 | 2.268288000 |
| 1 | 15.431660000 | 13.439026000 | 2.811488000 |
| 7 | 14.636076000 | 11.970148000 | 4.145255000 |
| 6 | 15.200409000 | 10.671984000 | 3.780544000 |
| 1 | 15.063279000 | 10.051967000 | 4.681095000 |
| 6 | 14.414638000 | 10.015978000 | 2.644434000 |
| 1 | 13.342001000 | 9.977796000 | 2.890311000 |
| 1 | 14.773506000 | 8.987623000 | 2.481689000 |
| 1 | 14.537581000 | 10.562099000 | 1.694895000 |
| 6 | 16.700781000 | 10.742440000 | 3.465990000 |

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| 1 | 17.087514000 | 9.754675000 | 3.171332000 |
| 1 | 17.271189000 | 11.085282000 | 4.342232000 |
| 6 | 13.302773000 | 14.864430000 | 6.275828000 |
| 1 | 13.230188000 | 14.299661000 | 7.219842000 |
| 6 | 14.258505000 | 16.043885000 | 6.502716000 |
| 1 | 15.225223000 | 15.696101000 | 6.896368000 |
| 1 | 13.830626000 | 16.756103000 | 7.226344000 |
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| 6 | 11.899337000 | 15.344531000 | 5.902456000 |
| 1 | 11.917657000 | 15.998347000 | 5.015348000 |
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| 1 | 11.233308000 | 14.497163000 | 5.693198000 |
| 6 | 16.954426000 | 14.060494000 | 5.194437000 |
| 1 | 17.641638000 | 14.686568000 | 5.777141000 |
| 1 | 16.215915000 | 14.705322000 | 4.704738000 |
| 1 | 17.536846000 | 13.531271000 | 4.422532000 |
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| 6 | 20.729812000 | 13.776887000 | 8.223250000 |
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| 6 | 22.630983000 | 13.545272000 | 9.706337000 |
| 1 | 23.628832000 | 13.861812000 | 10.022157000 |
| 6 | 21.968918000 | 12.521850000 | 10.395507000 |
| 1 | 22.455758000 | 12.025824000 | 11.239087000 |
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| 1 | 17.269228000 | 9.784937000 | 11.162676000 |
| 6 | 6.873988000 | 15.036552000 | 6.032296000 |
| 6 | 7.442180000 | 13.843330000 | 5.572992000 |
| 6 | 7.398335000 | 15.665454000 | 7.166829000 |
| 1 | 7.033926000 | 13.350505000 | 4.686300000 |
| 1 | 6.957882000 | 16.597814000 | 7.530730000 |
| 6 | 8.527778000 | 13.277559000 | 6.249903000 |
| 6 | 8.489009000 | 15.100188000 | 7.833873000 |
| 1 | 8.972409000 | 12.349761000 | 5.879864000 |
| 1 | 8.904749000 | 15.611853000 | 8.708083000 |
| 6 | 9.066905000 | 13.896702000 | 7.391740000 |
| 1 | 6.027447000 | 15.480731000 | 5.501818000 |
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| 1 | 11.300023000 | 14.303737000 | 8.871911000 |
| 1 | 9.996044000 | 12.379042000 | 9.500179000 |
| 8 | 11.307339000 | 12.169660000 | 7.301866000 |
| 6 | 12.235736000 | 11.285533000 | 7.945721000 |
| 1 | 11.689583000 | 10.362104000 | 8.188091000 |
| 8 | 12.925083000 | 11.824098000 | 8.911533000 |

**19**

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| 15 | 15.423443000 | 12.900131000 | 5.319429000 |
| 7 | 17.051930000 | 13.297482000 | 5.829213000 |
| 6 | 17.604100000 | 12.463122000 | 6.753613000 |
| 7 | 18.861647000 | 12.647544000 | 7.154039000 |
| 6 | 19.319266000 | 11.810494000 | 8.094548000 |
| 7 | 18.596296000 | 10.818549000 | 8.631192000 |
| 6 | 17.344218000 | 10.690311000 | 8.191140000 |
| 7 | 16.791009000 | 11.479966000 | 7.228147000 |
| 7 | 16.526657000 | 9.741669000 | 8.727728000 |
| 15 | 14.887702000 | 9.726213000 | 8.139986000 |
| 7 | 13.974445000 | 9.780307000 | 9.546092000 |
| 6 | 12.959480000 | 8.733506000 | 9.577116000 |
| 1 | 12.033064000 | 9.050810000 | 9.068019000 |
| 1 | 12.698669000 | 8.460826000 | 10.612315000 |
| 6 | 13.595209000 | 7.545655000 | 8.840394000 |
| 1 | 14.150065000 | 6.899230000 | 9.548293000 |
| 1 | 12.819449000 | 6.929462000 | 8.358481000 |
| 7 | 14.481527000 | 8.142003000 | 7.850193000 |
| 6 | 15.105399000 | 7.385440000 | 6.764377000 |
| 1 | 15.939360000 | 8.015754000 | 6.409344000 |
| 6 | 15.705434000 | 6.070834000 | 7.274756000 |
| 1 | 16.413446000 | 6.254320000 | 8.097580000 |
| 1 | 16.243317000 | 5.551834000 | 6.466192000 |
| 1 | 14.921583000 | 5.388846000 | 7.643985000 |
| 6 | 14.154186000 | 7.181847000 | 5.583427000 |
| 1 | 13.277487000 | 6.582886000 | 5.877798000 |
| 1 | 14.664172000 | 6.655807000 | 4.760231000 |
| 1 | 13.795536000 | 8.155862000 | 5.219867000 |
| 6 | 13.806340000 | 11.055066000 | 10.250379000 |
| 1 | 14.705077000 | 11.642844000 | 9.994045000 |
| 6 | 13.819083000 | 10.833891000 | 11.765290000 |
| 1 | 12.920994000 | 10.288505000 | 12.098209000 |
| 1 | 13.833749000 | 11.798649000 | 12.296241000 |
| 1 | 14.702797000 | 10.251498000 | 12.068868000 |
| 6 | 12.584459000 | 11.849507000 | 9.782645000 |
| 1 | 12.612025000 | 11.994998000 | 8.693785000 |
| 1 | 12.559085000 | 12.837900000 | 10.268674000 |
| 1 | 11.645023000 | 11.331989000 | 10.027919000 |
| 7 | 14.666455000 | 14.395241000 | 5.349389000 |
| 6 | 14.187645000 | 14.840325000 | 4.047231000 |
| 1 | 14.287133000 | 15.932449000 | 3.937102000 |
| 1 | 13.124263000 | 14.574172000 | 3.891049000 |
| 6 | 15.068641000 | 14.116311000 | 3.021554000 |
| 1 | 14.520174000 | 13.967545000 | 2.079776000 |

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| 7 | 15.390191000 | 12.839269000 | 3.648141000 |
| 6 | 16.017245000 | 11.727081000 | 2.927405000 |
| 1 | 15.959348000 | 10.872824000 | 3.625735000 |
| 6 | 15.234789000 | 11.354688000 | 1.665469000 |
| 1 | 14.180454000 | 11.139938000 | 1.898411000 |
| 1 | 15.676362000 | 10.459049000 | 1.202194000 |
| 1 | 15.267817000 | 12.161570000 | 0.915272000 |
| 6 | 17.499045000 | 11.981928000 | 2.619840000 |
| 1 | 17.626522000 | 12.867923000 | 1.975585000 |
| 1 | 17.941220000 | 11.121179000 | 2.094159000 |
| 1 | 18.068612000 | 12.144839000 | 3.546432000 |
| 6 | 14.109193000 | 14.908710000 | 6.605692000 |
| 1 | 14.717148000 | 14.444367000 | 7.401074000 |
| 6 | 14.290976000 | 16.423896000 | 6.706361000 |
| 1 | 15.346749000 | 16.704245000 | 6.566343000 |
| 1 | 13.960073000 | 16.784913000 | 7.692753000 |
| 1 | 13.691875000 | 16.953187000 | 5.947737000 |
| 6 | 12.658296000 | 14.475682000 | 6.833846000 |
| 1 | 11.989439000 | 14.880352000 | 6.056542000 |
| 1 | 12.291488000 | 14.837090000 | 7.807418000 |
| 1 | 12.586382000 | 13.379177000 | 6.826905000 |
| 6 | 17.795189000 | 14.455641000 | 5.358132000 |
| 1 | 18.305317000 | 14.948399000 | 6.197855000 |
| 1 | 17.083851000 | 15.160421000 | 4.910367000 |
| 1 | 18.556646000 | 14.181038000 | 4.610838000 |
| 6 | 20.700140000 | 12.013569000 | 8.584793000 |
| 6 | 21.482934000 | 13.063629000 | 8.071517000 |
| 1 | 21.057149000 | 13.698933000 | 7.294092000 |
| 6 | 22.771122000 | 13.284038000 | 8.558425000 |
| 1 | 23.371905000 | 14.103711000 | 8.156471000 |
| 6 | 23.293797000 | 12.457595000 | 9.560779000 |
| 1 | 24.299186000 | 12.639478000 | 9.950009000 |
| 6 | 22.526259000 | 11.400754000 | 10.065994000 |
| 1 | 22.935509000 | 10.749838000 | 10.842946000 |
| 6 | 21.235905000 | 11.178957000 | 9.582602000 |
| 1 | 20.620376000 | 10.367078000 | 9.971894000 |
| 6 | 17.015339000 | 8.868929000 | 9.781519000 |
| 1 | 17.780065000 | 8.175409000 | 9.397507000 |
| 1 | 16.166889000 | 8.295613000 | 10.175202000 |
| 1 | 17.461082000 | 9.454153000 | 10.599638000 |
| 6 | 8.832095000 | 12.357031000 | 9.250659000 |
| 6 | 9.380047000 | 12.926570000 | 8.096407000 |
| 6 | 8.897927000 | 10.971405000 | 9.437359000 |
| 1 | 9.323773000 | 14.007292000 | 7.938320000 |
| 1 | 8.466351000 | 10.516443000 | 10.333419000 |
| 6 | 9.996857000 | 12.115639000 | 7.138245000 |
| 6 | 9.518511000 | 10.168363000 | 8.475089000 |
| 1 | 10.414267000 | 12.575081000 | 6.239803000 |
| 1 | 9.559136000 | 9.086426000 | 8.639858000 |

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| 1 | 8.352163000 | 12.990525000 | 10.001401000 |
| 14 | 10.861634000 | 9.615864000 | 6.014251000 |
| 1 | 11.735536000 | 8.625875000 | 6.678607000 |
| 1 | 9.753317000 | 8.833055000 | 5.392112000 |
| 8 | 11.478997000 | 10.418646000 | 4.708687000 |
| 6 | 12.694770000 | 11.172141000 | 4.884539000 |
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| 8 | 13.213006000 | 10.904674000 | 6.113293000 |

**20**

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| 7 | 19.352660000 | 9.621157000 | 8.538050000 |
| 6 | 20.180242000 | 10.411892000 | 7.791430000 |
| 7 | 21.274533000 | 9.892951000 | 7.227454000 |
| 6 | 21.999015000 | 10.737908000 | 6.480199000 |
| 7 | 21.677389000 | 12.015276000 | 6.242732000 |
| 6 | 20.555332000 | 12.461675000 | 6.823746000 |
| 7 | 19.816410000 | 11.697754000 | 7.655339000 |
| 7 | 20.074171000 | 13.706438000 | 6.566599000 |
| 15 | 18.501614000 | 14.125380000 | 7.249793000 |
| 7 | 17.651013000 | 14.528278000 | 5.860821000 |
| 6 | 17.074121000 | 15.863953000 | 5.911177000 |
| 1 | 16.061381000 | 15.861602000 | 6.357512000 |
| 1 | 16.997877000 | 16.301125000 | 4.902922000 |
| 6 | 18.041144000 | 16.657677000 | 6.789175000 |
| 1 | 18.861518000 | 17.087340000 | 6.181946000 |
| 1 | 17.528721000 | 17.488783000 | 7.292906000 |
| 7 | 18.532931000 | 15.698647000 | 7.774585000 |
| 6 | 19.041747000 | 16.149009000 | 9.079910000 |
| 1 | 19.232964000 | 15.228922000 | 9.644440000 |
| 6 | 20.353066000 | 16.921584000 | 8.921332000 |
| 1 | 21.113418000 | 16.290678000 | 8.439217000 |
| 1 | 20.745031000 | 17.229558000 | 9.903684000 |
| 1 | 20.217888000 | 17.834361000 | 8.315759000 |
| 6 | 17.987119000 | 16.943730000 | 9.852866000 |
| 1 | 17.734624000 | 17.900836000 | 9.365890000 |
| 1 | 18.367012000 | 17.183502000 | 10.858386000 |
| 1 | 17.066419000 | 16.353357000 | 9.963109000 |
| 6 | 17.226722000 | 13.535911000 | 4.875374000 |
| 1 | 17.780186000 | 12.617478000 | 5.128728000 |
| 6 | 17.634310000 | 13.954192000 | 3.457056000 |
| 1 | 17.069974000 | 14.839539000 | 3.120995000 |
| 1 | 17.423601000 | 13.144075000 | 2.741373000 |
| 1 | 18.707610000 | 14.193086000 | 3.406748000 |
| 6 | 15.731259000 | 13.217430000 | 4.963213000 |

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| 1 | 15.467461000 | 12.406945000 | 4.265985000 |
| 1 | 15.121824000 | 14.095494000 | 4.693073000 |
| 7 | 16.592946000 | 9.444226000 | 8.932781000 |
| 6 | 16.111673000 | 8.639227000 | 10.048040000 |
| 1 | 16.372338000 | 7.570964000 | 9.919526000 |
| 1 | 15.016012000 | 8.714479000 | 10.131533000 |
| 6 | 16.781688000 | 9.214089000 | 11.300777000 |
| 1 | 16.138392000 | 9.963764000 | 11.782043000 |
| 1 | 16.974128000 | 8.417355000 | 12.034325000 |
| 7 | 18.037185000 | 9.791282000 | 10.836165000 |
| 6 | 19.206553000 | 9.896783000 | 11.711214000 |
| 1 | 20.034850000 | 10.215711000 | 11.061474000 |
| 6 | 19.038236000 | 10.940242000 | 12.817150000 |
| 1 | 18.813287000 | 11.922569000 | 12.383801000 |
| 1 | 19.957003000 | 11.013600000 | 13.420715000 |
| 1 | 18.211837000 | 10.663717000 | 13.491201000 |
| 6 | 19.596182000 | 8.532999000 | 12.300597000 |
| 1 | 18.865845000 | 8.187652000 | 13.049448000 |
| 1 | 20.568859000 | 8.611410000 | 12.810417000 |
| 1 | 19.681311000 | 7.764008000 | 11.520075000 |
| 6 | 16.079621000 | 9.225405000 | 7.578687000 |
| 1 | 16.693254000 | 9.863202000 | 6.923606000 |
| 6 | 16.268261000 | 7.768561000 | 7.135653000 |
| 1 | 17.315188000 | 7.450417000 | 7.248261000 |
| 1 | 15.979531000 | 7.648114000 | 6.079729000 |
| 1 | 15.638167000 | 7.083250000 | 7.724641000 |
| 6 | 14.624222000 | 9.674464000 | 7.426863000 |
| 1 | 13.961696000 | 9.132230000 | 8.120394000 |
| 1 | 14.266307000 | 9.473363000 | 6.404552000 |
| 1 | 14.528263000 | 10.750443000 | 7.624413000 |
| 6 | 19.696976000 | 8.217501000 | 8.709522000 |
| 1 | 19.842588000 | 7.731036000 | 7.734149000 |
| 1 | 18.879950000 | 7.723439000 | 9.247566000 |
| 1 | 20.630128000 | 8.104153000 | 9.282664000 |
| 6 | 23.236039000 | 10.206620000 | 5.856848000 |
| 6 | 23.691600000 | 8.918391000 | 6.183521000 |
| 1 | 23.122467000 | 8.334835000 | 6.907371000 |
| 6 | 24.853620000 | 8.413805000 | 5.600660000 |
| 1 | 25.210205000 | 7.416914000 | 5.873387000 |
| 6 | 25.568427000 | 9.184468000 | 4.676285000 |
| 1 | 26.473178000 | 8.783786000 | 4.211454000 |
| 6 | 25.120061000 | 10.467871000 | 4.346512000 |
| 1 | 25.677073000 | 11.073964000 | 3.627652000 |
| 6 | 23.965295000 | 10.980676000 | 4.938741000 |
| 1 | 23.605962000 | 11.980815000 | 4.694683000 |
| 6 | 20.820968000 | 14.638930000 | 5.738494000 |
| 1 | 21.434737000 | 15.313703000 | 6.356068000 |
| 1 | 20.113611000 | 15.239317000 | 5.150693000 |
| 1 | 21.481249000 | 14.083741000 | 5.060680000 |

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|---|---|---|---|
| 6 | 24.279121000 | 9.320751000 | 10.551929000 |
| 6 | 24.616397000 | 9.918488000 | 9.335218000 |
| 6 | 23.482846000 | 10.014817000 | 11.470909000 |
| 1 | 25.231049000 | 9.381477000 | 8.609781000 |
| 1 | 23.215037000 | 9.551390000 | 12.424452000 |
| 6 | 24.156437000 | 11.206118000 | 9.036615000 |
| 6 | 23.041984000 | 11.305717000 | 11.174064000 |
| 1 | 24.419606000 | 11.652919000 | 8.074444000 |
| 1 | 22.438520000 | 11.841612000 | 11.912783000 |
| 6 | 23.366602000 | 11.925329000 | 9.949516000 |
| 1 | 24.643075000 | 8.317640000 | 10.791023000 |
| 14 | 22.744395000 | 13.651166000 | 9.575239000 |
| 1 | 23.216090000 | 14.554884000 | 10.663460000 |
| 1 | 23.302709000 | 14.113802000 | 8.281539000 |
| 8 | 21.113728000 | 13.701716000 | 9.457171000 |
| 6 | 20.223542000 | 12.982578000 | 10.389169000 |
| 1 | 20.473576000 | 13.358013000 | 11.398533000 |
| 8 | 18.940507000 | 13.184864000 | 10.108041000 |
| 6 | 16.076251000 | 12.736412000 | 11.907256000 |
| 6 | 15.415150000 | 12.452814000 | 10.696551000 |
| 6 | 15.584245000 | 12.265355000 | 13.127327000 |
| 1 | 16.112738000 | 12.505527000 | 14.054310000 |
| 6 | 14.247136000 | 11.670545000 | 10.754629000 |
| 6 | 14.421245000 | 11.486419000 | 13.163980000 |
| 1 | 13.711521000 | 11.434084000 | 9.831835000 |
| 1 | 14.036264000 | 11.107656000 | 14.115132000 |
| 6 | 13.753471000 | 11.189010000 | 11.971626000 |
| 1 | 12.845435000 | 10.579346000 | 11.991519000 |
| 1 | 16.998265000 | 13.321602000 | 11.877864000 |
| 14 | 16.099635000 | 13.111936000 | 9.067227000 |
| 1 | 17.403601000 | 11.830203000 | 7.315010000 |
| 1 | 14.997982000 | 12.818362000 | 8.095829000 |
| 1 | 16.038378000 | 14.601124000 | 9.206231000 |

**21**

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| 1 | 20.267932000 | 12.686840000 | 11.931612000 |
| 15 | 18.281897000 | 10.380363000 | 9.119340000 |
| 7 | 19.710874000 | 9.621620000 | 8.402726000 |
| 6 | 20.462802000 | 10.418010000 | 7.597656000 |
| 7 | 21.503045000 | 9.913451000 | 6.927339000 |
| 6 | 22.124739000 | 10.752302000 | 6.085250000 |
| 7 | 21.681963000 | 11.979951000 | 5.788133000 |
| 6 | 20.621859000 | 12.414945000 | 6.478141000 |
| 7 | 20.074012000 | 11.718014000 | 7.514044000 |
| 7 | 20.006736000 | 13.582565000 | 6.161652000 |
| 15 | 18.596242000 | 14.003274000 | 7.151695000 |
| 7 | 17.385712000 | 14.293630000 | 6.021649000 |

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| 6 | 17.005231000 | 15.697213000 | 5.897048000 |
| 1 | 16.091542000 | 15.911976000 | 6.478709000 |
| 1 | 16.805427000 | 15.973813000 | 4.847520000 |
| 6 | 18.177075000 | 16.503646000 | 6.469519000 |
| 1 | 18.900331000 | 16.775333000 | 5.675878000 |
| 1 | 17.816722000 | 17.441971000 | 6.918201000 |
| 7 | 18.762001000 | 15.636723000 | 7.480585000 |
| 6 | 19.724137000 | 16.126982000 | 8.466306000 |
| 1 | 19.960748000 | 15.253533000 | 9.086270000 |
| 6 | 21.031721000 | 16.624803000 | 7.837237000 |
| 1 | 21.525463000 | 15.819662000 | 7.274445000 |
| 1 | 21.728149000 | 16.966020000 | 8.619409000 |
| 1 | 20.859599000 | 17.472589000 | 7.153109000 |
| 6 | 19.099794000 | 17.168374000 | 9.395983000 |
| 1 | 18.845470000 | 18.099890000 | 8.863524000 |
| 1 | 19.805474000 | 17.425420000 | 10.200842000 |
| 1 | 18.183861000 | 16.767301000 | 9.854162000 |
| 6 | 16.440942000 | 13.230315000 | 5.668616000 |
| 1 | 16.840497000 | 12.325828000 | 6.157694000 |
| 6 | 16.409460000 | 12.985431000 | 4.157465000 |
| 1 | 16.059177000 | 13.879261000 | 3.613998000 |
| 1 | 15.722217000 | 12.160529000 | 3.909521000 |
| 1 | 17.411913000 | 12.724972000 | 3.783191000 |
| 6 | 15.040549000 | 13.477435000 | 6.240948000 |
| 1 | 15.087352000 | 13.643239000 | 7.328156000 |
| 1 | 14.394143000 | 12.607728000 | 6.054019000 |
| 1 | 14.556325000 | 14.350668000 | 5.775528000 |
| 7 | 16.934678000 | 9.487020000 | 8.664988000 |
| 6 | 16.467287000 | 8.521928000 | 9.649262000 |
| 1 | 16.815252000 | 7.497518000 | 9.416111000 |
| 1 | 15.366466000 | 8.503214000 | 9.682646000 |
| 6 | 17.036742000 | 8.995894000 | 10.987174000 |
| 1 | 16.319291000 | 9.654580000 | 11.504201000 |
| 1 | 17.241554000 | 8.137633000 | 11.647189000 |
| 7 | 18.265839000 | 9.700228000 | 10.655047000 |
| 6 | 19.267399000 | 9.979802000 | 11.681233000 |
| 1 | 20.018764000 | 10.629070000 | 11.203249000 |
| 6 | 18.676101000 | 10.718663000 | 12.885901000 |
| 1 | 18.154110000 | 11.628335000 | 12.568073000 |
| 1 | 19.467475000 | 10.993696000 | 13.599715000 |
| 1 | 17.948498000 | 10.086919000 | 13.420269000 |
| 6 | 19.979879000 | 8.695235000 | 12.127059000 |
| 1 | 19.275222000 | 7.999146000 | 12.610737000 |
| 1 | 20.771125000 | 8.929314000 | 12.853821000 |
| 1 | 20.444702000 | 8.182677000 | 11.275105000 |
| 6 | 16.510700000 | 9.381847000 | 7.270391000 |
| 1 | 17.129081000 | 10.111018000 | 6.719654000 |
| 6 | 16.785427000 | 7.985561000 | 6.696238000 |
| 1 | 17.838536000 | 7.700278000 | 6.834063000 |
| 1 | 16.551764000 | 7.956395000 | 5.620252000 |

| 1 | 16.159335000 | 7.223656000 | 7.187455000 |
|---|---|---|---|
| 6 | 15.042883000 | 9.775288000 | 7.082461000 |
| 1 | 14.378063000 | 9.123522000 | 7.670961000 |
| 1 | 14.750839000 | 9.678141000 | 6.024735000 |
| 1 | 14.871855000 | 10.813006000 | 7.396309000 |
| 6 | 20.047217000 | 8.213062000 | 8.520623000 |
| 1 | 20.097473000 | 7.730125000 | 7.533252000 |
| 1 | 19.279705000 | 7.723135000 | 9.130579000 |
| 1 | 21.025072000 | 8.083810000 | 9.009004000 |
| 6 | 23.375691000 | 10.287222000 | 5.443343000 |
| 6 | 23.954177000 | 9.063438000 | 5.824889000 |
| 1 | 23.458507000 | 8.469531000 | 6.593819000 |
| 6 | 25.136432000 | 8.624967000 | 5.228213000 |
| 1 | 25.583921000 | 7.678298000 | 5.542210000 |
| 6 | 25.750982000 | 9.396052000 | 4.234112000 |
| 1 | 26.670941000 | 9.045657000 | 3.758560000 |
| 6 | 25.182974000 | 10.616962000 | 3.851272000 |
| 1 | 25.662650000 | 11.225751000 | 3.080453000 |
| 6 | 24.008093000 | 11.064807000 | 4.456555000 |
| 1 | 23.560734000 | 12.017745000 | 4.171206000 |
| 6 | 20.405326000 | 14.338826000 | 4.985105000 |
| 1 | 20.978161000 | 13.696366000 | 4.305270000 |
| 1 | 21.026909000 | 15.207781000 | 5.251395000 |
| 1 | 19.501597000 | 14.694990000 | 4.470797000 |
| 6 | 23.420048000 | 9.445311000 | 11.477255000 |
| 6 | 23.225192000 | 9.747429000 | 10.127377000 |
| 6 | 23.270099000 | 10.446829000 | 12.444682000 |
| 1 | 23.344762000 | 8.977019000 | 9.362659000 |
| 1 | 23.431900000 | 10.212048000 | 13.500221000 |
| 6 | 22.875209000 | 11.046776000 | 9.749226000 |
| 6 | 22.915915000 | 11.742749000 | 12.060724000 |
| 1 | 22.738365000 | 11.272960000 | 8.692405000 |
| 1 | 22.804208000 | 12.516036000 | 12.826872000 |
| 6 | 22.707331000 | 12.063044000 | 10.704141000 |
| 1 | 23.692702000 | 8.431162000 | 11.780878000 |
| 14 | 22.233551000 | 13.773284000 | 10.139542000 |
| 1 | 23.319538000 | 14.755034000 | 10.378356000 |
| 1 | 21.946808000 | 13.713001000 | 8.689447000 |
| 8 | 20.961943000 | 14.379725000 | 11.011905000 |
| 6 | 19.892556000 | 13.635632000 | 11.545778000 |
| 1 | 19.459580000 | 14.223838000 | 12.356422000 |
| 8 | 18.923714000 | 13.371355000 | 10.577087000 |
| 6 | 15.544692000 | 12.348084000 | 12.461994000 |
| 6 | 15.885416000 | 12.556400000 | 11.112864000 |
| 6 | 14.508607000 | 11.478886000 | 12.826231000 |
| 1 | 14.273700000 | 11.313635000 | 13.881713000 |
| 6 | 15.125361000 | 11.883555000 | 10.140688000 |
| 6 | 13.765601000 | 10.823160000 | 11.838911000 |
| 1 | 15.387950000 | 12.017170000 | 9.090920000 |
| 1 | 12.955017000 | 10.145489000 | 12.120954000 |

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|---|---|---|---|
| 6 | 14.069329000 | 11.038730000 | 10.490049000 |
| 1 | 13.495224000 | 10.532653000 | 9.709983000 |
| 1 | 16.105135000 | 12.870935000 | 13.242387000 |
| 14 | 17.264024000 | 13.767471000 | 10.633108000 |
| 1 | 17.243938000 | 12.872206000 | 9.088867000 |
| 1 | 16.771241000 | 14.887399000 | 9.783904000 |
| 1 | 17.371523000 | 14.485823000 | 11.973385000 |

**23**

| | | | |
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| 27 | 18.388444000 | 12.863832000 | 8.449435000 |
| 1 | 21.608121000 | 14.082808000 | 10.489213000 |
| 15 | 18.192909000 | 10.955032000 | 9.464570000 |
| 7 | 19.650347000 | 10.130721000 | 8.779975000 |
| 6 | 20.323259000 | 10.752211000 | 7.777797000 |
| 7 | 21.342757000 | 10.155720000 | 7.139712000 |
| 6 | 21.932374000 | 10.878604000 | 6.175954000 |
| 7 | 21.556438000 | 12.107829000 | 5.794216000 |
| 6 | 20.524548000 | 12.639882000 | 6.466520000 |
| 7 | 19.906199000 | 11.995684000 | 7.476232000 |
| 7 | 20.025212000 | 13.860254000 | 6.151287000 |
| 15 | 18.425308000 | 14.298753000 | 6.857170000 |
| 7 | 17.394253000 | 14.271729000 | 5.560552000 |
| 6 | 17.307123000 | 15.553800000 | 4.865481000 |
| 1 | 16.268718000 | 15.755548000 | 4.569415000 |
| 1 | 17.921290000 | 15.563199000 | 3.946267000 |
| 6 | 17.781352000 | 16.635549000 | 5.856858000 |
| 1 | 18.443574000 | 17.359901000 | 5.351062000 |
| 1 | 16.917106000 | 17.193823000 | 6.249941000 |
| 7 | 18.471424000 | 15.946776000 | 6.941859000 |
| 6 | 19.090962000 | 16.668136000 | 8.064059000 |
| 1 | 19.105823000 | 15.960434000 | 8.904041000 |
| 6 | 20.538374000 | 17.063260000 | 7.745350000 |
| 1 | 21.143286000 | 16.174044000 | 7.511958000 |
| 1 | 20.998891000 | 17.574980000 | 8.605336000 |
| 1 | 20.586708000 | 17.748090000 | 6.881714000 |
| 6 | 18.256628000 | 17.867855000 | 8.511331000 |
| 1 | 18.202626000 | 18.650019000 | 7.736803000 |
| 1 | 18.717226000 | 18.314683000 | 9.405214000 |
| 1 | 17.237167000 | 17.554925000 | 8.780092000 |
| 6 | 16.804659000 | 13.039420000 | 5.010564000 |
| 1 | 16.383747000 | 12.496012000 | 5.870828000 |
| 6 | 17.843023000 | 12.134825000 | 4.334191000 |
| 1 | 18.392523000 | 12.679317000 | 3.549348000 |
| 1 | 17.348811000 | 11.268833000 | 3.865893000 |
| 1 | 18.569555000 | 11.744060000 | 5.059733000 |
| 6 | 15.645120000 | 13.350059000 | 4.068402000 |
| 1 | 14.900967000 | 13.989677000 | 4.557946000 |
| 1 | 15.144735000 | 12.409950000 | 3.790113000 |

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| 1 | 15.991072000 | 13.834032000 | 3.140373000 |
| 7 | 16.937494000 | 9.898969000 | 9.153141000 |
| 6 | 16.820666000 | 8.860300000 | 10.175222000 |
| 1 | 17.412110000 | 7.962140000 | 9.920182000 |
| 1 | 15.774298000 | 8.541607000 | 10.283945000 |
| 6 | 17.322712000 | 9.501951000 | 11.469785000 |
| 1 | 16.481279000 | 9.949057000 | 12.025952000 |
| 1 | 17.799064000 | 8.748653000 | 12.119442000 |
| 7 | 18.276488000 | 10.530902000 | 11.066996000 |
| 6 | 19.064856000 | 11.266317000 | 12.065738000 |
| 1 | 19.243397000 | 12.262305000 | 11.636885000 |
| 6 | 18.270788000 | 11.505277000 | 13.348462000 |
| 1 | 17.348840000 | 12.057606000 | 13.122976000 |
| 1 | 18.868221000 | 12.114317000 | 14.039896000 |
| 1 | 18.017224000 | 10.563194000 | 13.860647000 |
| 6 | 20.407575000 | 10.579665000 | 12.343167000 |
| 1 | 20.262474000 | 9.582676000 | 12.792084000 |
| 1 | 21.006024000 | 11.180926000 | 13.046111000 |
| 1 | 20.989896000 | 10.449798000 | 11.417548000 |
| 6 | 16.327662000 | 9.700599000 | 7.834517000 |
| 1 | 16.409703000 | 10.672868000 | 7.326426000 |
| 6 | 17.059490000 | 8.657245000 | 6.979418000 |
| 1 | 18.085888000 | 8.977211000 | 6.744205000 |
| 1 | 16.527663000 | 8.499631000 | 6.027656000 |
| 1 | 17.108307000 | 7.684720000 | 7.495863000 |
| 6 | 14.837922000 | 9.369705000 | 7.964426000 |
| 1 | 14.674857000 | 8.331038000 | 8.294775000 |
| 1 | 14.341260000 | 9.491755000 | 6.990090000 |
| 1 | 14.350173000 | 10.041710000 | 8.684752000 |
| 6 | 20.006073000 | 8.766725000 | 9.148077000 |
| 1 | 19.486596000 | 8.029600000 | 8.514889000 |
| 1 | 19.726748000 | 8.598376000 | 10.194554000 |
| 1 | 21.087269000 | 8.616137000 | 9.034938000 |
| 6 | 23.089329000 | 10.269540000 | 5.473483000 |
| 6 | 23.641890000 | 9.060823000 | 5.930198000 |
| 1 | 23.198558000 | 8.577177000 | 6.801061000 |
| 6 | 24.741123000 | 8.498863000 | 5.280390000 |
| 1 | 25.173435000 | 7.566297000 | 5.651955000 |
| 6 | 25.293474000 | 9.130898000 | 4.160234000 |
| 1 | 26.149872000 | 8.685807000 | 3.647029000 |
| 6 | 24.744235000 | 10.331424000 | 3.695754000 |
| 1 | 25.174453000 | 10.828307000 | 2.822529000 |
| 6 | 23.652035000 | 10.901323000 | 4.350762000 |
| 1 | 23.214740000 | 11.837091000 | 4.001272000 |
| 6 | 20.558285000 | 14.567940000 | 4.997316000 |
| 1 | 21.653599000 | 14.498166000 | 4.982692000 |
| 1 | 20.266977000 | 15.622841000 | 5.065116000 |
| 1 | 20.173255000 | 14.145548000 | 4.054299000 |
| 6 | 20.254024000 | 14.308914000 | 15.849022000 |
| 6 | 18.874961000 | 14.535839000 | 15.908966000 |

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| 6 | 20.915366000 | 14.384557000 | 14.617914000 |
| 1 | 18.352660000 | 14.487268000 | 16.868620000 |
| 1 | 21.995134000 | 14.218478000 | 14.566640000 |
| 6 | 18.163295000 | 14.824352000 | 14.739731000 |
| 6 | 20.194631000 | 14.680159000 | 13.457292000 |
| 1 | 17.084800000 | 14.999424000 | 14.800392000 |
| 1 | 20.731364000 | 14.756191000 | 12.507081000 |
| 6 | 18.804694000 | 14.897274000 | 13.489989000 |
| 1 | 20.815198000 | 14.080118000 | 16.758924000 |
| 14 | 17.828134000 | 15.231567000 | 11.917573000 |
| 1 | 16.577169000 | 15.916375000 | 12.365678000 |
| 1 | 18.627894000 | 16.240261000 | 11.157218000 |
| 8 | 17.573316000 | 13.861147000 | 11.109052000 |
| 6 | 20.888916000 | 13.414550000 | 10.000146000 |
| 1 | 21.133588000 | 12.345588000 | 9.961256000 |
| 8 | 19.867968000 | 13.860016000 | 9.527872000 |
| 6 | 14.416604000 | 13.035394000 | 7.614414000 |
| 6 | 15.213046000 | 14.099552000 | 8.076899000 |
| 6 | 13.360432000 | 13.221510000 | 6.715949000 |
| 1 | 12.758369000 | 12.368231000 | 6.386461000 |
| 6 | 14.899842000 | 15.372582000 | 7.568077000 |
| 6 | 13.064899000 | 14.505302000 | 6.240506000 |
| 1 | 15.483197000 | 16.233597000 | 7.909349000 |
| 1 | 12.236092000 | 14.663459000 | 5.544625000 |
| 6 | 13.849048000 | 15.583455000 | 6.665160000 |
| 1 | 13.629185000 | 16.591760000 | 6.298084000 |
| 1 | 14.612956000 | 12.030214000 | 7.995338000 |
| 14 | 16.555860000 | 13.865359000 | 9.529797000 |
| 1 | 17.331042000 | 12.277594000 | 7.670972000 |
| 1 | 16.548835000 | 15.378544000 | 9.679280000 |
| 1 | 15.618332000 | 12.919456000 | 10.240060000 |

**24**

| | | | |
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| 27 | 17.756810000 | 12.686750000 | 8.712389000 |
| 15 | 17.634483000 | 10.823390000 | 9.675262000 |
| 7 | 19.343426000 | 10.291354000 | 9.510971000 |
| 6 | 20.004071000 | 10.882502000 | 8.488379000 |
| 7 | 21.151760000 | 10.381538000 | 8.018088000 |
| 6 | 21.667424000 | 11.000580000 | 6.948138000 |
| 7 | 21.033364000 | 11.948368000 | 6.245422000 |
| 6 | 19.876363000 | 12.390257000 | 6.755826000 |
| 7 | 19.400514000 | 11.983362000 | 7.960786000 |
| 7 | 19.105206000 | 13.283799000 | 6.085606000 |
| 15 | 17.614948000 | 13.833516000 | 6.918458000 |
| 7 | 16.365143000 | 13.631297000 | 5.821190000 |
| 6 | 16.241408000 | 14.696885000 | 4.839037000 |
| 1 | 15.193747000 | 14.823914000 | 4.525595000 |
| 1 | 16.829650000 | 14.492030000 | 3.924711000 |

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| 6 | 16.753862000 | 15.954061000 | 5.548964000 |
| 1 | 17.259677000 | 16.622232000 | 4.830792000 |
| 1 | 15.913351000 | 16.519145000 | 5.992506000 |
| 7 | 17.665964000 | 15.492213000 | 6.586365000 |
| 6 | 18.572070000 | 16.437786000 | 7.239700000 |
| 1 | 18.783657000 | 16.015300000 | 8.232818000 |
| 6 | 19.907557000 | 16.591422000 | 6.496928000 |
| 1 | 20.419639000 | 15.626155000 | 6.391674000 |
| 1 | 20.577197000 | 17.270967000 | 7.048304000 |
| 1 | 19.752704000 | 17.014957000 | 5.490302000 |
| 6 | 17.917926000 | 17.806790000 | 7.453473000 |
| 1 | 17.769622000 | 18.333787000 | 6.497435000 |
| 1 | 18.569932000 | 18.435337000 | 8.078467000 |
| 1 | 16.947606000 | 17.720139000 | 7.952825000 |
| 6 | 15.700336000 | 12.346035000 | 5.639834000 |
| 1 | 16.005732000 | 11.755004000 | 6.516453000 |
| 6 | 16.170951000 | 11.616767000 | 4.375357000 |
| 1 | 15.944385000 | 12.202620000 | 3.468873000 |
| 1 | 15.669040000 | 10.641640000 | 4.275021000 |
| 1 | 17.257679000 | 11.440512000 | 4.405154000 |
| 6 | 14.178429000 | 12.494527000 | 5.689222000 |
| 1 | 13.874173000 | 13.000726000 | 6.618115000 |
| 1 | 13.695261000 | 11.505825000 | 5.652670000 |
| 1 | 13.795213000 | 13.079124000 | 4.836976000 |
| 7 | 16.761280000 | 9.521756000 | 9.041396000 |
| 6 | 16.586961000 | 8.439401000 | 9.997927000 |
| 1 | 17.439152000 | 7.733779000 | 9.991352000 |
| 1 | 15.679532000 | 7.855009000 | 9.778517000 |
| 6 | 16.471298000 | 9.135409000 | 11.355008000 |
| 1 | 15.413082000 | 9.366002000 | 11.572920000 |
| 1 | 16.844068000 | 8.482474000 | 12.162636000 |
| 7 | 17.255996000 | 10.361156000 | 11.248420000 |
| 6 | 17.214050000 | 11.331680000 | 12.342786000 |
| 1 | 17.779249000 | 12.202087000 | 11.976748000 |
| 6 | 15.787519000 | 11.803949000 | 12.653314000 |
| 1 | 15.304085000 | 12.185696000 | 11.741779000 |
| 1 | 15.801854000 | 12.614090000 | 13.398313000 |
| 1 | 15.170801000 | 10.990215000 | 13.066879000 |
| 6 | 17.916287000 | 10.800265000 | 13.596669000 |
| 1 | 17.369819000 | 9.948893000 | 14.034452000 |
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| 1 | 18.937247000 | 10.463261000 | 13.362353000 |
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| 1 | 19.819077000 | 8.216559000 | 9.555638000 |
| 1 | 19.389224000 | 8.981092000 | 11.119436000 |
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| 1 | 26.598635000 | 9.550639000 | 5.338071000 |
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| 1 | 25.379748000 | 11.373674000 | 4.145497000 |
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| 6 | 19.444638000 | 13.662879000 | 4.723508000 |
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| 6 | 21.273328000 | 13.059467000 | 10.626263000 |
| 1 | 23.359179000 | 10.087315000 | 12.076168000 |
| 14 | 20.360245000 | 14.522044000 | 9.936675000 |
| 1 | 20.807783000 | 15.773020000 | 10.609245000 |
| 1 | 20.678280000 | 14.635467000 | 8.500783000 |
| 8 | 18.731933000 | 14.405796000 | 10.178092000 |
| 6 | 15.465252000 | 15.742892000 | 9.116407000 |
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| 1 | 13.842114000 | 16.165973000 | 7.763009000 |
| 6 | 16.146888000 | 17.551972000 | 10.564369000 |
| 6 | 14.327319000 | 17.879856000 | 8.998627000 |
| 1 | 16.795062000 | 17.956764000 | 11.346925000 |
| 1 | 13.560747000 | 18.522314000 | 8.557555000 |
| 6 | 15.157345000 | 18.371989000 | 10.010403000 |
| 1 | 15.034894000 | 19.397766000 | 10.368625000 |
| 1 | 15.577151000 | 14.713553000 | 8.775283000 |
| 14 | 17.557822000 | 15.175839000 | 11.055323000 |
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| 1 | 18.268934000 | 16.119614000 | 11.962917000 |

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| 1 | 16.871742000 | 14.165866000 | 11.876608000 |

**25**

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| 7 | 17.134372000 | 13.287483000 | 5.898138000 |
| 6 | 17.684987000 | 12.734388000 | 7.007176000 |
| 7 | 19.006428000 | 12.766983000 | 7.235829000 |
| 6 | 19.425729000 | 12.109356000 | 8.327954000 |
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| 6 | 17.350691000 | 11.310023000 | 8.778176000 |
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| 6 | 12.924684000 | 9.641908000 | 11.375227000 |
| 1 | 12.685086000 | 8.580917000 | 11.561448000 |
| 1 | 12.156204000 | 10.246032000 | 11.881901000 |
| 1 | 13.895768000 | 9.870677000 | 11.840711000 |
| 6 | 11.581872000 | 9.727664000 | 9.229807000 |
| 1 | 11.617391000 | 9.958730000 | 8.153584000 |
| 1 | 10.829634000 | 10.383926000 | 9.693883000 |
| 1 | 11.236953000 | 8.687899000 | 9.359404000 |
| 7 | 14.932729000 | 14.439934000 | 4.953948000 |
| 6 | 14.547559000 | 14.388589000 | 3.548602000 |
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| 6 | 15.158507000 | 13.096007000 | 2.999718000 |

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| 6 | 15.438553000 | 10.773544000 | 3.989748000 |
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| 6 | 14.247840000 | 10.099111000 | 3.305659000 |
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| 1 | 14.110572000 | 10.452634000 | 2.270404000 |
| 6 | 16.783799000 | 10.478495000 | 3.317473000 |
| 1 | 16.822881000 | 10.890288000 | 2.295516000 |
| 1 | 16.963715000 | 9.396266000 | 3.247937000 |
| 1 | 17.605880000 | 10.929724000 | 3.895854000 |
| 6 | 14.585732000 | 15.600610000 | 5.770150000 |
| 1 | 14.884365000 | 15.339074000 | 6.792829000 |
| 6 | 15.393255000 | 16.840669000 | 5.374564000 |
| 1 | 16.473001000 | 16.650015000 | 5.473540000 |
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| 1 | 12.521374000 | 14.955079000 | 6.023591000 |
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| 1 | 18.701525000 | 14.619538000 | 5.444574000 |
| 1 | 17.362291000 | 14.552271000 | 4.263716000 |
| 1 | 18.572693000 | 13.232432000 | 4.333491000 |
| 6 | 20.862875000 | 12.209769000 | 8.682224000 |
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| 1 | 21.298897000 | 13.623084000 | 7.118650000 |
| 6 | 23.062010000 | 13.165528000 | 8.299721000 |
| 1 | 23.718065000 | 13.830708000 | 7.732898000 |
| 6 | 23.573664000 | 12.423729000 | 9.371272000 |
| 1 | 24.627137000 | 12.517445000 | 9.648751000 |
| 6 | 22.734284000 | 11.565597000 | 10.091952000 |
| 1 | 23.134845000 | 10.978263000 | 10.922208000 |
| 6 | 21.385340000 | 11.460171000 | 9.751144000 |
| 1 | 20.714224000 | 10.800827000 | 10.302588000 |
| 6 | 16.918117000 | 9.551414000 | 10.401005000 |
| 1 | 17.636910000 | 8.775953000 | 10.088003000 |
| 1 | 16.029023000 | 9.064700000 | 10.821861000 |
| 1 | 17.397367000 | 10.163460000 | 11.178380000 |
| 6 | 14.492507000 | 13.729676000 | 8.537388000 |
| 1 | 15.359257000 | 14.398945000 | 8.622948000 |
| 8 | 14.439826000 | 12.692102000 | 9.315670000 |
| 1 | 13.467438000 | 11.956295000 | 7.049072000 |

**26**

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| 6 | 17.722857000 | 12.658032000 | 6.870213000 |
| 7 | 19.019955000 | 12.792308000 | 7.167844000 |
| 6 | 19.457275000 | 12.125909000 | 8.243356000 |
| 7 | 18.715478000 | 11.260459000 | 8.947370000 |
| 6 | 17.432837000 | 11.158446000 | 8.590705000 |
| 7 | 16.859756000 | 11.932817000 | 7.630387000 |
| 7 | 16.627581000 | 10.225680000 | 9.150655000 |
| 15 | 15.094608000 | 9.957560000 | 8.290058000 |
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| 6 | 13.780853000 | 7.991939000 | 9.468907000 |
| 1 | 12.762886000 | 7.813861000 | 9.074880000 |
| 1 | 13.830481000 | 7.540738000 | 10.474516000 |
| 6 | 14.829879000 | 7.358059000 | 8.539934000 |
| 1 | 15.692295000 | 6.982244000 | 9.124350000 |
| 1 | 14.402090000 | 6.500029000 | 7.998087000 |
| 7 | 15.209253000 | 8.421805000 | 7.617923000 |
| 6 | 16.100095000 | 8.194552000 | 6.480873000 |
| 1 | 16.222920000 | 9.194855000 | 6.030333000 |
| 6 | 17.492950000 | 7.698889000 | 6.890820000 |
| 1 | 17.980300000 | 8.412612000 | 7.570851000 |
| 1 | 18.135853000 | 7.588038000 | 6.003520000 |
| 1 | 17.448439000 | 6.719658000 | 7.396682000 |
| 6 | 15.443206000 | 7.298387000 | 5.428460000 |
| 1 | 15.239197000 | 6.288127000 | 5.820617000 |
| 1 | 16.100523000 | 7.187591000 | 4.551538000 |
| 1 | 14.488715000 | 7.735066000 | 5.095271000 |
| 6 | 13.386344000 | 10.352446000 | 10.391726000 |
| 1 | 13.591975000 | 11.355744000 | 9.982445000 |
| 6 | 13.936697000 | 10.301768000 | 11.820935000 |
| 1 | 13.825148000 | 9.295975000 | 12.260011000 |
| 1 | 13.394198000 | 11.009035000 | 12.467847000 |
| 1 | 15.002452000 | 10.574033000 | 11.840697000 |
| 6 | 11.871162000 | 10.135814000 | 10.371789000 |
| 1 | 11.485522000 | 10.122514000 | 9.341031000 |
| 1 | 11.365895000 | 10.947932000 | 10.915758000 |
| 1 | 11.588456000 | 9.186562000 | 10.856956000 |
| 7 | 14.894156000 | 14.331094000 | 4.949243000 |
| 6 | 14.748693000 | 14.558515000 | 3.520068000 |
| 1 | 15.223557000 | 15.503839000 | 3.203514000 |
| 1 | 13.682399000 | 14.622307000 | 3.234751000 |
| 6 | 15.426314000 | 13.360532000 | 2.824360000 |
| 1 | 14.852513000 | 13.058184000 | 1.936927000 |
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| 7 | 15.446495000 | 12.289163000 | 3.815890000 |

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| 1 | 15.379443000 | 10.289671000 | 4.266618000 |
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| 1 | 14.100351000 | 10.688559000 | 2.124085000 |
| 1 | 15.328873000 | 9.400604000 | 1.993960000 |
| 1 | 15.646097000 | 10.997857000 | 1.283937000 |
| 6 | 17.328107000 | 10.678526000 | 3.460890000 |
| 1 | 17.830465000 | 11.361852000 | 2.757514000 |
| 1 | 17.564855000 | 9.646572000 | 3.154509000 |
| 1 | 17.754440000 | 10.842896000 | 4.461308000 |
| 6 | 14.518694000 | 15.333320000 | 5.948268000 |
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| 6 | 15.523728000 | 16.490449000 | 6.001988000 |
| 1 | 16.527722000 | 16.119281000 | 6.257232000 |
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| 1 | 15.584309000 | 17.016176000 | 5.034276000 |
| 6 | 13.086803000 | 15.834441000 | 5.739291000 |
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| 1 | 12.787983000 | 16.486769000 | 6.573751000 |
| 1 | 12.379984000 | 14.992111000 | 5.693041000 |
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| 1 | 18.755916000 | 14.615957000 | 5.482476000 |
| 1 | 17.405991000 | 14.722845000 | 4.323081000 |
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| 6 | 21.661687000 | 13.289632000 | 8.012188000 |
| 1 | 21.238084000 | 13.834652000 | 7.167898000 |
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| 1 | 23.583927000 | 14.267177000 | 7.927927000 |
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| 6 | 22.700859000 | 11.855417000 | 10.178830000 |
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| 6 | 21.391842000 | 11.622786000 | 9.755729000 |
| 1 | 20.759780000 | 10.887947000 | 10.255705000 |
| 6 | 17.144835000 | 9.358789000 | 10.195066000 |
| 1 | 17.844436000 | 8.604980000 | 9.798117000 |
| 1 | 16.300066000 | 8.850361000 | 10.674174000 |
| 1 | 17.677687000 | 9.954094000 | 10.949475000 |
| 6 | 12.939115000 | 12.422053000 | 7.528047000 |
| 1 | 12.453018000 | 13.041454000 | 6.757510000 |
| 8 | 13.767123000 | 13.053395000 | 8.356841000 |
| 1 | 13.443204000 | 11.563577000 | 6.769844000 |

**27**

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| 15 | 17.352203000 | 12.881101000 | 6.173507000 |

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| 6 | 19.624525000 | 12.701549000 | 7.517829000 |
| 7 | 20.922890000 | 12.907850000 | 7.733624000 |
| 6 | 21.516881000 | 12.105293000 | 8.627874000 |
| 7 | 20.877016000 | 11.146592000 | 9.314226000 |
| 6 | 19.576898000 | 10.996144000 | 9.057224000 |
| 7 | 18.890246000 | 11.741985000 | 8.145485000 |
| 7 | 18.852438000 | 10.041478000 | 9.711884000 |
| 15 | 17.210859000 | 9.822719000 | 9.162862000 |
| 7 | 16.347018000 | 9.623797000 | 10.598758000 |
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| 7 | 17.012896000 | 8.222111000 | 8.753181000 |
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| 1 | 18.825297000 | 6.158018000 | 6.710716000 |
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| 6 | 16.262381000 | 7.297781000 | 6.584806000 |
| 1 | 15.654247000 | 6.504483000 | 7.049320000 |
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| 1 | 16.721345000 | 11.556454000 | 11.184446000 |
| 6 | 15.933392000 | 10.486856000 | 12.869292000 |
| 1 | 15.159637000 | 9.742595000 | 13.116847000 |
| 1 | 15.709369000 | 11.393471000 | 13.453493000 |
| 1 | 16.906770000 | 10.085082000 | 13.192575000 |
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| 1 | 14.631449000 | 11.615744000 | 9.827339000 |
| 1 | 14.385098000 | 12.325731000 | 11.454024000 |
| 1 | 13.770220000 | 10.696726000 | 11.099000000 |
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| 1 | 14.976600000 | 14.251186000 | 4.503321000 |
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| 1 | 16.419725000 | 13.453161000 | 2.817573000 |
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| 1 | 17.743779000 | 9.938379000 | 2.403438000 |

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| 1 | 20.065034000 | 12.017106000 | 4.486043000 |
| 6 | 15.807442000 | 14.890890000 | 7.168164000 |
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| 6 | 15.714428000 | 16.412619000 | 7.043465000 |
| 1 | 16.700867000 | 16.853824000 | 6.830057000 |
| 1 | 15.328338000 | 16.850716000 | 7.976772000 |
| 1 | 15.024157000 | 16.707928000 | 6.236636000 |
| 6 | 14.442515000 | 14.247168000 | 7.446062000 |
| 1 | 13.761305000 | 14.364314000 | 6.587566000 |
| 1 | 13.965263000 | 14.722960000 | 8.317993000 |
| 1 | 14.561940000 | 13.173355000 | 7.656074000 |
| 6 | 19.612043000 | 14.579753000 | 5.960459000 |
| 1 | 20.198687000 | 15.149486000 | 6.694800000 |
| 1 | 18.840877000 | 15.233246000 | 5.533143000 |
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| 6 | 25.054956000 | 13.421283000 | 8.330745000 |
| 1 | 25.601083000 | 14.180565000 | 7.764879000 |
| 6 | 25.732125000 | 12.612944000 | 9.252130000 |
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| 6 | 25.030971000 | 11.633228000 | 9.966046000 |
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| 6 | 14.762112000 | 10.945942000 | 6.035480000 |
| 1 | 14.756472000 | 11.986232000 | 5.672673000 |
| 8 | 15.342096000 | 10.800447000 | 7.290956000 |
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**28**

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| 6 | 19.511271000 | 12.655340000 | 7.773066000 |
| 7 | 20.801625000 | 12.897202000 | 8.031023000 |
| 6 | 21.408443000 | 12.036162000 | 8.858642000 |
| 7 | 20.820351000 | 10.973247000 | 9.429216000 |

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| 1 | 14.611262000 | 12.203399000 | 11.861005000 |
| 1 | 13.956842000 | 10.576496000 | 11.574847000 |
| 7 | 16.267458000 | 14.363403000 | 6.808320000 |
| 6 | 15.870528000 | 15.074236000 | 5.598346000 |
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| 6 | 17.422068000 | 11.984616000 | 4.005379000 |
| 1 | 17.523113000 | 11.100076000 | 4.656321000 |
| 6 | 16.381966000 | 11.650862000 | 2.937348000 |
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| 6 | 18.794377000 | 12.296312000 | 3.397316000 |
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| 1 | 19.550899000 | 12.423696000 | 4.185828000 |

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| 1 | 17.920691000 | 15.727006000 | 8.564255000 |
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| 1 | 16.784480000 | 16.890223000 | 7.823548000 |
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| 1 | 14.238493000 | 15.598961000 | 9.274175000 |
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| 1 | 19.859727000 | 14.421289000 | 5.371796000 |
| 6 | 22.842021000 | 12.275251000 | 9.152989000 |
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| 6 | 24.864508000 | 13.577381000 | 8.819194000 |
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| 1 | 10.853911000 | 13.000586000 | 8.670608000 |
| 6 | 12.632276000 | 11.981214000 | 7.973878000 |
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**29**

| 27 | 17.081963000 | 11.371214000 | 7.956557000 |
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| 7 | 20.805505000 | 10.971497000 | 9.721095000 |
| 6 | 19.498195000 | 10.908283000 | 9.451879000 |
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| 7 | 18.683630000 | 10.063519000 | 10.140344000 |
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| 1 | 15.329287000 | 12.428345000 | 3.652794000 |
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| 1 | 16.823532000 | 14.398817000 | 9.510389000 |
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| 1 | 17.428479000 | 16.773863000 | 9.011764000 |
| 1 | 16.222278000 | 16.648316000 | 10.328610000 |
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| 1 | 20.451726000 | 15.069240000 | 7.546429000 |
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| 1 | 25.774222000 | 13.194918000 | 7.669343000 |
| 6 | 25.786677000 | 11.538883000 | 9.062962000 |
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| 6 | 23.619061000 | 10.804685000 | 9.854493000 |
| 1 | 22.996218000 | 10.135549000 | 10.448506000 |
| 6 | 19.185922000 | 9.354985000 | 11.305878000 |
| 1 | 19.837394000 | 8.510402000 | 11.032154000 |
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| 6 | 11.930611000 | 13.024568000 | 4.653127000 |
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| 1 | 11.218921000 | 13.731408000 | 4.218234000 |
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| 6 | 12.767175000 | 13.423565000 | 5.701859000 |

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| 1 | 11.367731000 | 11.392235000 | 3.346180000 |
| 14 | 14.938230000 | 9.885329000 | 6.507661000 |
| 1 | 14.513528000 | 9.304462000 | 7.813202000 |
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| 1 | 15.569905000 | 11.212074000 | 7.614306000 |

**TS1**

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| 7 | 2.837377000 | 1.233434000 | -0.130061000 |
| 6 | 3.357136000 | 0.534545000 | 0.887644000 |
| 7 | 2.647900000 | -0.251315000 | 1.712555000 |
| 6 | 1.330619000 | -0.290040000 | 1.496481000 |
| 7 | 0.707881000 | 0.443205000 | 0.541597000 |
| 7 | 0.529576000 | -1.131592000 | 2.210243000 |
| 15 | -1.030734000 | -1.454245000 | 1.416841000 |
| 7 | -1.912007000 | -2.185285000 | 2.642584000 |
| 6 | -2.261540000 | -3.572529000 | 2.338787000 |
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| 1 | -2.307845000 | -4.179235000 | 3.256457000 |
| 6 | -1.160526000 | -4.069469000 | 1.403646000 |
| 1 | -0.291427000 | -4.437319000 | 1.984416000 |
| 1 | -1.522348000 | -4.899006000 | 0.777065000 |
| 7 | -0.832398000 | -2.904650000 | 0.590306000 |
| 6 | 0.085924000 | -2.988921000 | -0.547337000 |
| 1 | 0.155021000 | -1.956357000 | -0.923782000 |
| 6 | 1.506527000 | -3.427283000 | -0.166786000 |
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| 6 | -1.339754000 | 1.877123000 | -3.987260000 |
| 1 | -2.027920000 | 1.499038000 | -4.757866000 |
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| 1 | -2.192108000 | -0.724978000 | -4.939371000 |
| 6 | 0.419611000 | -0.756455000 | -3.767215000 |
| 1 | 0.506854000 | -0.279723000 | -4.757698000 |
| 1 | 0.599465000 | -1.834836000 | -3.897972000 |
| 1 | 1.216005000 | -0.351323000 | -3.123795000 |
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| 6 | -1.523706000 | 5.580154000 | -1.609256000 |
| 1 | -0.494468000 | 5.689814000 | -1.986559000 |
| 1 | -1.700379000 | 6.346685000 | -0.838838000 |
| 1 | -2.218059000 | 5.785474000 | -2.439684000 |
| 6 | -3.188359000 | 4.022367000 | -0.504742000 |
| 1 | -3.922409000 | 4.196291000 | -1.308731000 |
| 1 | -3.398945000 | 4.745950000 | 0.298357000 |
| 1 | -3.344334000 | 3.008627000 | -0.104335000 |
| 6 | 1.680280000 | 2.640701000 | -2.202333000 |
| 1 | 2.385607000 | 3.278161000 | -1.650386000 |
| 1 | 1.001100000 | 3.278645000 | -2.779577000 |
| 1 | 2.261262000 | 2.004586000 | -2.890851000 |
| 6 | 4.820767000 | 0.616108000 | 1.111934000 |
| 6 | 5.622800000 | 1.428144000 | 0.290223000 |
| 1 | 5.146090000 | 1.984869000 | -0.517185000 |
| 6 | 6.996928000 | 1.516819000 | 0.515357000 |
| 1 | 7.613281000 | 2.152691000 | -0.125027000 |
| 6 | 7.586740000 | 0.794754000 | 1.560234000 |
| 1 | 8.661668000 | 0.874769000 | 1.743731000 |
| 6 | 6.797004000 | -0.025568000 | 2.374957000 |
| 1 | 7.257306000 | -0.595852000 | 3.185954000 |
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| 1 | 4.791225000 | -0.743778000 | 2.780795000 |
| 6 | 1.116201000 | -1.971749000 | 3.241249000 |
| 1 | 1.783940000 | -2.741090000 | 2.818438000 |
| 1 | 0.299375000 | -2.461612000 | 3.785293000 |
| 1 | 1.705815000 | -1.359265000 | 3.938023000 |
| 6 | -1.305809000 | 2.174075000 | 2.025221000 |

| | | | |
|---|---|---|---|
| 8 | -2.214618000 | 1.674114000 | 2.575590000 |
| 8 | -0.442917000 | 2.926365000 | 1.759672000 |

**TS2**

| | | | |
|---|---|---|---|
| 27 | 14.849773000 | 11.978774000 | 7.374035000 |
| 1 | 12.366639000 | 12.707528000 | 7.947316000 |
| 15 | 15.360579000 | 12.945963000 | 5.586215000 |
| 7 | 17.106613000 | 13.231069000 | 5.850218000 |
| 6 | 17.635874000 | 12.744285000 | 6.996148000 |
| 7 | 18.956276000 | 12.791279000 | 7.224791000 |
| 6 | 19.382916000 | 12.188522000 | 8.341648000 |
| 7 | 18.600452000 | 11.475204000 | 9.165061000 |
| 6 | 17.299945000 | 11.440042000 | 8.852630000 |
| 7 | 16.754274000 | 12.181064000 | 7.857076000 |
| 7 | 16.456973000 | 10.559428000 | 9.450658000 |
| 15 | 15.124574000 | 10.063145000 | 8.353919000 |
| 7 | 14.098147000 | 9.226726000 | 9.370728000 |
| 6 | 14.050174000 | 7.790430000 | 9.103312000 |
| 1 | 13.204498000 | 7.535980000 | 8.438038000 |
| 1 | 13.930075000 | 7.213704000 | 10.034625000 |
| 6 | 15.373440000 | 7.459946000 | 8.408369000 |
| 1 | 16.162588000 | 7.237507000 | 9.151378000 |
| 1 | 15.271418000 | 6.574593000 | 7.762888000 |
| 7 | 15.671662000 | 8.651521000 | 7.620208000 |
| 6 | 16.775329000 | 8.671443000 | 6.657780000 |
| 1 | 16.769766000 | 9.694032000 | 6.246046000 |
| 6 | 18.157184000 | 8.423518000 | 7.279713000 |
| 1 | 18.387511000 | 9.142695000 | 8.076736000 |
| 1 | 18.937252000 | 8.524288000 | 6.508549000 |
| 1 | 18.231953000 | 7.406837000 | 7.699975000 |
| 6 | 16.507790000 | 7.700199000 | 5.506863000 |
| 1 | 16.532400000 | 6.654655000 | 5.854575000 |
| 1 | 17.277062000 | 7.807067000 | 4.727794000 |
| 1 | 15.523017000 | 7.891903000 | 5.055225000 |
| 6 | 12.991034000 | 9.912511000 | 10.051517000 |
| 1 | 13.221463000 | 10.984926000 | 9.962700000 |
| 6 | 12.944380000 | 9.558215000 | 11.539945000 |
| 1 | 12.708708000 | 8.492222000 | 11.699497000 |
| 1 | 12.162897000 | 10.146910000 | 12.044969000 |
| 1 | 13.905691000 | 9.782198000 | 12.027580000 |
| 6 | 11.640916000 | 9.668053000 | 9.370895000 |
| 1 | 11.699986000 | 9.898165000 | 8.295324000 |
| 1 | 10.872131000 | 10.316548000 | 9.818749000 |
| 1 | 11.303829000 | 8.624505000 | 9.489305000 |
| 7 | 14.920076000 | 14.441713000 | 4.958434000 |
| 6 | 14.564569000 | 14.458424000 | 3.546917000 |
| 1 | 15.000708000 | 15.331580000 | 3.031778000 |
| 1 | 13.468759000 | 14.507104000 | 3.404002000 |

| | | | |
|---|---|---|---|
| 6 | 15.124343000 | 13.153080000 | 2.963006000 |
| 1 | 14.468023000 | 12.764761000 | 2.169276000 |
| 1 | 16.120294000 | 13.316811000 | 2.508794000 |
| 7 | 15.179181000 | 12.229574000 | 4.085932000 |
| 6 | 15.396146000 | 10.801581000 | 3.891400000 |
| 1 | 15.419292000 | 10.388105000 | 4.910390000 |
| 6 | 14.211886000 | 10.150445000 | 3.174502000 |
| 1 | 13.283113000 | 10.357572000 | 3.728320000 |
| 1 | 14.345576000 | 9.058438000 | 3.119028000 |
| 1 | 14.094745000 | 10.525326000 | 2.144075000 |
| 6 | 16.745987000 | 10.512649000 | 3.224652000 |
| 1 | 16.810342000 | 10.969229000 | 2.223071000 |
| 1 | 16.903453000 | 9.430491000 | 3.108725000 |
| 1 | 17.569273000 | 10.915591000 | 3.835431000 |
| 6 | 14.755441000 | 15.620078000 | 5.803545000 |
| 1 | 14.895432000 | 15.262656000 | 6.836829000 |
| 6 | 15.835860000 | 16.677598000 | 5.548447000 |
| 1 | 16.834462000 | 16.268118000 | 5.760652000 |
| 1 | 15.678644000 | 17.553479000 | 6.197187000 |
| 1 | 15.820487000 | 17.030031000 | 4.503548000 |
| 6 | 13.343267000 | 16.201273000 | 5.686868000 |
| 1 | 13.174241000 | 16.643663000 | 4.691334000 |
| 1 | 13.185162000 | 16.993919000 | 6.433819000 |
| 1 | 12.586426000 | 15.417657000 | 5.845692000 |
| 6 | 17.981307000 | 13.819995000 | 4.849708000 |
| 1 | 18.734128000 | 14.461742000 | 5.327467000 |
| 1 | 17.375760000 | 14.428055000 | 4.168323000 |
| 1 | 18.510687000 | 13.047571000 | 4.267528000 |
| 6 | 20.832885000 | 12.247699000 | 8.649681000 |
| 6 | 21.698185000 | 13.017744000 | 7.852518000 |
| 1 | 21.279182000 | 13.573268000 | 7.012630000 |
| 6 | 23.063896000 | 13.059420000 | 8.135854000 |
| 1 | 23.730056000 | 13.662633000 | 7.514001000 |
| 6 | 23.582115000 | 12.327084000 | 9.210996000 |
| 1 | 24.651788000 | 12.363241000 | 9.434841000 |
| 6 | 22.728678000 | 11.548219000 | 10.001480000 |
| 1 | 23.133606000 | 10.967608000 | 10.834369000 |
| 6 | 21.361265000 | 11.511629000 | 9.725456000 |
| 1 | 20.680987000 | 10.910338000 | 10.329357000 |
| 6 | 16.941713000 | 9.745219000 | 10.552666000 |
| 1 | 17.687077000 | 8.999893000 | 10.228841000 |
| 1 | 16.084138000 | 9.224011000 | 10.996235000 |
| 1 | 17.413158000 | 10.385966000 | 11.311185000 |
| 6 | 13.348707000 | 13.166256000 | 8.102440000 |
| 1 | 13.451131000 | 14.181594000 | 7.713179000 |
| 8 | 14.068667000 | 12.797066000 | 9.095708000 |
| 1 | 13.693292000 | 11.380219000 | 6.670645000 |

**TS3**

| | | | |
|---|---|---|---|
| 27 | 15.128347000 | 11.783543000 | 7.179870000 |
| 1 | 12.218223000 | 10.966951000 | 7.080698000 |
| 15 | 15.630561000 | 13.032717000 | 5.498594000 |
| 7 | 17.319316000 | 13.325017000 | 5.838752000 |
| 6 | 17.837494000 | 12.663579000 | 6.912800000 |
| 7 | 19.124106000 | 12.787838000 | 7.227195000 |
| 6 | 19.560872000 | 12.089430000 | 8.285856000 |
| 7 | 18.791180000 | 11.239513000 | 8.982309000 |
| 6 | 17.519602000 | 11.145392000 | 8.611497000 |
| 7 | 16.956870000 | 11.882639000 | 7.606011000 |
| 7 | 16.688983000 | 10.247968000 | 9.212296000 |
| 15 | 15.173955000 | 10.006820000 | 8.377254000 |
| 7 | 14.128163000 | 9.460278000 | 9.551289000 |
| 6 | 13.699951000 | 8.075351000 | 9.371621000 |
| 1 | 12.716475000 | 8.023254000 | 8.869461000 |
| 1 | 13.608741000 | 7.551982000 | 10.337814000 |
| 6 | 14.774239000 | 7.423188000 | 8.490472000 |
| 1 | 15.584367000 | 6.995624000 | 9.113375000 |
| 1 | 14.346339000 | 6.603075000 | 7.892986000 |
| 7 | 15.249538000 | 8.504610000 | 7.635946000 |
| 6 | 16.199679000 | 8.286076000 | 6.544701000 |
| 1 | 16.435203000 | 9.300092000 | 6.179363000 |
| 6 | 17.518450000 | 7.651466000 | 7.002805000 |
| 1 | 18.012884000 | 8.276228000 | 7.760654000 |
| 1 | 18.208536000 | 7.553226000 | 6.150299000 |
| 1 | 17.368024000 | 6.646495000 | 7.431917000 |
| 6 | 15.540370000 | 7.530294000 | 5.388742000 |
| 1 | 15.230737000 | 6.514793000 | 5.687253000 |
| 1 | 16.236026000 | 7.433223000 | 4.540267000 |
| 1 | 14.645450000 | 8.071699000 | 5.046325000 |
| 6 | 13.399333000 | 10.401685000 | 10.411156000 |
| 1 | 13.738845000 | 11.401839000 | 10.098517000 |
| 6 | 13.758908000 | 10.192107000 | 11.884919000 |
| 1 | 13.488942000 | 9.176337000 | 12.220790000 |
| 1 | 13.215751000 | 10.906977000 | 12.522240000 |
| 1 | 14.837242000 | 10.336006000 | 12.051357000 |
| 6 | 11.889347000 | 10.349690000 | 10.177072000 |
| 1 | 11.655493000 | 10.501737000 | 9.113677000 |
| 1 | 11.393299000 | 11.146837000 | 10.750244000 |
| 1 | 11.458695000 | 9.388380000 | 10.504000000 |
| 7 | 15.119439000 | 14.545483000 | 4.978166000 |
| 6 | 14.641240000 | 14.573031000 | 3.602239000 |
| 1 | 14.921801000 | 15.514878000 | 3.103850000 |
| 1 | 13.539926000 | 14.475039000 | 3.548136000 |
| 6 | 15.313949000 | 13.381104000 | 2.914466000 |
| 1 | 14.695064000 | 13.003828000 | 2.087142000 |
| 1 | 16.293615000 | 13.672418000 | 2.486958000 |
| 7 | 15.444790000 | 12.381248000 | 3.964291000 |

| 6 | 15.817679000 | 10.998821000 | 3.667265000 |
|---|---|---|---|
| 1 | 15.716509000 | 10.474183000 | 4.630743000 |
| 6 | 14.835731000 | 10.353671000 | 2.690548000 |
| 1 | 13.803025000 | 10.468568000 | 3.055263000 |
| 1 | 15.052725000 | 9.278760000 | 2.591340000 |
| 1 | 14.903503000 | 10.799650000 | 1.685046000 |
| 6 | 17.272250000 | 10.863340000 | 3.198711000 |
| 1 | 17.453673000 | 11.442920000 | 2.278710000 |
| 1 | 17.515100000 | 9.810523000 | 2.982059000 |
| 1 | 17.968889000 | 11.222670000 | 3.971100000 |
| 6 | 14.722015000 | 15.576949000 | 5.945080000 |
| 1 | 15.312789000 | 15.365485000 | 6.852617000 |
| 6 | 15.111404000 | 16.971936000 | 5.449346000 |
| 1 | 16.169583000 | 17.007947000 | 5.144725000 |
| 1 | 14.949582000 | 17.713386000 | 6.246854000 |
| 1 | 14.495608000 | 17.278459000 | 4.588112000 |
| 6 | 13.240276000 | 15.497700000 | 6.329396000 |
| 1 | 12.592025000 | 15.692350000 | 5.458754000 |
| 1 | 13.004212000 | 16.257678000 | 7.091206000 |
| 1 | 13.017230000 | 14.507625000 | 6.759544000 |
| 6 | 18.192817000 | 14.145460000 | 5.012260000 |
| 1 | 18.805649000 | 14.807416000 | 5.639987000 |
| 1 | 17.566611000 | 14.758158000 | 4.353096000 |
| 1 | 18.871837000 | 13.525841000 | 4.403908000 |
| 6 | 20.966784000 | 12.258120000 | 8.706556000 |
| 6 | 21.794388000 | 13.196044000 | 8.061996000 |
| 1 | 21.379871000 | 13.775758000 | 7.236409000 |
| 6 | 23.110872000 | 13.381798000 | 8.483644000 |
| 1 | 23.743437000 | 14.118711000 | 7.982346000 |
| 6 | 23.622943000 | 12.628236000 | 9.547231000 |
| 1 | 24.650997000 | 12.784660000 | 9.885113000 |
| 6 | 22.811694000 | 11.679248000 | 10.181971000 |
| 1 | 23.210780000 | 11.082116000 | 11.006296000 |
| 6 | 21.492376000 | 11.495708000 | 9.767385000 |
| 1 | 20.845181000 | 10.767316000 | 10.257369000 |
| 6 | 17.197619000 | 9.396928000 | 10.274911000 |
| 1 | 17.936360000 | 8.670050000 | 9.900372000 |
| 1 | 16.351973000 | 8.859148000 | 10.720188000 |
| 1 | 17.684182000 | 10.007902000 | 11.048427000 |
| 6 | 12.922931000 | 11.768302000 | 6.792591000 |
| 1 | 12.510161000 | 12.303913000 | 5.917792000 |
| 8 | 13.318440000 | 12.568985000 | 7.816135000 |
| 1 | 13.774707000 | 11.121596000 | 6.283727000 |

**TS4**

| 27 | 17.135371000 | 11.057731000 | 7.427789000 |
|---|---|---|---|
| 1 | 18.271037000 | 9.199224000 | 4.660756000 |
| 15 | 17.315164000 | 12.940353000 | 6.426231000 |

| | | | |
|---|---|---|---|
| 7 | 19.005177000 | 13.326416000 | 6.785007000 |
| 6 | 19.671456000 | 12.469964000 | 7.597479000 |
| 7 | 20.914929000 | 12.749334000 | 7.997466000 |
| 6 | 21.444826000 | 11.923602000 | 8.908226000 |
| 7 | 20.780676000 | 10.909092000 | 9.480850000 |
| 6 | 19.545042000 | 10.683298000 | 9.025717000 |
| 7 | 18.983549000 | 11.369722000 | 7.998862000 |
| 7 | 18.752109000 | 9.752623000 | 9.625472000 |
| 15 | 17.094593000 | 9.658974000 | 9.067457000 |
| 7 | 16.157067000 | 9.788681000 | 10.474109000 |
| 6 | 15.230390000 | 8.657058000 | 10.570464000 |
| 1 | 14.299186000 | 8.853839000 | 10.003661000 |
| 1 | 14.951448000 | 8.458562000 | 11.614565000 |
| 6 | 15.968958000 | 7.465741000 | 9.973271000 |
| 1 | 16.585693000 | 6.961775000 | 10.744062000 |
| 1 | 15.257398000 | 6.723606000 | 9.579134000 |
| 7 | 16.778160000 | 8.030239000 | 8.908007000 |
| 6 | 17.471295000 | 7.169887000 | 7.946027000 |
| 1 | 18.026726000 | 7.853493000 | 7.288480000 |
| 6 | 18.469709000 | 6.229079000 | 8.631131000 |
| 1 | 19.207533000 | 6.788740000 | 9.223615000 |
| 1 | 19.014154000 | 5.635559000 | 7.879443000 |
| 1 | 17.953985000 | 5.521555000 | 9.301955000 |
| 6 | 16.481095000 | 6.392685000 | 7.074804000 |
| 1 | 15.919989000 | 5.650238000 | 7.666409000 |
| 1 | 17.019998000 | 5.844889000 | 6.285746000 |
| 1 | 15.765808000 | 7.081904000 | 6.607739000 |
| 6 | 15.683132000 | 11.104087000 | 10.945876000 |
| 1 | 14.945051000 | 11.508059000 | 10.224838000 |
| 6 | 16.840822000 | 12.097403000 | 11.033605000 |
| 1 | 17.609551000 | 11.742857000 | 11.738293000 |
| 1 | 16.463182000 | 13.070699000 | 11.383408000 |
| 1 | 17.302275000 | 12.251123000 | 10.048391000 |
| 6 | 14.997069000 | 10.970651000 | 12.308369000 |
| 1 | 14.072194000 | 10.377646000 | 12.260987000 |
| 1 | 14.727903000 | 11.968221000 | 12.688387000 |
| 1 | 15.677416000 | 10.495196000 | 13.034445000 |
| 7 | 16.529731000 | 14.363254000 | 6.812708000 |
| 6 | 15.923404000 | 15.056861000 | 5.685961000 |
| 1 | 16.052249000 | 16.147117000 | 5.778553000 |
| 1 | 14.841217000 | 14.844696000 | 5.624806000 |
| 6 | 16.648771000 | 14.544476000 | 4.434287000 |
| 1 | 15.955108000 | 14.496910000 | 3.580365000 |
| 1 | 17.472286000 | 15.228173000 | 4.147773000 |
| 7 | 17.134483000 | 13.217218000 | 4.785834000 |
| 6 | 17.778042000 | 12.347025000 | 3.803580000 |
| 1 | 17.932968000 | 11.396330000 | 4.332186000 |
| 6 | 16.859746000 | 12.067178000 | 2.613207000 |
| 1 | 15.879907000 | 11.708995000 | 2.962220000 |
| 1 | 17.304815000 | 11.295266000 | 1.966442000 |

| | | | |
|---|---|---|---|
| 1 | 16.707883000 | 12.967029000 | 1.995157000 |
| 6 | 19.156151000 | 12.852636000 | 3.355651000 |
| 1 | 19.091948000 | 13.844816000 | 2.879281000 |
| 1 | 19.593605000 | 12.159756000 | 2.620033000 |
| 1 | 19.848350000 | 12.921908000 | 4.206024000 |
| 6 | 16.244814000 | 14.756575000 | 8.193153000 |
| 1 | 16.882289000 | 14.110900000 | 8.817801000 |
| 6 | 16.657434000 | 16.210424000 | 8.445993000 |
| 1 | 17.711254000 | 16.378314000 | 8.173263000 |
| 1 | 16.520282000 | 16.466100000 | 9.508283000 |
| 1 | 16.037743000 | 16.909138000 | 7.861397000 |
| 6 | 14.792082000 | 14.501952000 | 8.597736000 |
| 1 | 14.095239000 | 15.095236000 | 7.987027000 |
| 1 | 14.631466000 | 14.778496000 | 9.652462000 |
| 1 | 14.532041000 | 13.444573000 | 8.468164000 |
| 6 | 19.635810000 | 14.585723000 | 6.414280000 |
| 1 | 19.950011000 | 15.145688000 | 7.307961000 |
| 1 | 18.913318000 | 15.189626000 | 5.855948000 |
| 1 | 20.526071000 | 14.418614000 | 5.789959000 |
| 6 | 22.838645000 | 12.182707000 | 9.336170000 |
| 6 | 23.560731000 | 13.248542000 | 8.768828000 |
| 1 | 23.077047000 | 13.856193000 | 8.003279000 |
| 6 | 24.862329000 | 13.519864000 | 9.189372000 |
| 1 | 25.415838000 | 14.350806000 | 8.744717000 |
| 6 | 25.458630000 | 12.729215000 | 10.179351000 |
| 1 | 26.473502000 | 12.952804000 | 10.519475000 |
| 6 | 24.751356000 | 11.657385000 | 10.738077000 |
| 1 | 25.218494000 | 11.034534000 | 11.505183000 |
| 6 | 23.448404000 | 11.383336000 | 10.319176000 |
| 1 | 22.880097000 | 10.557831000 | 10.749640000 |
| 6 | 19.237761000 | 9.054690000 | 10.807391000 |
| 1 | 20.156994000 | 8.495328000 | 10.580482000 |
| 1 | 18.462283000 | 8.359014000 | 11.146377000 |
| 1 | 19.461567000 | 9.764212000 | 11.619306000 |
| 6 | 17.188450000 | 9.075067000 | 4.770199000 |
| 1 | 16.689789000 | 9.647602000 | 3.981924000 |
| 8 | 16.766956000 | 9.466598000 | 6.049563000 |
| 1 | 16.943327000 | 8.017345000 | 4.610771000 |
| 6 | 12.215580000 | 13.375247000 | 6.385540000 |
| 6 | 13.270754000 | 12.526970000 | 6.024370000 |
| 6 | 11.551216000 | 13.186382000 | 7.602368000 |
| 1 | 13.779081000 | 12.678993000 | 5.065639000 |
| 1 | 10.728681000 | 13.845836000 | 7.892571000 |
| 6 | 13.694817000 | 11.481192000 | 6.858973000 |
| 6 | 11.946519000 | 12.140093000 | 8.446433000 |
| 1 | 11.426984000 | 11.975789000 | 9.395341000 |
| 6 | 13.002674000 | 11.304700000 | 8.071946000 |
| 1 | 13.303451000 | 10.493354000 | 8.743795000 |
| 1 | 11.907989000 | 14.184282000 | 5.715907000 |
| 14 | 15.182315000 | 10.324195000 | 6.393239000 |

| | | | |
|---|---|---|---|
| 1 | 14.587133000 | 9.095492000 | 7.006749000 |
| 1 | 14.986183000 | 10.515542000 | 4.910880000 |
| 1 | 15.852907000 | 11.515745000 | 7.937553000 |

**Phenylsilane**

| | | | |
|---|---|---|---|
| 6 | 0.745117000 | 0.001748000 | -1.941465000 |
| 6 | -0.465778000 | -0.020968000 | -1.243514000 |
| 6 | 1.955731000 | 0.022615000 | -1.239218000 |
| 1 | -1.412502000 | -0.039288000 | -1.789454000 |
| 1 | 2.903517000 | 0.040298000 | -1.783429000 |
| 6 | -0.465688000 | -0.023185000 | 0.155082000 |
| 6 | 1.951656000 | 0.020351000 | 0.157543000 |
| 1 | -1.418981000 | -0.044084000 | 0.690339000 |
| 1 | 2.905928000 | 0.035692000 | 0.693043000 |
| 6 | 0.741308000 | -0.002360000 | 0.877894000 |
| 1 | 0.746928000 | 0.002077000 | -3.034594000 |
| 14 | 0.741650000 | 0.001419000 | 2.744891000 |
| 1 | 1.583114000 | -1.101818000 | 3.271493000 |
| 1 | 1.293709000 | 1.274455000 | 3.279893000 |
| 1 | -0.647310000 | -0.166954000 | 3.240270000 |

**$CO_2$**

| | | | |
|---|---|---|---|
| 6 | 0.000000000 | 0.000000000 | 0.000000000 |
| 8 | 0.000000000 | 0.000000000 | 1.159825000 |
| 8 | 0.000000000 | 0.000000000 | -1.159825000 |

**Phenylsilyl formate 13**

| | | | |
|---|---|---|---|
| 6 | 1.063484000 | -0.345407000 | -2.007479000 |
| 6 | -0.254626000 | -0.210432000 | -1.560866000 |
| 6 | 2.118561000 | -0.310485000 | -1.089096000 |
| 1 | -1.080797000 | -0.239398000 | -2.275860000 |
| 1 | 3.149180000 | -0.419011000 | -1.437101000 |
| 6 | -0.519674000 | -0.037323000 | -0.199258000 |
| 6 | 1.851781000 | -0.136528000 | 0.271093000 |
| 1 | -1.552916000 | 0.071294000 | 0.138375000 |
| 1 | 2.688276000 | -0.106163000 | 0.976793000 |
| 6 | 0.529971000 | 0.004335000 | 0.736784000 |
| 1 | 1.270852000 | -0.480738000 | -3.072345000 |
| 14 | 0.226475000 | 0.246992000 | 2.551414000 |
| 1 | 0.586348000 | -0.945852000 | 3.348851000 |
| 1 | 0.937154000 | 1.432378000 | 3.078006000 |
| 8 | -1.454852000 | 0.501439000 | 2.666076000 |
| 6 | -2.046769000 | 0.759076000 | 3.832748000 |

| 1 | -3.129553000 | 0.886166000 | 3.710478000 |
| 8 | -1.471928000 | 0.848468000 | 4.886594000 |

**Bis(phenylsilyl)acetal 22**

| 1 | 17.885475000 | 6.169324000 | 2.622519000 |
| 6 | 14.953271000 | 1.982717000 | 1.834903000 |
| 6 | 14.970357000 | 2.870761000 | 0.753589000 |
| 6 | 14.988295000 | 2.474074000 | 3.142551000 |
| 1 | 14.941049000 | 2.486133000 | -0.269453000 |
| 1 | 14.976455000 | 1.781477000 | 3.987897000 |
| 6 | 15.021979000 | 4.246260000 | 0.984955000 |
| 6 | 15.041555000 | 3.852988000 | 3.369378000 |
| 1 | 15.036367000 | 4.931944000 | 0.132246000 |
| 1 | 15.071877000 | 4.226704000 | 4.397237000 |
| 6 | 15.057751000 | 4.761427000 | 2.296171000 |
| 1 | 14.912237000 | 0.905171000 | 1.654420000 |
| 14 | 15.114719000 | 6.602799000 | 2.573533000 |
| 1 | 13.915120000 | 7.265466000 | 2.016610000 |
| 1 | 15.238918000 | 6.862693000 | 4.029629000 |
| 8 | 16.372431000 | 7.266181000 | 1.715966000 |
| 6 | 17.736108000 | 7.055310000 | 1.997780000 |
| 1 | 18.241446000 | 6.915457000 | 1.037600000 |
| 8 | 18.283830000 | 8.146625000 | 2.678758000 |
| 6 | 15.135444000 | 10.152299000 | 2.457901000 |
| 6 | 16.404654000 | 10.422174000 | 3.005773000 |
| 6 | 13.974686000 | 10.665364000 | 3.040963000 |
| 1 | 12.999906000 | 10.430720000 | 2.604274000 |
| 6 | 16.471698000 | 11.246538000 | 4.144007000 |
| 6 | 14.062274000 | 11.476394000 | 4.178272000 |
| 1 | 17.443968000 | 11.486479000 | 4.584739000 |
| 1 | 13.156260000 | 11.882336000 | 4.636669000 |
| 6 | 15.313801000 | 11.773559000 | 4.725138000 |
| 1 | 15.388566000 | 12.412433000 | 5.609041000 |
| 1 | 15.055857000 | 9.530751000 | 1.563675000 |
| 14 | 17.965832000 | 9.725092000 | 2.259211000 |
| 1 | 17.916408000 | 9.838385000 | 0.777485000 |
| 1 | 19.108022000 | 10.489869000 | 2.810266000 |

**Formaldehyde**

| 8 | -1.593318000 | -0.000007000 | -5.681296000 |
| 6 | -1.593315000 | -0.000001000 | -4.481956000 |
| 1 | -1.593314000 | 0.938745000 | -3.893824000 |
| 1 | -1.593314000 | -0.938737000 | -3.893812000 |

**Phenylsilyl methoxide 30**

| | | | |
|---|---|---|---|
| 6 | -1.743671000 | -0.224870000 | -7.884386000 |
| 6 | -2.912248000 | -0.018189000 | -7.142291000 |
| 6 | -0.510433000 | -0.315390000 | -7.232103000 |
| 1 | -3.877416000 | 0.049676000 | -7.651172000 |
| 1 | 0.402611000 | -0.485293000 | -7.808368000 |
| 6 | -2.842184000 | 0.102767000 | -5.752129000 |
| 6 | -0.446118000 | -0.201434000 | -5.839464000 |
| 1 | -3.764235000 | 0.271262000 | -5.186099000 |
| 1 | 0.520975000 | -0.291603000 | -5.338221000 |
| 6 | -1.609196000 | 0.011455000 | -5.078166000 |
| 1 | -1.796835000 | -0.322898000 | -8.971839000 |
| 14 | -1.537202000 | 0.147754000 | -3.218715000 |
| 1 | -2.038622000 | 1.484186000 | -2.788053000 |
| 1 | -2.373138000 | -0.903541000 | -2.592877000 |
| 8 | -0.003842000 | -0.070633000 | -2.651554000 |
| 6 | 0.973002000 | 0.962759000 | -2.610099000 |
| 1 | 0.556812000 | 1.883848000 | -2.190501000 |
| 1 | 1.793351000 | 0.626874000 | -1.976581000 |
| 1 | 1.362428000 | 1.177927000 | -3.608893000 |

**1,3-Diphenyldisiloxane**

| | | | |
|---|---|---|---|
| 6 | -1.799468000 | 0.164653000 | -7.743935000 |
| 6 | -2.948743000 | 0.122824000 | -6.946136000 |
| 6 | -0.535097000 | 0.113556000 | -7.149209000 |
| 1 | -3.937945000 | 0.166800000 | -7.409690000 |
| 1 | 0.363178000 | 0.149318000 | -7.770860000 |
| 6 | -2.828057000 | 0.026204000 | -5.557818000 |
| 6 | -0.418342000 | 0.017490000 | -5.758542000 |
| 1 | -3.736130000 | -0.006117000 | -4.946814000 |
| 1 | 0.573247000 | -0.023064000 | -5.300773000 |
| 6 | -1.562292000 | -0.029988000 | -4.942708000 |
| 1 | -1.892350000 | 0.240152000 | -8.830684000 |
| 14 | -1.442618000 | -0.155730000 | -3.089017000 |
| 1 | -2.095051000 | 1.017004000 | -2.450975000 |
| 1 | -2.142315000 | -1.374776000 | -2.604321000 |
| 8 | 0.139265000 | -0.227421000 | -2.648743000 |
| 6 | -0.367372000 | 2.141735000 | 0.162437000 |
| 6 | 0.615685000 | 1.958752000 | -0.829494000 |
| 6 | -0.780898000 | 3.422994000 | 0.538400000 |
| 1 | -1.546955000 | 3.549885000 | 1.307939000 |
| 6 | 1.177665000 | 3.099969000 | -1.433200000 |
| 6 | -0.210767000 | 4.545573000 | -0.072743000 |
| 1 | 1.942959000 | 2.982821000 | -2.206441000 |
| 1 | -0.534873000 | 5.547002000 | 0.224431000 |
| 6 | 0.770036000 | 4.383955000 | -1.058601000 |
| 1 | 1.218728000 | 5.258646000 | -1.536937000 |

| 14 | 1.086800000 | 0.248128000 | -1.387825000 |
| 1 | 0.892903000 | -0.698619000 | -0.260332000 |
| 1 | 2.486820000 | 0.206938000 | -1.871900000 |
| 1 | -0.819590000 | 1.271623000 | 0.647655000 |

**32**

| 27 | 14.687845000 | 11.289480000 | 6.938389000 |
| 15 | 14.916409000 | 12.760708000 | 5.414597000 |
| 7 | 16.691334000 | 12.881761000 | 5.390220000 |
| 6 | 17.351341000 | 12.172923000 | 6.343409000 |
| 7 | 18.688437000 | 12.187342000 | 6.408084000 |
| 6 | 19.238495000 | 11.492222000 | 7.414783000 |
| 7 | 18.543744000 | 10.842105000 | 8.358547000 |
| 6 | 17.212989000 | 10.866885000 | 8.237233000 |
| 7 | 16.570337000 | 11.477177000 | 7.209080000 |
| 7 | 16.414852000 | 10.267479000 | 9.159758000 |
| 15 | 14.706651000 | 10.112266000 | 8.696282000 |
| 7 | 13.920446000 | 10.381271000 | 10.148436000 |
| 6 | 13.264116000 | 9.198986000 | 10.696871000 |
| 1 | 12.186308000 | 9.192403000 | 10.451782000 |
| 1 | 13.366468000 | 9.161122000 | 11.794292000 |
| 6 | 13.953609000 | 7.994811000 | 10.044660000 |
| 1 | 14.808569000 | 7.646137000 | 10.656166000 |
| 1 | 13.251418000 | 7.152559000 | 9.953271000 |
| 7 | 14.364894000 | 8.475144000 | 8.732495000 |
| 6 | 14.863641000 | 7.583391000 | 7.684750000 |
| 1 | 14.930755000 | 8.220124000 | 6.790923000 |
| 6 | 16.267124000 | 7.033687000 | 7.974291000 |
| 1 | 17.004107000 | 7.847949000 | 8.039247000 |
| 1 | 16.584849000 | 6.352234000 | 7.169827000 |
| 1 | 16.293111000 | 6.467111000 | 8.919969000 |
| 6 | 13.860569000 | 6.476258000 | 7.367497000 |
| 1 | 13.769249000 | 5.754685000 | 8.196085000 |
| 1 | 14.186899000 | 5.920965000 | 6.475323000 |
| 1 | 12.871297000 | 6.908300000 | 7.154741000 |
| 6 | 13.518573000 | 11.727322000 | 10.562932000 |
| 1 | 14.067140000 | 12.414122000 | 9.895542000 |
| 6 | 13.955855000 | 12.011034000 | 12.003501000 |
| 1 | 13.453947000 | 11.330580000 | 12.710693000 |
| 1 | 13.692119000 | 13.040211000 | 12.295035000 |
| 1 | 15.043145000 | 11.880306000 | 12.117264000 |
| 6 | 12.022263000 | 11.985470000 | 10.362256000 |
| 1 | 11.724349000 | 11.752500000 | 9.329626000 |
| 1 | 11.783085000 | 13.040058000 | 10.572162000 |
| 1 | 11.413307000 | 11.368857000 | 11.042714000 |
| 7 | 14.420804000 | 14.357566000 | 5.605995000 |
| 6 | 13.729469000 | 14.911645000 | 4.446877000 |
| 1 | 14.009918000 | 15.965843000 | 4.284142000 |

| | | | |
|---|---|---|---|
| 1 | 12.632693000 | 14.867300000 | 4.576321000 |
| 6 | 14.148012000 | 14.049108000 | 3.252869000 |
| 1 | 13.332600000 | 13.980443000 | 2.516923000 |
| 1 | 15.018355000 | 14.490092000 | 2.729705000 |
| 7 | 14.447561000 | 12.739375000 | 3.814223000 |
| 6 | 14.527493000 | 11.548128000 | 2.970118000 |
| 1 | 14.799693000 | 10.729189000 | 3.651119000 |
| 6 | 13.165724000 | 11.207680000 | 2.358998000 |
| 1 | 12.400470000 | 11.146884000 | 3.145025000 |
| 1 | 13.206874000 | 10.232783000 | 1.849853000 |
| 1 | 12.857989000 | 11.962964000 | 1.617298000 |
| 6 | 15.623569000 | 11.663442000 | 1.906595000 |
| 1 | 15.402913000 | 12.472610000 | 1.190525000 |
| 1 | 15.704224000 | 10.727179000 | 1.332613000 |
| 1 | 16.599682000 | 11.873375000 | 2.370224000 |
| 6 | 14.127448000 | 14.874977000 | 6.946976000 |
| 1 | 14.743740000 | 14.269215000 | 7.632973000 |
| 6 | 14.562530000 | 16.335942000 | 7.079266000 |
| 1 | 15.629533000 | 16.453458000 | 6.832530000 |
| 1 | 14.394651000 | 16.694800000 | 8.106956000 |
| 1 | 13.983134000 | 16.988851000 | 6.406376000 |
| 6 | 12.660998000 | 14.676418000 | 7.348886000 |
| 1 | 11.986444000 | 15.289910000 | 6.731114000 |
| 1 | 12.505607000 | 14.970609000 | 8.399187000 |
| 1 | 12.372869000 | 13.621346000 | 7.233589000 |
| 6 | 17.450346000 | 13.745365000 | 4.500528000 |
| 1 | 18.099572000 | 14.425362000 | 5.072898000 |
| 1 | 16.754978000 | 14.344228000 | 3.902788000 |
| 1 | 18.089782000 | 13.156037000 | 3.824045000 |
| 6 | 20.718047000 | 11.424942000 | 7.491217000 |
| 6 | 21.514617000 | 12.106315000 | 6.553662000 |
| 1 | 21.020439000 | 12.687907000 | 5.774801000 |
| 6 | 22.906325000 | 12.030233000 | 6.625646000 |
| 1 | 23.519710000 | 12.562743000 | 5.894608000 |
| 6 | 23.518274000 | 11.272305000 | 7.631912000 |
| 1 | 24.608510000 | 11.212288000 | 7.687302000 |
| 6 | 22.732438000 | 10.587766000 | 8.566858000 |
| 1 | 23.209233000 | 9.992689000 | 9.350057000 |
| 6 | 21.341250000 | 10.664849000 | 8.498881000 |
| 1 | 20.712917000 | 10.137433000 | 9.216856000 |
| 6 | 16.984802000 | 9.722788000 | 10.380250000 |
| 1 | 17.390416000 | 8.707431000 | 10.236313000 |
| 1 | 16.194073000 | 9.689117000 | 11.141032000 |
| 1 | 17.799213000 | 10.367644000 | 10.738093000 |
| 14 | 12.567279000 | 10.707986000 | 6.408191000 |
| 1 | 11.622836000 | 10.261218000 | 7.501415000 |
| 1 | 11.680350000 | 11.721822000 | 5.717364000 |
| 6 | 11.161705000 | 7.622522000 | 3.898056000 |
| 6 | 12.329096000 | 7.065073000 | 3.362420000 |
| 6 | 11.243872000 | 8.683012000 | 4.806807000 |

| | | | |
|---|---|---|---|
| 1 | 12.267062000 | 6.235400000 | 2.652711000 |
| 1 | 10.321573000 | 9.107321000 | 5.217363000 |
| 6 | 13.572136000 | 7.578222000 | 3.744686000 |
| 6 | 12.483086000 | 9.223143000 | 5.202750000 |
| 1 | 14.490647000 | 7.148981000 | 3.333298000 |
| 6 | 13.638757000 | 8.642505000 | 4.650435000 |
| 1 | 14.616745000 | 9.039229000 | 4.937040000 |
| 1 | 10.186196000 | 7.226007000 | 3.599724000 |

**Formic acid**

| | | | |
|---|---|---|---|
| 6 | 14.675169000 | 14.102712000 | 5.627989000 |
| 8 | 14.667001000 | 14.091344000 | 4.431250000 |
| 8 | 14.890123000 | 12.990689000 | 6.349372000 |
| 1 | 14.506352000 | 15.004135000 | 6.236860000 |
| 1 | 14.853014000 | 13.191622000 | 7.295893000 |

**33**

| | | | |
|---|---|---|---|
| 27 | 14.777295000 | 11.426499000 | 7.269842000 |
| 1 | 16.133426000 | 12.793341000 | 9.608766000 |
| 15 | 15.034511000 | 12.725096000 | 5.528838000 |
| 7 | 16.760092000 | 13.084604000 | 5.717871000 |
| 6 | 17.464632000 | 12.371655000 | 6.633018000 |
| 7 | 18.796199000 | 12.484461000 | 6.716507000 |
| 6 | 19.392848000 | 11.737733000 | 7.656776000 |
| 7 | 18.755373000 | 10.880861000 | 8.468176000 |
| 6 | 17.428953000 | 10.813426000 | 8.320895000 |
| 7 | 16.746590000 | 11.555943000 | 7.428654000 |
| 7 | 16.686086000 | 9.971759000 | 9.087006000 |
| 15 | 14.981635000 | 9.801178000 | 8.683641000 |
| 7 | 14.269819000 | 9.552226000 | 10.163719000 |
| 6 | 13.603153000 | 8.260072000 | 10.280946000 |
| 1 | 12.517182000 | 8.354601000 | 10.115843000 |
| 1 | 13.756494000 | 7.838586000 | 11.285681000 |
| 6 | 14.237135000 | 7.348011000 | 9.223244000 |
| 1 | 15.026013000 | 6.719900000 | 9.675900000 |
| 1 | 13.483889000 | 6.670190000 | 8.790914000 |
| 7 | 14.782658000 | 8.228912000 | 8.201865000 |
| 6 | 15.358261000 | 7.684774000 | 6.970157000 |
| 1 | 15.886650000 | 8.521418000 | 6.486813000 |
| 6 | 16.389462000 | 6.591075000 | 7.263582000 |
| 1 | 17.157441000 | 6.951742000 | 7.964565000 |
| 1 | 16.890843000 | 6.277301000 | 6.335136000 |
| 1 | 15.914477000 | 5.698612000 | 7.702533000 |
| 6 | 14.261161000 | 7.213296000 | 6.013222000 |
| 1 | 13.625396000 | 6.448255000 | 6.487196000 |
| 1 | 14.695774000 | 6.772969000 | 5.102253000 |

| | | | |
|---|---|---|---|
| 1 | 13.622086000 | 8.057817000 | 5.721457000 |
| 6 | 13.953172000 | 10.646374000 | 11.095166000 |
| 1 | 14.696549000 | 11.432105000 | 10.892965000 |
| 6 | 14.147517000 | 10.196711000 | 12.545683000 |
| 1 | 13.386808000 | 9.458867000 | 12.845443000 |
| 1 | 14.044872000 | 11.062617000 | 13.217126000 |
| 1 | 15.142157000 | 9.748139000 | 12.697124000 |
| 6 | 12.559995000 | 11.241141000 | 10.872011000 |
| 1 | 12.468127000 | 11.664359000 | 9.863909000 |
| 1 | 12.377755000 | 12.054941000 | 11.589669000 |
| 1 | 11.772431000 | 10.484064000 | 11.015225000 |
| 7 | 14.388752000 | 14.216503000 | 5.208774000 |
| 6 | 13.975405000 | 14.425326000 | 3.824733000 |
| 1 | 14.391342000 | 15.365326000 | 3.429092000 |
| 1 | 12.877386000 | 14.497383000 | 3.745612000 |
| 6 | 14.506129000 | 13.228049000 | 3.015203000 |
| 1 | 13.740302000 | 12.878509000 | 2.308414000 |
| 1 | 15.396942000 | 13.516655000 | 2.427111000 |
| 7 | 14.818860000 | 12.174614000 | 3.977131000 |
| 6 | 15.280561000 | 10.856847000 | 3.518829000 |
| 1 | 15.149436000 | 10.187196000 | 4.383562000 |
| 6 | 14.406193000 | 10.318865000 | 2.386875000 |
| 1 | 13.343552000 | 10.337632000 | 2.664884000 |
| 1 | 14.689739000 | 9.277807000 | 2.168269000 |
| 1 | 14.542675000 | 10.898472000 | 1.459722000 |
| 6 | 16.765815000 | 10.856064000 | 3.128115000 |
| 1 | 16.969771000 | 11.598285000 | 2.339396000 |
| 1 | 17.061736000 | 9.869156000 | 2.738607000 |
| 1 | 17.409270000 | 11.087365000 | 3.989332000 |
| 6 | 14.128362000 | 15.226640000 | 6.249088000 |
| 1 | 14.694740000 | 14.898667000 | 7.131701000 |
| 6 | 14.644651000 | 16.606522000 | 5.831939000 |
| 1 | 15.694258000 | 16.563621000 | 5.500176000 |
| 1 | 14.581796000 | 17.295640000 | 6.687528000 |
| 1 | 14.042805000 | 17.039726000 | 5.016457000 |
| 6 | 12.652203000 | 15.270496000 | 6.650155000 |
| 1 | 12.010279000 | 15.563255000 | 5.802746000 |
| 1 | 12.497854000 | 16.004431000 | 7.455667000 |
| 1 | 12.326945000 | 14.291808000 | 7.027353000 |
| 6 | 17.468871000 | 13.995830000 | 4.829582000 |
| 1 | 18.103986000 | 14.677612000 | 5.412348000 |
| 1 | 16.733413000 | 14.588441000 | 4.275644000 |
| 1 | 18.106947000 | 13.449127000 | 4.118285000 |
| 6 | 20.860658000 | 11.867957000 | 7.816810000 |
| 6 | 21.593831000 | 12.727529000 | 6.979637000 |
| 1 | 21.062737000 | 13.281187000 | 6.204953000 |
| 6 | 22.970927000 | 12.869055000 | 7.151463000 |
| 1 | 23.535319000 | 13.540228000 | 6.499538000 |
| 6 | 23.629368000 | 12.155158000 | 8.160198000 |
| 1 | 24.705950000 | 12.279310000 | 8.304645000 |

| | | | |
|---|---|---|---|
| 6 | 22.907684000 | 11.289463000 | 8.990871000 |
| 1 | 23.422413000 | 10.728625000 | 9.774941000 |
| 6 | 21.531088000 | 11.144316000 | 8.819660000 |
| 1 | 20.951908000 | 10.479990000 | 9.461335000 |
| 6 | 17.350513000 | 9.111126000 | 10.055174000 |
| 1 | 18.028357000 | 8.402087000 | 9.555098000 |
| 1 | 16.584465000 | 8.560516000 | 10.613161000 |
| 1 | 17.940216000 | 9.713509000 | 10.761011000 |
| 1 | 14.838039000 | 10.340455000 | 6.297270000 |
| 14 | 12.572863000 | 11.124424000 | 7.039866000 |
| 1 | 11.810784000 | 12.212519000 | 7.709223000 |
| 6 | 10.950574000 | 12.031601000 | 3.319190000 |
| 6 | 10.564974000 | 10.790895000 | 2.798483000 |
| 6 | 11.549420000 | 12.101891000 | 4.578359000 |
| 1 | 10.085991000 | 10.730235000 | 1.817890000 |
| 1 | 11.821319000 | 13.075206000 | 4.989126000 |
| 6 | 10.778957000 | 9.629956000 | 3.547713000 |
| 6 | 11.786772000 | 10.945915000 | 5.342165000 |
| 1 | 10.460758000 | 8.660897000 | 3.152877000 |
| 6 | 11.388052000 | 9.710570000 | 4.804969000 |
| 1 | 11.535163000 | 8.795319000 | 5.383482000 |
| 1 | 10.769540000 | 12.945743000 | 2.747156000 |
| 6 | 15.240075000 | 13.417916000 | 9.401771000 |
| 8 | 15.086094000 | 14.450771000 | 10.049700000 |
| 8 | 14.451370000 | 12.982426000 | 8.494042000 |
| 8 | 12.042803000 | 9.663103000 | 7.831038000 |
| 6 | 10.793358000 | 9.407968000 | 8.180080000 |
| 8 | 9.846646000 | 10.143132000 | 8.048951000 |
| 1 | 10.706082000 | 8.406760000 | 8.628771000 |

**34**

| | | | |
|---|---|---|---|
| 27 | 14.745082000 | 11.614760000 | 7.602021000 |
| 1 | 14.902827000 | 14.151740000 | 8.604748000 |
| 15 | 14.984266000 | 12.356254000 | 5.673987000 |
| 7 | 16.764391000 | 12.612510000 | 5.646726000 |
| 6 | 17.436043000 | 12.313974000 | 6.783304000 |
| 7 | 18.764859000 | 12.464589000 | 6.882943000 |
| 6 | 19.312603000 | 12.079923000 | 8.044576000 |
| 7 | 18.663687000 | 11.415213000 | 9.012573000 |
| 6 | 17.350591000 | 11.238208000 | 8.814452000 |
| 7 | 16.682450000 | 11.838023000 | 7.800824000 |
| 7 | 16.616730000 | 10.373286000 | 9.552031000 |
| 15 | 15.198514000 | 9.727554000 | 8.618243000 |
| 7 | 14.317348000 | 8.896309000 | 9.760057000 |
| 6 | 14.436047000 | 7.443095000 | 9.655466000 |
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| 6 | 13.227811000 | 9.292335000 | 11.951831000 |
| 1 | 13.113325000 | 8.228545000 | 12.220984000 |
| 1 | 12.417386000 | 9.849238000 | 12.445496000 |
| 1 | 14.184212000 | 9.654943000 | 12.359112000 |
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| 1 | 15.249816000 | 12.243589000 | 2.441256000 |
| 7 | 14.603357000 | 11.466290000 | 4.314840000 |
| 6 | 14.543350000 | 10.007850000 | 4.294268000 |
| 1 | 14.884512000 | 9.689978000 | 5.291068000 |
| 6 | 13.106361000 | 9.502554000 | 4.126846000 |
| 1 | 12.477212000 | 9.873867000 | 4.947545000 |
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| 1 | 14.497336000 | 14.842471000 | 6.695396000 |
| 6 | 15.656979000 | 15.930243000 | 5.262201000 |
| 1 | 16.590718000 | 15.423366000 | 5.545507000 |
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| 1 | 15.693888000 | 16.145507000 | 4.181136000 |
| 6 | 13.123449000 | 15.813186000 | 5.386066000 |
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| 6 | 23.458129000 | 12.969088000 | 8.689366000 |
| 1 | 24.509140000 | 13.213410000 | 8.865940000 |
| 6 | 22.768851000 | 12.148759000 | 9.590629000 |
| 1 | 23.286063000 | 11.738271000 | 10.461591000 |
| 6 | 21.421751000 | 11.853753000 | 9.378758000 |
| 1 | 20.866137000 | 11.221314000 | 10.072261000 |
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| 1 | 17.646344000 | 10.519296000 | 11.375777000 |
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| 14 | 11.510639000 | 12.936265000 | 8.398323000 |
| 1 | 11.578258000 | 11.534599000 | 8.785226000 |
| 6 | 9.229329000 | 14.573159000 | 5.333057000 |
| 6 | 9.651476000 | 13.853117000 | 4.210476000 |
| 6 | 9.758096000 | 14.276877000 | 6.593043000 |
| 1 | 9.236410000 | 14.088458000 | 3.226578000 |
| 1 | 9.417575000 | 14.843854000 | 7.462334000 |
| 6 | 10.600958000 | 12.834469000 | 4.353619000 |
| 6 | 10.728577000 | 13.268569000 | 6.750344000 |
| 1 | 10.927777000 | 12.260121000 | 3.483335000 |
| 6 | 11.141473000 | 12.552674000 | 5.610956000 |
| 1 | 11.911240000 | 11.786183000 | 5.712990000 |
| 1 | 8.484876000 | 15.366428000 | 5.225217000 |
| 6 | 14.162357000 | 13.370121000 | 8.777163000 |
| 8 | 14.358698000 | 12.436626000 | 9.580352000 |
| 8 | 12.893809000 | 13.839462000 | 8.518543000 |
| 8 | 10.431505000 | 13.690403000 | 9.491962000 |
| 6 | 10.471180000 | 13.451569000 | 10.801428000 |
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| 1 | 9.697026000 | 14.021959000 | 11.331367000 |

**10**

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| 1 | 14.399426000 | 12.458634000 | 8.344755000 |
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| 6 | 17.394646000 | 12.565299000 | 6.812843000 |

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| 6 | 19.348568000 | 11.981799000 | 7.818010000 |
| 7 | 18.752459000 | 11.060201000 | 8.588087000 |
| 6 | 17.428022000 | 10.942328000 | 8.437896000 |
| 7 | 16.712438000 | 11.690217000 | 7.576796000 |
| 7 | 16.718605000 | 10.032753000 | 9.156530000 |
| 15 | 15.013810000 | 9.868093000 | 8.755508000 |
| 7 | 14.284783000 | 9.715739000 | 10.249801000 |
| 6 | 13.498758000 | 8.496230000 | 10.385025000 |
| 1 | 12.446271000 | 8.657730000 | 10.090080000 |
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| 6 | 14.165856000 | 7.476653000 | 9.454095000 |
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| 7 | 14.784413000 | 8.258853000 | 8.395273000 |
| 6 | 15.341725000 | 7.615371000 | 7.203925000 |
| 1 | 16.004575000 | 8.361847000 | 6.739143000 |
| 6 | 16.193243000 | 6.395699000 | 7.572254000 |
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| 1 | 15.577141000 | 5.586807000 | 7.997895000 |
| 6 | 14.251835000 | 7.275115000 | 6.184785000 |
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| 1 | 14.679261000 | 6.756641000 | 5.311353000 |
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| 6 | 14.087818000 | 10.861900000 | 11.140533000 |
| 1 | 14.777256000 | 11.638866000 | 10.771989000 |
| 6 | 14.495430000 | 10.508472000 | 12.575561000 |
| 1 | 13.812643000 | 9.763067000 | 13.014783000 |
| 1 | 14.457578000 | 11.403770000 | 13.215652000 |
| 1 | 15.515628000 | 10.094387000 | 12.605490000 |
| 6 | 12.668255000 | 11.433945000 | 11.081630000 |
| 1 | 12.404883000 | 11.730674000 | 10.056641000 |
| 1 | 12.587341000 | 12.321527000 | 11.728433000 |
| 1 | 11.928265000 | 10.697951000 | 11.436090000 |
| 7 | 14.193650000 | 14.254204000 | 5.522740000 |
| 6 | 13.766899000 | 14.561325000 | 4.165004000 |
| 1 | 14.130425000 | 15.552209000 | 3.846132000 |
| 1 | 12.665393000 | 14.581526000 | 4.089234000 |
| 6 | 14.354824000 | 13.463082000 | 3.256567000 |
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| 6 | 15.268543000 | 11.112239000 | 3.560774000 |
| 1 | 15.212676000 | 10.385880000 | 4.386581000 |
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| 1 | 13.338972000 | 10.504566000 | 2.748624000 |
| 1 | 14.736918000 | 9.582548000 | 2.130942000 |
| 1 | 14.439901000 | 11.226019000 | 1.533528000 |
| 6 | 16.736582000 | 11.232061000 | 3.124104000 |

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| 1 | 17.087257000 | 10.286178000 | 2.681043000 |
| 1 | 17.387263000 | 11.467121000 | 3.979181000 |
| 6 | 13.911585000 | 15.149933000 | 6.646969000 |
| 1 | 14.486651000 | 14.742265000 | 7.493609000 |
| 6 | 14.412508000 | 16.572556000 | 6.373880000 |
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| 1 | 14.331574000 | 17.183548000 | 7.286138000 |
| 1 | 13.815896000 | 17.069803000 | 5.591913000 |
| 6 | 12.432752000 | 15.132763000 | 7.047194000 |
| 1 | 11.790385000 | 15.486947000 | 6.224087000 |
| 1 | 12.259291000 | 15.796066000 | 7.909275000 |
| 1 | 12.120272000 | 14.116916000 | 7.327409000 |
| 6 | 17.300349000 | 14.240632000 | 5.059473000 |
| 1 | 17.917192000 | 14.924009000 | 5.660732000 |
| 1 | 16.526611000 | 14.824540000 | 4.549057000 |
| 1 | 17.948429000 | 13.764694000 | 4.306782000 |
| 6 | 20.812777000 | 12.165251000 | 7.979601000 |
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| 6 | 22.870979000 | 13.313186000 | 7.387537000 |
| 1 | 23.397171000 | 14.064366000 | 6.793168000 |
| 6 | 23.574114000 | 12.538917000 | 8.318311000 |
| 1 | 24.646674000 | 12.695535000 | 8.461770000 |
| 6 | 22.900225000 | 11.570843000 | 9.072578000 |
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| 6 | 21.528106000 | 11.383375000 | 8.903983000 |
| 1 | 20.985674000 | 10.638113000 | 9.486401000 |
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| 1 | 18.095682000 | 8.471266000 | 9.534023000 |
| 1 | 16.650132000 | 8.533907000 | 10.595719000 |
| 1 | 17.980792000 | 9.705989000 | 10.816201000 |
| 1 | 15.000115000 | 10.303068000 | 6.312885000 |
| 14 | 12.603781000 | 10.964631000 | 7.186714000 |
| 1 | 12.202645000 | 9.662845000 | 7.823026000 |
| 1 | 11.708949000 | 11.947595000 | 7.888632000 |
| 6 | 10.865362000 | 11.965055000 | 3.512307000 |
| 6 | 10.498336000 | 10.732510000 | 2.958799000 |
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| 6 | 10.762309000 | 9.555270000 | 3.665529000 |
| 6 | 11.777598000 | 10.839441000 | 5.486636000 |
| 1 | 10.462401000 | 8.590317000 | 3.245815000 |
| 6 | 11.397180000 | 9.613119000 | 4.912444000 |
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| 1 | 10.652170000 | 12.892455000 | 2.972581000 |

**10'**

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| 6 | 17.453893000 | 12.630762000 | 6.795523000 |
| 7 | 18.790501000 | 12.662593000 | 6.885869000 |
| 6 | 19.326883000 | 11.994079000 | 7.917840000 |
| 7 | 18.629254000 | 11.301241000 | 8.828689000 |
| 6 | 17.302007000 | 11.295275000 | 8.672749000 |
| 7 | 16.679975000 | 11.956542000 | 7.670095000 |
| 7 | 16.489351000 | 10.601142000 | 9.504365000 |
| 15 | 14.828311000 | 10.371492000 | 8.899806000 |
| 7 | 13.917606000 | 10.009954000 | 10.241348000 |
| 6 | 13.596648000 | 8.588300000 | 10.378844000 |
| 1 | 12.552515000 | 8.397351000 | 10.075286000 |
| 1 | 13.716547000 | 8.251072000 | 11.421546000 |
| 6 | 14.557310000 | 7.838846000 | 9.453101000 |
| 1 | 15.471018000 | 7.536677000 | 9.999428000 |
| 1 | 14.090467000 | 6.920192000 | 9.064528000 |
| 7 | 14.843570000 | 8.774612000 | 8.374180000 |
| 6 | 15.667657000 | 8.357623000 | 7.234748000 |
| 1 | 15.903771000 | 9.285845000 | 6.693155000 |
| 6 | 16.996148000 | 7.709935000 | 7.645508000 |
| 1 | 17.590185000 | 8.385225000 | 8.278325000 |
| 1 | 17.593176000 | 7.477227000 | 6.749990000 |
| 1 | 16.843188000 | 6.766051000 | 8.194077000 |
| 6 | 14.855575000 | 7.476797000 | 6.282596000 |
| 1 | 14.510778000 | 6.555317000 | 6.780431000 |
| 1 | 15.462253000 | 7.180623000 | 5.411967000 |
| 1 | 13.971030000 | 8.024336000 | 5.922484000 |
| 6 | 13.122631000 | 11.013244000 | 10.963174000 |
| 1 | 13.366904000 | 11.974983000 | 10.499304000 |
| 6 | 13.529224000 | 11.096871000 | 12.435420000 |
| 1 | 13.352183000 | 10.141892000 | 12.958439000 |
| 1 | 12.943194000 | 11.872625000 | 12.951680000 |
| 1 | 14.595186000 | 11.355046000 | 12.527675000 |
| 6 | 11.617898000 | 10.804131000 | 10.787137000 |
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| 1 | 11.259055000 | 9.903495000 | 11.311163000 |
| 7 | 14.516358000 | 14.612702000 | 5.230631000 |
| 6 | 13.948410000 | 14.649047000 | 3.888599000 |
| 1 | 14.251402000 | 15.564762000 | 3.355672000 |
| 1 | 12.843523000 | 14.629730000 | 3.921270000 |
| 6 | 14.485774000 | 13.407361000 | 3.180882000 |
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| 7 | 14.671823000 | 12.419309000 | 4.235285000 |

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| 1 | 15.092399000 | 10.506992000 | 4.832865000 |
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| 1 | 12.891047000 | 10.476850000 | 3.745799000 |
| 1 | 14.004556000 | 9.319858000 | 2.960234000 |
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| 6 | 16.308856000 | 10.905093000 | 3.115994000 |
| 1 | 16.291014000 | 11.449400000 | 2.157553000 |
| 1 | 16.522074000 | 9.847735000 | 2.892702000 |
| 1 | 17.140424000 | 11.300113000 | 3.719345000 |
| 6 | 14.205156000 | 15.694202000 | 6.170378000 |
| 1 | 14.701624000 | 15.419888000 | 7.110354000 |
| 6 | 14.806588000 | 17.026315000 | 5.709808000 |
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| 1 | 14.305018000 | 17.408928000 | 4.805553000 |
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| 1 | 12.157556000 | 16.207981000 | 5.574659000 |
| 1 | 12.520063000 | 16.493209000 | 7.292535000 |
| 1 | 12.282241000 | 14.833817000 | 6.713426000 |
| 6 | 17.554444000 | 14.073390000 | 4.846545000 |
| 1 | 18.261468000 | 14.730868000 | 5.372342000 |
| 1 | 16.854140000 | 14.693376000 | 4.275909000 |
| 1 | 18.126941000 | 13.434991000 | 4.154691000 |
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| 6 | 21.604514000 | 12.742451000 | 7.176128000 |
| 1 | 21.116835000 | 13.309032000 | 6.382275000 |
| 6 | 22.992644000 | 12.748080000 | 7.321331000 |
| 1 | 23.609606000 | 13.330487000 | 6.632756000 |
| 6 | 23.595118000 | 12.010855000 | 8.348259000 |
| 1 | 24.682002000 | 12.020643000 | 8.465644000 |
| 6 | 22.804602000 | 11.261297000 | 9.227624000 |
| 1 | 23.274371000 | 10.680202000 | 10.025353000 |
| 6 | 21.416837000 | 11.258213000 | 9.087286000 |
| 1 | 20.783964000 | 10.684344000 | 9.764352000 |
| 6 | 17.033363000 | 9.952091000 | 10.685721000 |
| 1 | 17.588035000 | 9.031689000 | 10.439481000 |
| 1 | 16.201370000 | 9.701174000 | 11.354979000 |
| 1 | 17.718342000 | 10.634805000 | 11.207567000 |
| 1 | 14.592802000 | 10.863299000 | 6.545889000 |
| 14 | 14.773380000 | 13.637969000 | 9.109234000 |
| 1 | 15.432224000 | 13.198723000 | 10.395058000 |
| 1 | 15.665090000 | 14.810236000 | 8.781801000 |
| 6 | 12.040736000 | 16.080449000 | 11.159570000 |
| 6 | 10.790995000 | 15.594686000 | 10.755057000 |
| 6 | 13.210083000 | 15.510872000 | 10.645695000 |
| 1 | 9.875611000 | 16.035846000 | 11.159972000 |
| 1 | 14.178689000 | 15.897970000 | 10.978292000 |
| 6 | 10.725590000 | 14.543474000 | 9.834825000 |
| 6 | 13.168270000 | 14.447830000 | 9.723227000 |

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| 1 | 11.845691000 | 13.157103000 | 8.613338000 |
| 1 | 12.103198000 | 16.901346000 | 11.879776000 |

**12**

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| 7 | 16.602405000 | 13.202828000 | 5.907063000 |
| 6 | 17.315366000 | 12.538548000 | 6.847979000 |
| 7 | 18.630456000 | 12.745575000 | 6.999064000 |
| 6 | 19.224283000 | 12.053827000 | 7.981376000 |
| 7 | 18.595005000 | 11.204357000 | 8.804984000 |
| 6 | 17.283992000 | 11.041483000 | 8.589557000 |
| 7 | 16.614255000 | 11.674345000 | 7.607307000 |
| 7 | 16.541706000 | 10.212020000 | 9.366124000 |
| 15 | 14.856309000 | 9.965541000 | 8.880849000 |
| 7 | 14.027157000 | 10.018833000 | 10.316234000 |
| 6 | 13.506776000 | 8.731277000 | 10.764426000 |
| 1 | 12.417956000 | 8.668195000 | 10.590383000 |
| 1 | 13.685717000 | 8.581205000 | 11.842423000 |
| 6 | 14.241243000 | 7.659243000 | 9.943025000 |
| 1 | 15.108581000 | 7.254190000 | 10.498915000 |
| 1 | 13.568352000 | 6.815515000 | 9.730408000 |
| 7 | 14.644264000 | 8.321196000 | 8.707757000 |
| 6 | 15.184995000 | 7.578471000 | 7.564798000 |
| 1 | 15.197431000 | 8.309721000 | 6.741544000 |
| 6 | 16.625729000 | 7.099553000 | 7.793987000 |
| 1 | 17.299235000 | 7.950730000 | 7.972278000 |
| 1 | 16.995406000 | 6.556415000 | 6.909842000 |
| 1 | 16.695534000 | 6.416387000 | 8.656872000 |
| 6 | 14.265405000 | 6.432898000 | 7.139325000 |
| 1 | 14.224159000 | 5.630120000 | 7.893805000 |
| 1 | 14.644015000 | 5.984971000 | 6.207364000 |
| 1 | 13.243497000 | 6.799831000 | 6.958230000 |
| 6 | 13.740807000 | 11.273803000 | 11.023463000 |
| 1 | 13.919881000 | 12.069728000 | 10.282548000 |
| 6 | 14.702581000 | 11.490050000 | 12.198812000 |
| 1 | 14.644828000 | 10.656915000 | 12.919647000 |
| 1 | 14.451614000 | 12.415975000 | 12.740185000 |
| 1 | 15.741360000 | 11.572521000 | 11.846213000 |
| 6 | 12.278099000 | 11.363683000 | 11.458562000 |
| 1 | 11.602175000 | 11.252383000 | 10.600611000 |
| 1 | 12.086494000 | 12.346354000 | 11.916409000 |
| 1 | 12.030589000 | 10.599285000 | 12.213451000 |
| 7 | 14.150556000 | 14.271515000 | 5.664738000 |
| 6 | 13.720985000 | 14.700009000 | 4.341614000 |

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| 1 | 14.115988000 | 15.699926000 | 4.097438000 |
| 1 | 12.620801000 | 14.760878000 | 4.282957000 |
| 6 | 14.261173000 | 13.658134000 | 3.341326000 |
| 1 | 13.479697000 | 13.400503000 | 2.612741000 |
| 1 | 15.120474000 | 14.064525000 | 2.774639000 |
| 7 | 14.637526000 | 12.482076000 | 4.117898000 |
| 6 | 15.044554000 | 11.231503000 | 3.460123000 |
| 1 | 14.802799000 | 10.431926000 | 4.177348000 |
| 6 | 14.241034000 | 10.975907000 | 2.185493000 |
| 1 | 13.162155000 | 11.041246000 | 2.372356000 |
| 1 | 14.460926000 | 9.963373000 | 1.813862000 |
| 1 | 14.505450000 | 11.684913000 | 1.384162000 |
| 6 | 16.552999000 | 11.179002000 | 3.183695000 |
| 1 | 16.869283000 | 12.027096000 | 2.554109000 |
| 1 | 16.817960000 | 10.251251000 | 2.652315000 |
| 1 | 17.128605000 | 11.210341000 | 4.120059000 |
| 6 | 13.907417000 | 15.080516000 | 6.862439000 |
| 1 | 14.515287000 | 14.617462000 | 7.655416000 |
| 6 | 14.397107000 | 16.519974000 | 6.675818000 |
| 1 | 15.441306000 | 16.540040000 | 6.325034000 |
| 1 | 14.341062000 | 17.065250000 | 7.630469000 |
| 1 | 13.779656000 | 17.069975000 | 5.947293000 |
| 6 | 12.445447000 | 15.022450000 | 7.317835000 |
| 1 | 11.767369000 | 15.402892000 | 6.536198000 |
| 1 | 12.297107000 | 15.645004000 | 8.214122000 |
| 1 | 12.156113000 | 13.991837000 | 7.569233000 |
| 6 | 17.267255000 | 14.180289000 | 5.060956000 |
| 1 | 17.882089000 | 14.859060000 | 5.668903000 |
| 1 | 16.508840000 | 14.771642000 | 4.536698000 |
| 1 | 17.921178000 | 13.694024000 | 4.319840000 |
| 6 | 20.684573000 | 12.238082000 | 8.171983000 |
| 6 | 21.404446000 | 13.120068000 | 7.346805000 |
| 1 | 20.867871000 | 13.659003000 | 6.565384000 |
| 6 | 22.774998000 | 13.300258000 | 7.536082000 |
| 1 | 23.327926000 | 13.988875000 | 6.892298000 |
| 6 | 23.442224000 | 12.599929000 | 8.548479000 |
| 1 | 24.513673000 | 12.751802000 | 8.704759000 |
| 6 | 22.734492000 | 11.710844000 | 9.366265000 |
| 1 | 23.255877000 | 11.156855000 | 10.150980000 |
| 6 | 21.364027000 | 11.529436000 | 9.178990000 |
| 1 | 20.796330000 | 10.842994000 | 9.807663000 |
| 6 | 17.158180000 | 9.525665000 | 10.491584000 |
| 1 | 17.767594000 | 8.668542000 | 10.164778000 |
| 1 | 16.366390000 | 9.170377000 | 11.160587000 |
| 1 | 17.806433000 | 10.216011000 | 11.048572000 |
| 1 | 14.962793000 | 10.235820000 | 6.251154000 |
| 14 | 12.645016000 | 10.717375000 | 6.900151000 |
| 1 | 12.362057000 | 9.260847000 | 7.110772000 |
| 6 | 10.687220000 | 12.535951000 | 3.660883000 |
| 6 | 10.436212000 | 11.465254000 | 2.794850000 |

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|---|---|---|---|
| 6 | 11.340980000 | 12.313537000 | 4.875041000 |
| 1 | 9.915007000 | 11.635971000 | 1.849214000 |
| 1 | 11.512347000 | 13.153106000 | 5.548855000 |
| 6 | 10.845489000 | 10.177275000 | 3.154174000 |
| 6 | 11.776561000 | 11.029453000 | 5.249131000 |
| 1 | 10.639802000 | 9.335093000 | 2.487892000 |
| 6 | 11.515632000 | 9.967554000 | 4.366151000 |
| 1 | 11.833366000 | 8.955249000 | 4.635732000 |
| 1 | 10.361146000 | 13.544349000 | 3.389422000 |
| 8 | 11.527644000 | 11.442514000 | 8.043217000 |
| 6 | 10.252121000 | 11.118041000 | 8.118713000 |
| 8 | 9.508088000 | 11.530556000 | 8.977626000 |
| 1 | 9.904857000 | 10.428500000 | 7.331667000 |

**12'**

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| 27 | 14.622576000 | 11.778544000 | 7.456272000 |
| 1 | 14.527001000 | 10.671246000 | 6.454997000 |
| 15 | 14.834619000 | 12.949300000 | 5.697739000 |
| 7 | 16.598912000 | 13.207722000 | 5.763454000 |
| 6 | 17.287940000 | 12.590945000 | 6.755105000 |
| 7 | 18.609098000 | 12.751741000 | 6.897496000 |
| 6 | 19.165604000 | 12.160587000 | 7.963933000 |
| 7 | 18.507183000 | 11.393593000 | 8.848879000 |
| 6 | 17.197571000 | 11.244404000 | 8.635040000 |
| 7 | 16.554954000 | 11.838022000 | 7.602904000 |
| 7 | 16.412709000 | 10.501738000 | 9.454596000 |
| 15 | 14.773699000 | 10.181516000 | 8.829680000 |
| 7 | 13.832461000 | 9.838377000 | 10.156823000 |
| 6 | 13.595793000 | 8.405252000 | 10.351628000 |
| 1 | 12.569709000 | 8.142799000 | 10.043336000 |
| 1 | 13.717339000 | 8.118810000 | 11.408878000 |
| 6 | 14.610369000 | 7.670886000 | 9.469281000 |
| 1 | 15.528519000 | 7.439148000 | 10.041190000 |
| 1 | 14.197275000 | 6.714957000 | 9.111961000 |
| 7 | 14.868355000 | 8.575407000 | 8.355127000 |
| 6 | 15.737084000 | 8.161383000 | 7.247049000 |
| 1 | 15.915425000 | 9.078133000 | 6.664222000 |
| 6 | 17.098050000 | 7.621035000 | 7.705946000 |
| 1 | 17.644320000 | 8.364808000 | 8.303984000 |
| 1 | 17.718021000 | 7.371139000 | 6.831047000 |
| 1 | 16.993699000 | 6.702682000 | 8.306531000 |
| 6 | 15.003156000 | 7.182140000 | 6.328853000 |
| 1 | 14.721869000 | 6.260712000 | 6.864795000 |
| 1 | 15.642474000 | 6.892370000 | 5.480042000 |
| 1 | 14.085889000 | 7.645264000 | 5.933411000 |
| 6 | 12.846206000 | 10.804903000 | 10.667877000 |
| 1 | 13.153178000 | 11.777557000 | 10.267646000 |
| 6 | 12.892250000 | 10.906112000 | 12.191252000 |

| 1 | 12.588497000 | 9.959892000 | 12.669182000 |
| 1 | 12.199088000 | 11.687834000 | 12.537894000 |
| 1 | 13.904698000 | 11.166655000 | 12.536477000 |
| 6 | 11.430381000 | 10.540763000 | 10.144382000 |
| 1 | 11.437287000 | 10.429216000 | 9.049305000 |
| 1 | 10.778573000 | 11.390621000 | 10.395780000 |
| 1 | 10.983643000 | 9.637893000 | 10.589971000 |
| 7 | 14.216182000 | 14.441484000 | 5.292794000 |
| 6 | 13.735047000 | 14.562010000 | 3.921004000 |
| 1 | 14.063381000 | 15.511175000 | 3.465722000 |
| 1 | 12.631444000 | 14.542672000 | 3.890042000 |
| 6 | 14.314467000 | 13.365073000 | 3.165608000 |
| 1 | 13.620170000 | 13.021388000 | 2.384695000 |
| 1 | 15.261703000 | 13.635536000 | 2.663108000 |
| 7 | 14.511001000 | 12.329716000 | 4.173606000 |
| 6 | 14.869281000 | 10.975123000 | 3.749949000 |
| 1 | 15.028614000 | 10.412979000 | 4.682442000 |
| 6 | 13.698967000 | 10.312371000 | 3.018031000 |
| 1 | 12.802706000 | 10.314592000 | 3.657407000 |
| 1 | 13.943397000 | 9.269634000 | 2.760050000 |
| 1 | 13.454103000 | 10.834710000 | 2.078648000 |
| 6 | 16.174435000 | 10.933124000 | 2.947813000 |
| 1 | 16.092475000 | 11.493494000 | 2.002025000 |
| 1 | 16.437737000 | 9.893954000 | 2.694659000 |
| 1 | 17.002645000 | 11.362861000 | 3.531619000 |
| 6 | 13.880295000 | 15.478408000 | 6.272018000 |
| 1 | 14.065927000 | 15.033427000 | 7.252518000 |
| 6 | 14.803796000 | 16.689654000 | 6.145307000 |
| 1 | 15.849821000 | 16.389573000 | 6.304094000 |
| 1 | 14.551758000 | 17.445962000 | 6.904457000 |
| 1 | 14.714274000 | 17.163054000 | 5.153295000 |
| 6 | 12.397911000 | 15.853931000 | 6.234014000 |
| 1 | 12.136396000 | 16.430839000 | 5.332081000 |
| 1 | 12.150884000 | 16.470530000 | 7.110963000 |
| 1 | 11.768307000 | 14.952450000 | 6.271896000 |
| 6 | 17.308259000 | 14.103797000 | 4.860715000 |
| 1 | 17.971707000 | 14.766267000 | 5.433856000 |
| 1 | 16.573277000 | 14.717088000 | 4.328699000 |
| 1 | 17.916191000 | 13.545846000 | 4.130718000 |
| 6 | 20.610270000 | 12.383542000 | 8.204083000 |
| 6 | 21.339166000 | 13.260740000 | 7.382494000 |
| 1 | 20.823282000 | 13.754215000 | 6.558402000 |
| 6 | 22.688245000 | 13.504152000 | 7.639918000 |
| 1 | 23.246919000 | 14.195021000 | 7.003773000 |
| 6 | 23.324387000 | 12.869798000 | 8.714126000 |
| 1 | 24.377200000 | 13.075414000 | 8.925630000 |
| 6 | 22.608144000 | 11.982251000 | 9.526320000 |
| 1 | 23.105233000 | 11.480149000 | 10.360201000 |
| 6 | 21.258303000 | 11.739907000 | 9.273572000 |
| 1 | 20.681186000 | 11.060591000 | 9.901415000 |

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| 6 | 16.946462000 | 9.945359000 | 10.686896000 |
| 1 | 17.485115000 | 8.997770000 | 10.520060000 |
| 1 | 16.109851000 | 9.764876000 | 11.374255000 |
| 1 | 17.643108000 | 10.659691000 | 11.146174000 |
| 1 | 13.146009000 | 11.831442000 | 7.435771000 |
| 14 | 14.653229000 | 13.384152000 | 9.056850000 |
| 1 | 15.223373000 | 12.947014000 | 10.381043000 |
| 6 | 12.097015000 | 16.201787000 | 10.803932000 |
| 6 | 10.826832000 | 15.782383000 | 10.388311000 |
| 6 | 13.234572000 | 15.506619000 | 10.383470000 |
| 1 | 9.937187000 | 16.320694000 | 10.726882000 |
| 1 | 14.219502000 | 15.842466000 | 10.721513000 |
| 6 | 10.705249000 | 14.677245000 | 9.539439000 |
| 6 | 13.131082000 | 14.384531000 | 9.540031000 |
| 1 | 9.719262000 | 14.345639000 | 9.200655000 |
| 6 | 11.850144000 | 13.994207000 | 9.115746000 |
| 1 | 11.755747000 | 13.138238000 | 8.442986000 |
| 1 | 12.199882000 | 17.068976000 | 11.462180000 |
| 8 | 15.815532000 | 14.645555000 | 8.699109000 |
| 6 | 17.037436000 | 14.772394000 | 9.172111000 |
| 1 | 17.309800000 | 14.019487000 | 9.931225000 |
| 8 | 17.809495000 | 15.630353000 | 8.815780000 |

**14'**

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| 1 | 12.579348000 | 9.834557000 | 6.627250000 |
| 15 | 15.078687000 | 12.771976000 | 5.397041000 |
| 7 | 16.833011000 | 12.932961000 | 5.476661000 |
| 6 | 17.479478000 | 12.285504000 | 6.478272000 |
| 7 | 18.799299000 | 12.404348000 | 6.634848000 |
| 6 | 19.336266000 | 11.763828000 | 7.682632000 |
| 7 | 18.657514000 | 10.951386000 | 8.505975000 |
| 6 | 17.345686000 | 10.854526000 | 8.290329000 |
| 7 | 16.708882000 | 11.546305000 | 7.312820000 |
| 7 | 16.563053000 | 10.059645000 | 9.065024000 |
| 15 | 14.870491000 | 9.960200000 | 8.607194000 |
| 7 | 14.006008000 | 9.726834000 | 10.008132000 |
| 6 | 13.275296000 | 8.457737000 | 10.027288000 |
| 1 | 12.251856000 | 8.585788000 | 9.632481000 |
| 1 | 13.198566000 | 8.065917000 | 11.052817000 |
| 6 | 14.076827000 | 7.521311000 | 9.128924000 |
| 1 | 14.878013000 | 7.016192000 | 9.702205000 |
| 1 | 13.435168000 | 6.741863000 | 8.691891000 |
| 7 | 14.613783000 | 8.391410000 | 8.090587000 |
| 6 | 15.311521000 | 7.827834000 | 6.931901000 |
| 1 | 15.708751000 | 8.693274000 | 6.378530000 |
| 6 | 16.497087000 | 6.946292000 | 7.338109000 |
| 1 | 17.205873000 | 7.508303000 | 7.963914000 |

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| 1 | 17.036523000 | 6.594307000 | 6.444997000 |
| 1 | 16.168424000 | 6.057146000 | 7.900450000 |
| 6 | 14.328753000 | 7.106891000 | 6.007721000 |
| 1 | 13.843299000 | 6.259548000 | 6.518704000 |
| 1 | 14.848688000 | 6.710137000 | 5.121840000 |
| 1 | 13.542937000 | 7.799082000 | 5.670723000 |
| 6 | 13.603673000 | 10.809156000 | 10.917433000 |
| 1 | 14.142861000 | 11.703268000 | 10.578137000 |
| 6 | 14.053665000 | 10.506942000 | 12.350745000 |
| 1 | 13.510404000 | 9.643967000 | 12.769133000 |
| 1 | 13.851179000 | 11.371005000 | 13.002294000 |
| 1 | 15.131394000 | 10.286576000 | 12.390367000 |
| 6 | 12.106802000 | 11.109238000 | 10.837542000 |
| 1 | 11.794636000 | 11.275238000 | 9.797006000 |
| 1 | 11.877336000 | 12.020428000 | 11.408396000 |
| 1 | 11.507597000 | 10.286768000 | 11.260015000 |
| 7 | 14.540133000 | 14.291350000 | 4.963361000 |
| 6 | 13.892655000 | 14.342886000 | 3.654722000 |
| 1 | 14.143454000 | 15.279502000 | 3.132221000 |
| 1 | 12.794267000 | 14.292649000 | 3.754345000 |
| 6 | 14.419116000 | 13.135888000 | 2.884279000 |
| 1 | 13.667867000 | 12.762394000 | 2.172310000 |
| 1 | 15.320355000 | 13.404109000 | 2.302115000 |
| 7 | 14.713943000 | 12.132635000 | 3.899640000 |
| 6 | 15.052938000 | 10.768523000 | 3.486871000 |
| 1 | 15.438111000 | 10.268283000 | 4.388263000 |
| 6 | 13.797072000 | 10.014804000 | 3.042489000 |
| 1 | 13.067500000 | 9.975412000 | 3.865272000 |
| 1 | 14.042518000 | 8.984266000 | 2.739541000 |
| 1 | 13.318000000 | 10.509209000 | 2.181702000 |
| 6 | 16.162141000 | 10.751922000 | 2.430717000 |
| 1 | 15.820526000 | 11.182181000 | 1.475198000 |
| 1 | 16.487632000 | 9.719050000 | 2.232133000 |
| 1 | 17.036798000 | 11.326495000 | 2.773679000 |
| 6 | 14.262550000 | 15.359468000 | 5.932856000 |
| 1 | 14.769018000 | 15.059259000 | 6.859348000 |
| 6 | 14.881948000 | 16.686247000 | 5.480342000 |
| 1 | 15.952831000 | 16.569183000 | 5.251149000 |
| 1 | 14.777589000 | 17.441610000 | 6.274287000 |
| 1 | 14.379816000 | 17.082763000 | 4.582546000 |
| 6 | 12.767900000 | 15.494751000 | 6.234946000 |
| 1 | 12.215386000 | 15.906681000 | 5.375021000 |
| 1 | 12.612144000 | 16.172264000 | 7.087385000 |
| 1 | 12.338727000 | 14.517645000 | 6.497871000 |
| 6 | 17.599455000 | 13.753424000 | 4.546894000 |
| 1 | 18.222344000 | 14.474351000 | 5.095805000 |
| 1 | 16.897714000 | 14.305181000 | 3.911564000 |
| 1 | 18.257819000 | 13.133847000 | 3.918149000 |
| 6 | 20.769008000 | 11.999635000 | 7.973862000 |
| 6 | 21.509005000 | 12.907493000 | 7.195344000 |

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| 1 | 21.017252000 | 13.399445000 | 6.355532000 |
| 6 | 22.838442000 | 13.184204000 | 7.513354000 |
| 1 | 23.404389000 | 13.898640000 | 6.910388000 |
| 6 | 23.445465000 | 12.552269000 | 8.605627000 |
| 1 | 24.481503000 | 12.785413000 | 8.866042000 |
| 6 | 22.720004000 | 11.633478000 | 9.373893000 |
| 1 | 23.194543000 | 11.134744000 | 10.222692000 |
| 6 | 21.389183000 | 11.357064000 | 9.060463000 |
| 1 | 20.804756000 | 10.655905000 | 9.657190000 |
| 6 | 17.150412000 | 9.349652000 | 10.192162000 |
| 1 | 17.893808000 | 8.609772000 | 9.860342000 |
| 1 | 16.345716000 | 8.842405000 | 10.736719000 |
| 1 | 17.647457000 | 10.059676000 | 10.870014000 |
| 1 | 14.778767000 | 10.479616000 | 6.184818000 |
| 14 | 15.218542000 | 13.287982000 | 8.770988000 |
| 1 | 16.033880000 | 12.754779000 | 9.919170000 |
| 1 | 16.197088000 | 14.290402000 | 8.218091000 |
| 6 | 13.249170000 | 16.089721000 | 11.179649000 |
| 6 | 11.893780000 | 15.852953000 | 10.914899000 |
| 6 | 14.227198000 | 15.332975000 | 10.528374000 |
| 1 | 11.126370000 | 16.441075000 | 11.425477000 |
| 1 | 15.281928000 | 15.527023000 | 10.750920000 |
| 6 | 11.529870000 | 14.863663000 | 9.996138000 |
| 6 | 13.878952000 | 14.328900000 | 9.601184000 |
| 1 | 10.474932000 | 14.668034000 | 9.782591000 |
| 6 | 12.514255000 | 14.112532000 | 9.344186000 |
| 1 | 12.226787000 | 13.343147000 | 8.625958000 |
| 1 | 13.542803000 | 16.863134000 | 11.895308000 |
| 6 | 12.075969000 | 10.782101000 | 6.899904000 |
| 8 | 10.850511000 | 10.837077000 | 6.930059000 |
| 8 | 12.865995000 | 11.755318000 | 7.178175000 |

**14''**

| | | | |
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| 27 | 15.007846000 | 11.129603000 | 6.932865000 |
| 1 | 17.370886000 | 9.694163000 | 5.422608000 |
| 15 | 15.159970000 | 12.622296000 | 5.315254000 |
| 7 | 16.913498000 | 12.485440000 | 5.097263000 |
| 6 | 17.620736000 | 12.122779000 | 6.192199000 |
| 7 | 18.928405000 | 12.379477000 | 6.298963000 |
| 6 | 19.521978000 | 11.967116000 | 7.424784000 |
| 7 | 18.924405000 | 11.222790000 | 8.368596000 |
| 6 | 17.623658000 | 10.982510000 | 8.187607000 |
| 7 | 16.914058000 | 11.499775000 | 7.166569000 |
| 7 | 16.945414000 | 10.177663000 | 9.058244000 |
| 15 | 15.285829000 | 9.762621000 | 8.648026000 |
| 7 | 14.484669000 | 9.648995000 | 10.117912000 |
| 6 | 13.794577000 | 8.368519000 | 10.262364000 |
| 1 | 12.782139000 | 8.403707000 | 9.819846000 |

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| 1 | 13.689682000 | 8.105856000 | 11.324599000 |
| 6 | 14.668193000 | 7.357610000 | 9.532299000 |
| 1 | 15.442427000 | 6.954974000 | 10.212806000 |
| 1 | 14.075322000 | 6.508313000 | 9.158661000 |
| 7 | 15.257210000 | 8.104537000 | 8.428087000 |
| 6 | 16.078003000 | 7.402217000 | 7.430694000 |
| 1 | 16.662508000 | 8.174966000 | 6.916812000 |
| 6 | 17.083720000 | 6.448901000 | 8.087258000 |
| 1 | 17.710234000 | 6.971211000 | 8.825212000 |
| 1 | 17.746388000 | 6.025927000 | 7.317046000 |
| 1 | 16.583616000 | 5.607345000 | 8.593050000 |
| 6 | 15.206740000 | 6.693357000 | 6.396548000 |
| 1 | 14.572694000 | 5.930426000 | 6.877825000 |
| 1 | 15.833388000 | 6.196652000 | 5.640627000 |
| 1 | 14.571404000 | 7.426319000 | 5.882122000 |
| 6 | 14.372695000 | 10.657165000 | 11.183606000 |
| 1 | 14.831694000 | 11.573149000 | 10.791080000 |
| 6 | 15.151977000 | 10.239321000 | 12.440424000 |
| 1 | 14.729657000 | 9.321551000 | 12.881811000 |
| 1 | 15.085028000 | 11.030046000 | 13.203746000 |
| 1 | 16.213284000 | 10.057766000 | 12.229233000 |
| 6 | 12.918509000 | 10.964967000 | 11.560365000 |
| 1 | 12.328284000 | 11.244010000 | 10.679670000 |
| 1 | 12.885382000 | 11.802529000 | 12.274143000 |
| 1 | 12.442269000 | 10.098073000 | 12.046755000 |
| 7 | 14.993765000 | 14.280835000 | 5.355905000 |
| 6 | 14.372757000 | 14.862478000 | 4.171675000 |
| 1 | 14.945040000 | 15.735173000 | 3.815913000 |
| 1 | 13.344325000 | 15.205091000 | 4.388165000 |
| 6 | 14.373664000 | 13.753956000 | 3.109164000 |
| 1 | 13.459239000 | 13.791462000 | 2.501733000 |
| 1 | 15.230816000 | 13.870742000 | 2.422021000 |
| 7 | 14.441946000 | 12.484913000 | 3.838051000 |
| 6 | 13.910614000 | 11.247861000 | 3.237479000 |
| 1 | 14.091189000 | 10.459150000 | 3.979234000 |
| 6 | 12.402560000 | 11.363015000 | 3.000423000 |
| 1 | 11.886442000 | 11.661439000 | 3.926098000 |
| 1 | 11.997224000 | 10.394984000 | 2.666183000 |
| 1 | 12.158256000 | 12.100371000 | 2.218293000 |
| 6 | 14.669231000 | 10.874775000 | 1.961037000 |
| 1 | 14.565560000 | 11.651136000 | 1.183773000 |
| 1 | 14.270748000 | 9.934643000 | 1.549611000 |
| 1 | 15.735388000 | 10.710980000 | 2.173794000 |
| 6 | 15.516997000 | 15.117042000 | 6.439661000 |
| 1 | 15.613416000 | 14.455048000 | 7.311044000 |
| 6 | 16.909924000 | 15.692073000 | 6.143394000 |
| 1 | 17.668046000 | 14.901048000 | 6.059202000 |
| 1 | 17.219724000 | 16.365301000 | 6.957672000 |
| 1 | 16.911349000 | 16.277341000 | 5.208862000 |
| 6 | 14.528974000 | 16.220302000 | 6.818725000 |

| | | | |
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| 1 | 14.448967000 | 16.979994000 | 6.023946000 |
| 1 | 14.868240000 | 16.723892000 | 7.735740000 |
| 1 | 13.530638000 | 15.801137000 | 7.007500000 |
| 6 | 17.567112000 | 12.988132000 | 3.899431000 |
| 1 | 18.635612000 | 12.745839000 | 3.943160000 |
| 1 | 17.451750000 | 14.079195000 | 3.801447000 |
| 1 | 17.120167000 | 12.501162000 | 3.021859000 |
| 6 | 20.921482000 | 12.389440000 | 7.660797000 |
| 6 | 21.544982000 | 13.293503000 | 6.782158000 |
| 1 | 20.992853000 | 13.643752000 | 5.909229000 |
| 6 | 22.838939000 | 13.745682000 | 7.043211000 |
| 1 | 23.314220000 | 14.456777000 | 6.362856000 |
| 6 | 23.524341000 | 13.293024000 | 8.177233000 |
| 1 | 24.533046000 | 13.658387000 | 8.388287000 |
| 6 | 22.916086000 | 12.377848000 | 9.044869000 |
| 1 | 23.455090000 | 12.015788000 | 9.923783000 |
| 6 | 21.619634000 | 11.929154000 | 8.790927000 |
| 1 | 21.124837000 | 11.226010000 | 9.461935000 |
| 6 | 17.708818000 | 9.499285000 | 10.100097000 |
| 1 | 18.554626000 | 8.947844000 | 9.665248000 |
| 1 | 17.045899000 | 8.799564000 | 10.619315000 |
| 1 | 18.110704000 | 10.224675000 | 10.823128000 |
| 1 | 13.548892000 | 10.894010000 | 6.796612000 |
| 14 | 13.736242000 | 12.522586000 | 8.118930000 |
| 1 | 12.954979000 | 13.456328000 | 7.250200000 |
| 1 | 12.665298000 | 11.854499000 | 8.905482000 |
| 6 | 14.397844000 | 15.691272000 | 10.803437000 |
| 6 | 15.723492000 | 15.519133000 | 11.218548000 |
| 6 | 13.826471000 | 14.798155000 | 9.890876000 |
| 1 | 16.173160000 | 16.216577000 | 11.930205000 |
| 1 | 12.793052000 | 14.958255000 | 9.567264000 |
| 6 | 16.467713000 | 14.449601000 | 10.711654000 |
| 6 | 14.554856000 | 13.712884000 | 9.369007000 |
| 1 | 17.503208000 | 14.297765000 | 11.029611000 |
| 6 | 15.886872000 | 13.567084000 | 9.796562000 |
| 1 | 16.485314000 | 12.746163000 | 9.407098000 |
| 1 | 13.807958000 | 16.525715000 | 11.192590000 |
| 6 | 16.436382000 | 9.393508000 | 4.901525000 |
| 8 | 16.532862000 | 8.765311000 | 3.854621000 |
| 8 | 15.344089000 | 9.724006000 | 5.485150000 |

**20'**

| | | | |
|---|---|---|---|
| 27 | 17.982611000 | 12.323965000 | 7.936392000 |
| 1 | 15.962339000 | 12.192523000 | 10.183674000 |
| 15 | 18.012717000 | 10.605549000 | 9.243972000 |
| 7 | 19.215525000 | 9.642636000 | 8.382292000 |
| 6 | 19.992713000 | 10.314086000 | 7.497129000 |
| 7 | 21.112462000 | 9.771226000 | 7.011197000 |

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|---|---|---|---|
| 6 | 21.833188000 | 10.541429000 | 6.185553000 |
| 7 | 21.499440000 | 11.785581000 | 5.816404000 |
| 6 | 20.373178000 | 12.279204000 | 6.340215000 |
| 7 | 19.581693000 | 11.564098000 | 7.177534000 |
| 7 | 19.977420000 | 13.552840000 | 6.084911000 |
| 15 | 18.661078000 | 14.169282000 | 7.089291000 |
| 7 | 17.846460000 | 15.269091000 | 6.136608000 |
| 6 | 17.961088000 | 16.644004000 | 6.626185000 |
| 1 | 17.110817000 | 16.902156000 | 7.282163000 |
| 1 | 17.977018000 | 17.361591000 | 5.790341000 |
| 6 | 19.260387000 | 16.684108000 | 7.429200000 |
| 1 | 20.124881000 | 16.900787000 | 6.772287000 |
| 1 | 19.226240000 | 17.469692000 | 8.198190000 |
| 7 | 19.346246000 | 15.363486000 | 8.041469000 |
| 6 | 20.296392000 | 15.084914000 | 9.120792000 |
| 1 | 20.042525000 | 14.070583000 | 9.462271000 |
| 6 | 21.758706000 | 15.074359000 | 8.656949000 |
| 1 | 21.923495000 | 14.325334000 | 7.868762000 |
| 1 | 22.423066000 | 14.821385000 | 9.498385000 |
| 1 | 22.069873000 | 16.058742000 | 8.268771000 |
| 6 | 20.078392000 | 16.017212000 | 10.312205000 |
| 1 | 20.384231000 | 17.052910000 | 10.089193000 |
| 1 | 20.679135000 | 15.672128000 | 11.167800000 |
| 1 | 19.020239000 | 16.012399000 | 10.613003000 |
| 6 | 16.692840000 | 14.880335000 | 5.311272000 |
| 1 | 16.720135000 | 13.784459000 | 5.278636000 |
| 6 | 16.841143000 | 15.386698000 | 3.875084000 |
| 1 | 16.792638000 | 16.487800000 | 3.827476000 |
| 1 | 16.024876000 | 14.994315000 | 3.248892000 |
| 1 | 17.796534000 | 15.056277000 | 3.438653000 |
| 6 | 15.351970000 | 15.290738000 | 5.925762000 |
| 1 | 15.309121000 | 14.973881000 | 6.978127000 |
| 1 | 14.532570000 | 14.796279000 | 5.382256000 |
| 1 | 15.189006000 | 16.379505000 | 5.861225000 |
| 7 | 16.760588000 | 9.632807000 | 9.733036000 |
| 6 | 16.922072000 | 9.079979000 | 11.079193000 |
| 1 | 17.380594000 | 8.073200000 | 11.058013000 |
| 1 | 15.947064000 | 8.996510000 | 11.577439000 |
| 6 | 17.821571000 | 10.074020000 | 11.814563000 |
| 1 | 17.213833000 | 10.848137000 | 12.309119000 |
| 1 | 18.419664000 | 9.569416000 | 12.589886000 |
| 7 | 18.676311000 | 10.640397000 | 10.781186000 |
| 6 | 19.856032000 | 11.432710000 | 11.122425000 |
| 1 | 20.228897000 | 11.841350000 | 10.169633000 |
| 6 | 19.505922000 | 12.621928000 | 12.019934000 |
| 1 | 18.763716000 | 13.258611000 | 11.520693000 |
| 1 | 20.402650000 | 13.223710000 | 12.235374000 |
| 1 | 19.088029000 | 12.286536000 | 12.982510000 |
| 6 | 20.967922000 | 10.560037000 | 11.711453000 |
| 1 | 20.652674000 | 10.085843000 | 12.655727000 |

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|---|---|---|---|
| 1 | 21.859794000 | 11.169363000 | 11.926493000 |
| 1 | 21.256325000 | 9.764268000 | 11.008845000 |
| 6 | 15.645702000 | 9.241444000 | 8.866215000 |
| 1 | 15.710068000 | 9.903095000 | 7.994960000 |
| 6 | 15.775721000 | 7.798811000 | 8.371791000 |
| 1 | 16.733096000 | 7.649169000 | 7.849836000 |
| 1 | 14.965921000 | 7.566738000 | 7.663703000 |
| 1 | 15.712819000 | 7.080523000 | 9.206924000 |
| 6 | 14.287994000 | 9.504139000 | 9.520143000 |
| 1 | 14.114339000 | 8.851933000 | 10.391662000 |
| 1 | 13.486697000 | 9.314130000 | 8.791476000 |
| 1 | 14.211577000 | 10.550845000 | 9.848784000 |
| 6 | 19.589172000 | 8.296392000 | 8.792479000 |
| 1 | 19.860609000 | 7.699141000 | 7.912114000 |
| 1 | 18.730872000 | 7.829902000 | 9.288237000 |
| 1 | 20.445691000 | 8.299786000 | 9.484396000 |
| 6 | 23.112580000 | 9.992356000 | 5.677166000 |
| 6 | 23.624711000 | 8.792589000 | 6.200636000 |
| 1 | 23.055900000 | 8.274155000 | 6.973418000 |
| 6 | 24.840401000 | 8.286551000 | 5.740474000 |
| 1 | 25.238618000 | 7.360537000 | 6.163118000 |
| 6 | 25.553411000 | 8.967563000 | 4.746430000 |
| 1 | 26.500055000 | 8.564148000 | 4.377235000 |
| 6 | 25.049391000 | 10.163335000 | 4.221808000 |
| 1 | 25.606251000 | 10.700203000 | 3.449723000 |
| 6 | 23.841869000 | 10.680038000 | 4.691723000 |
| 1 | 23.443373000 | 11.617001000 | 4.301132000 |
| 6 | 20.751226000 | 14.401645000 | 5.188972000 |
| 1 | 21.598787000 | 14.875927000 | 5.709623000 |
| 1 | 20.088095000 | 15.184410000 | 4.799207000 |
| 1 | 21.146155000 | 13.806621000 | 4.356069000 |
| 6 | 14.931829000 | 10.529031000 | 14.454743000 |
| 6 | 15.992024000 | 11.307566000 | 14.930477000 |
| 6 | 14.223180000 | 10.937035000 | 13.318223000 |
| 1 | 16.547139000 | 10.990196000 | 15.817422000 |
| 1 | 13.394821000 | 10.333355000 | 12.938347000 |
| 6 | 16.347950000 | 12.486758000 | 14.265076000 |
| 6 | 14.578633000 | 12.119050000 | 12.664913000 |
| 1 | 17.186825000 | 13.080117000 | 14.640462000 |
| 1 | 14.009772000 | 12.426060000 | 11.783374000 |
| 6 | 15.653686000 | 12.910250000 | 13.117344000 |
| 1 | 14.652846000 | 9.607192000 | 14.971932000 |
| 14 | 16.175128000 | 14.424386000 | 12.147946000 |
| 1 | 15.002141000 | 15.339892000 | 12.043420000 |
| 1 | 17.273274000 | 15.107635000 | 12.874142000 |
| 8 | 16.728081000 | 14.045726000 | 10.654489000 |
| 6 | 15.939439000 | 13.199111000 | 9.739774000 |
| 1 | 14.901362000 | 13.579906000 | 9.788575000 |
| 8 | 16.382932000 | 13.252511000 | 8.487136000 |
| 6 | 14.527676000 | 9.952172000 | 5.342472000 |

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| 6 | 15.093906000 | 11.059791000 | 6.006123000 |
| 6 | 13.153083000 | 9.697608000 | 5.389106000 |
| 1 | 12.738106000 | 8.827511000 | 4.872185000 |
| 6 | 14.224142000 | 11.914564000 | 6.711414000 |
| 6 | 12.309276000 | 10.550635000 | 6.110300000 |
| 1 | 14.654137000 | 12.753047000 | 7.259904000 |
| 1 | 11.237347000 | 10.340186000 | 6.167937000 |
| 6 | 12.848704000 | 11.663187000 | 6.764337000 |
| 1 | 12.196699000 | 12.331481000 | 7.334567000 |
| 1 | 15.177799000 | 9.262266000 | 4.796348000 |
| 14 | 16.978281000 | 11.283343000 | 6.081712000 |
| 1 | 18.751178000 | 12.871444000 | 9.090395000 |
| 1 | 17.483023000 | 9.878011000 | 5.881019000 |
| 1 | 17.378002000 | 11.888698000 | 4.760510000 |

**20''**

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| 27 | 17.974438000 | 11.954849000 | 8.293080000 |
| 1 | 20.785555000 | 11.906657000 | 9.544121000 |
| 15 | 17.841438000 | 9.983283000 | 9.195373000 |
| 7 | 19.009234000 | 9.170916000 | 8.132430000 |
| 6 | 19.910998000 | 9.978616000 | 7.504169000 |
| 7 | 21.045426000 | 9.502314000 | 6.980367000 |
| 6 | 21.874893000 | 10.411748000 | 6.449100000 |
| 7 | 21.626877000 | 11.727097000 | 6.362751000 |
| 6 | 20.453351000 | 12.133373000 | 6.863109000 |
| 7 | 19.596455000 | 11.288218000 | 7.469012000 |
| 7 | 20.050551000 | 13.426887000 | 6.765163000 |
| 15 | 18.354819000 | 13.780569000 | 7.121325000 |
| 7 | 17.863537000 | 14.320596000 | 5.601237000 |
| 6 | 17.231634000 | 15.634651000 | 5.630376000 |
| 1 | 16.132742000 | 15.555743000 | 5.724232000 |
| 1 | 17.455743000 | 16.185553000 | 4.705746000 |
| 6 | 17.835091000 | 16.336863000 | 6.840683000 |
| 1 | 18.752769000 | 16.889084000 | 6.566962000 |
| 1 | 17.131847000 | 17.060404000 | 7.274863000 |
| 7 | 18.113038000 | 15.270225000 | 7.802822000 |
| 6 | 17.975429000 | 15.550746000 | 9.240800000 |
| 1 | 18.305551000 | 14.637368000 | 9.751870000 |
| 6 | 18.903659000 | 16.695954000 | 9.643796000 |
| 1 | 19.941465000 | 16.453332000 | 9.370994000 |
| 1 | 18.860363000 | 16.855831000 | 10.732666000 |
| 1 | 18.620595000 | 17.644740000 | 9.157129000 |
| 6 | 16.514015000 | 15.819086000 | 9.617310000 |
| 1 | 16.098861000 | 16.694115000 | 9.089964000 |
| 1 | 16.426490000 | 16.017837000 | 10.697600000 |
| 1 | 15.890048000 | 14.944474000 | 9.379722000 |
| 6 | 18.165254000 | 13.693962000 | 4.307661000 |
| 1 | 18.677238000 | 12.751240000 | 4.542013000 |

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| 6 | 19.116408000 | 14.537338000 | 3.446384000 |
| 1 | 18.618179000 | 15.440549000 | 3.058619000 |
| 1 | 19.444980000 | 13.949095000 | 2.575020000 |
| 1 | 20.007521000 | 14.849794000 | 4.003341000 |
| 6 | 16.894910000 | 13.371311000 | 3.516259000 |
| 1 | 16.201777000 | 12.760642000 | 4.103279000 |
| 1 | 17.150713000 | 12.822681000 | 2.595779000 |
| 1 | 16.371127000 | 14.295945000 | 3.221795000 |
| 7 | 16.427894000 | 9.093571000 | 9.279480000 |
| 6 | 16.510936000 | 8.050329000 | 10.311513000 |
| 1 | 16.950894000 | 7.130325000 | 9.893517000 |
| 1 | 15.509667000 | 7.797738000 | 10.682148000 |
| 6 | 17.409838000 | 8.614862000 | 11.408838000 |
| 1 | 16.829064000 | 9.216745000 | 12.133213000 |
| 1 | 17.911127000 | 7.808889000 | 11.966843000 |
| 7 | 18.385088000 | 9.423572000 | 10.685389000 |
| 6 | 19.665712000 | 9.764295000 | 11.306293000 |
| 1 | 20.199978000 | 10.386919000 | 10.579752000 |
| 6 | 19.459943000 | 10.586953000 | 12.582257000 |
| 1 | 18.853008000 | 11.477515000 | 12.363657000 |
| 1 | 20.426767000 | 10.912937000 | 12.996684000 |
| 1 | 18.949857000 | 9.990667000 | 13.356827000 |
| 6 | 20.542820000 | 8.533705000 | 11.565529000 |
| 1 | 20.075530000 | 7.840175000 | 12.282577000 |
| 1 | 21.508302000 | 8.850251000 | 11.991288000 |
| 1 | 20.747553000 | 7.982523000 | 10.636157000 |
| 6 | 15.114485000 | 9.731093000 | 9.056073000 |
| 1 | 15.293149000 | 10.564768000 | 8.371200000 |
| 6 | 14.152866000 | 8.766273000 | 8.370560000 |
| 1 | 14.620559000 | 8.340643000 | 7.470206000 |
| 1 | 13.236004000 | 9.296535000 | 8.069007000 |
| 1 | 13.863041000 | 7.937408000 | 9.037658000 |
| 6 | 14.529604000 | 10.355031000 | 10.327902000 |
| 1 | 14.255560000 | 9.597493000 | 11.079481000 |
| 1 | 13.618071000 | 10.921190000 | 10.080405000 |
| 1 | 15.249667000 | 11.054481000 | 10.779658000 |
| 6 | 19.150585000 | 7.724080000 | 8.101255000 |
| 1 | 18.192760000 | 7.272817000 | 7.802598000 |
| 1 | 19.437835000 | 7.326254000 | 9.086133000 |
| 1 | 19.922668000 | 7.453066000 | 7.371930000 |
| 6 | 23.172811000 | 9.920644000 | 5.928780000 |
| 6 | 23.635514000 | 8.642878000 | 6.286374000 |
| 1 | 23.018962000 | 8.027864000 | 6.942486000 |
| 6 | 24.870080000 | 8.186221000 | 5.825659000 |
| 1 | 25.233262000 | 7.200597000 | 6.128339000 |
| 6 | 25.646888000 | 8.991968000 | 4.984135000 |
| 1 | 26.606714000 | 8.626824000 | 4.608970000 |
| 6 | 25.189254000 | 10.263838000 | 4.620198000 |
| 1 | 25.793420000 | 10.894901000 | 3.963580000 |
| 6 | 23.965131000 | 10.732364000 | 5.099931000 |

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| 1 | 23.602593000 | 11.725713000 | 4.833559000 |
| 6 | 21.001071000 | 14.446721000 | 6.355991000 |
| 1 | 21.724673000 | 14.635268000 | 7.161397000 |
| 1 | 20.456792000 | 15.376013000 | 6.155513000 |
| 1 | 21.546921000 | 14.138734000 | 5.454108000 |
| 6 | 25.122053000 | 10.340977000 | 9.891422000 |
| 6 | 24.818653000 | 11.016329000 | 8.703838000 |
| 6 | 24.630190000 | 10.819138000 | 11.110138000 |
| 1 | 25.197259000 | 10.640089000 | 7.751776000 |
| 1 | 24.869438000 | 10.292962000 | 12.038480000 |
| 6 | 24.028095000 | 12.168920000 | 8.738107000 |
| 6 | 23.844388000 | 11.976400000 | 11.139166000 |
| 1 | 23.782429000 | 12.671751000 | 7.799047000 |
| 1 | 23.469748000 | 12.346762000 | 12.098372000 |
| 6 | 23.531181000 | 12.673162000 | 9.956050000 |
| 1 | 25.741248000 | 9.440315000 | 9.865460000 |
| 14 | 22.475711000 | 14.217052000 | 10.025410000 |
| 1 | 22.556215000 | 14.724915000 | 11.425251000 |
| 1 | 23.012691000 | 15.246695000 | 9.099875000 |
| 8 | 20.921129000 | 13.949902000 | 9.571141000 |
| 6 | 20.257043000 | 12.719539000 | 10.066658000 |
| 1 | 20.516125000 | 12.659556000 | 11.138592000 |
| 8 | 18.938848000 | 12.736765000 | 9.893442000 |
| 6 | 14.234685000 | 11.353040000 | 5.263975000 |
| 6 | 15.111870000 | 11.934987000 | 6.198620000 |
| 6 | 13.027691000 | 11.968204000 | 4.919204000 |
| 1 | 12.365721000 | 11.502662000 | 4.183683000 |
| 6 | 14.722920000 | 13.144898000 | 6.798549000 |
| 6 | 12.666570000 | 13.181664000 | 5.516607000 |
| 1 | 15.377413000 | 13.605317000 | 7.541118000 |
| 1 | 11.726784000 | 13.668732000 | 5.242464000 |
| 6 | 13.513878000 | 13.764607000 | 6.464594000 |
| 1 | 13.232890000 | 14.705475000 | 6.946547000 |
| 1 | 14.508678000 | 10.407968000 | 4.784583000 |
| 14 | 16.780831000 | 11.118949000 | 6.550980000 |
| 1 | 16.691114000 | 12.427909000 | 8.848298000 |
| 1 | 16.465088000 | 9.656929000 | 6.563990000 |
| 1 | 17.558974000 | 11.191926000 | 5.276632000 |

## 5 (BP86)

| | | | |
|---|---|---|---|
| 27 | 15.174265000 | 11.560706000 | 7.198131000 |
| 17 | 13.227980000 | 10.918291000 | 6.349215000 |
| 17 | 14.952753000 | 13.175245000 | 8.915848000 |
| 15 | 15.504267000 | 12.980019000 | 5.611245000 |
| 7 | 17.170367000 | 13.418861000 | 5.948635000 |
| 6 | 17.816111000 | 12.640808000 | 6.869927000 |
| 7 | 19.115350000 | 12.836253000 | 7.130764000 |
| 6 | 19.659554000 | 12.036698000 | 8.072107000 |

| 7  | 18.983743000 | 11.090144000 | 8.757031000  |
|----|--------------|--------------|--------------|
| 6  | 17.688655000 | 10.948597000 | 8.445688000  |
| 7  | 17.062281000 | 11.668312000 | 7.466390000  |
| 7  | 16.915418000 | 10.031289000 | 9.102883000  |
| 15 | 15.270248000 | 9.859007000  | 8.515700000  |
| 7  | 14.403912000 | 9.441169000  | 9.890347000  |
| 6  | 13.675310000 | 8.180150000  | 9.711618000  |
| 1  | 12.663846000 | 8.351381000  | 9.277870000  |
| 1  | 13.551523000 | 7.662138000  | 10.685237000 |
| 6  | 14.529557000 | 7.350651000  | 8.742173000  |
| 1  | 15.309050000 | 6.769185000  | 9.292247000  |
| 1  | 13.902102000 | 6.625771000  | 8.184299000  |
| 7  | 15.107866000 | 8.340353000  | 7.842762000  |
| 6  | 15.694228000 | 8.021671000  | 6.540211000  |
| 1  | 16.003102000 | 9.010410000  | 6.129082000  |
| 6  | 16.947449000 | 7.144074000  | 6.673011000  |
| 1  | 17.696113000 | 7.622711000  | 7.335723000  |
| 1  | 17.419994000 | 6.975052000  | 5.684288000  |
| 1  | 16.697832000 | 6.148650000  | 7.097090000  |
| 6  | 14.647992000 | 7.438864000  | 5.583680000  |
| 1  | 14.282242000 | 6.450059000  | 5.931799000  |
| 1  | 15.082655000 | 7.291740000  | 4.574660000  |
| 1  | 13.788238000 | 8.132133000  | 5.504226000  |
| 6  | 13.858136000 | 10.503155000 | 10.763367000 |
| 1  | 14.535600000 | 11.372155000 | 10.619915000 |
| 6  | 13.916552000 | 10.068454000 | 12.231575000 |
| 1  | 13.240734000 | 9.211174000  | 12.436867000 |
| 1  | 13.598502000 | 10.901456000 | 12.889697000 |
| 1  | 14.945890000 | 9.775004000  | 12.520287000 |
| 6  | 12.458830000 | 10.954600000 | 10.326224000 |
| 1  | 12.466676000 | 11.241810000 | 9.255945000  |
| 1  | 12.146462000 | 11.842037000 | 10.911356000 |
| 1  | 11.697657000 | 10.160966000 | 10.481459000 |
| 7  | 14.780271000 | 14.446096000 | 5.235712000  |
| 6  | 14.146662000 | 14.419031000 | 3.912863000  |
| 1  | 14.145217000 | 15.433122000 | 3.461752000  |
| 1  | 13.092422000 | 14.064786000 | 3.972954000  |
| 6  | 14.984512000 | 13.438936000 | 3.078729000  |
| 1  | 14.372946000 | 12.985553000 | 2.271985000  |
| 1  | 15.847508000 | 13.958864000 | 2.595922000  |
| 7  | 15.412501000 | 12.429538000 | 4.038213000  |
| 6  | 15.916540000 | 11.106831000 | 3.665329000  |
| 1  | 16.124913000 | 10.607091000 | 4.639538000  |
| 6  | 14.841843000 | 10.280101000 | 2.950017000  |
| 1  | 13.934956000 | 10.219204000 | 3.582583000  |
| 1  | 15.208905000 | 9.253104000  | 2.751789000  |
| 1  | 14.568523000 | 10.726385000 | 1.970757000  |
| 6  | 17.232713000 | 11.194288000 | 2.878751000  |
| 1  | 17.084102000 | 11.703228000 | 1.903117000  |
| 1  | 17.636486000 | 10.183325000 | 2.668282000  |

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|---|---|---|---|
| 1 | 17.997471000 | 11.759133000 | 3.448685000 |
| 6 | 14.220058000 | 15.284729000 | 6.317593000 |
| 1 | 14.811904000 | 15.023670000 | 7.221032000 |
| 6 | 14.428828000 | 16.770075000 | 6.003590000 |
| 1 | 15.498330000 | 16.991323000 | 5.813326000 |
| 1 | 14.095615000 | 17.391870000 | 6.858342000 |
| 1 | 13.844505000 | 17.092211000 | 5.115492000 |
| 6 | 12.759260000 | 14.935993000 | 6.627593000 |
| 1 | 12.080021000 | 15.208815000 | 5.792402000 |
| 1 | 12.422801000 | 15.483816000 | 7.529918000 |
| 1 | 12.659779000 | 13.851727000 | 6.833972000 |
| 6 | 17.904916000 | 14.442699000 | 5.217999000 |
| 1 | 18.486348000 | 15.069430000 | 5.921120000 |
| 1 | 17.166400000 | 15.072591000 | 4.689119000 |
| 1 | 18.612002000 | 13.997819000 | 4.487025000 |
| 6 | 21.099801000 | 12.207462000 | 8.372138000 |
| 6 | 21.861721000 | 13.178172000 | 7.683571000 |
| 1 | 21.355932000 | 13.797372000 | 6.929522000 |
| 6 | 23.224712000 | 13.335316000 | 7.966078000 |
| 1 | 23.812293000 | 14.093965000 | 7.426475000 |
| 6 | 23.842681000 | 12.527261000 | 8.937671000 |
| 1 | 24.913945000 | 12.652490000 | 9.158954000 |
| 6 | 23.089341000 | 11.559524000 | 9.626755000 |
| 1 | 23.570807000 | 10.926904000 | 10.388310000 |
| 6 | 21.726133000 | 11.398973000 | 9.347283000 |
| 1 | 21.116161000 | 10.650551000 | 9.872268000 |
| 6 | 17.508662000 | 9.176267000 | 10.122088000 |
| 1 | 18.199620000 | 8.428820000 | 9.679436000 |
| 1 | 16.684572000 | 8.660642000 | 10.648170000 |
| 1 | 18.081305000 | 9.787128000 | 10.846163000 |

**5 (M06L)**

| | | | |
|---|---|---|---|
| 27 | 15.091806000 | 11.515431000 | 7.140730000 |
| 17 | 13.106391000 | 10.881903000 | 6.300831000 |
| 17 | 14.895742000 | 13.165130000 | 8.911005000 |
| 15 | 15.466819000 | 12.970683000 | 5.555405000 |
| 7 | 17.127989000 | 13.371021000 | 5.919439000 |
| 6 | 17.751485000 | 12.601660000 | 6.852271000 |
| 7 | 19.035037000 | 12.815570000 | 7.131397000 |
| 6 | 19.568880000 | 12.028922000 | 8.073366000 |
| 7 | 18.898381000 | 11.088506000 | 8.749661000 |
| 6 | 17.617244000 | 10.935057000 | 8.419554000 |
| 7 | 17.003850000 | 11.629350000 | 7.429459000 |
| 7 | 16.854572000 | 10.020590000 | 9.076752000 |
| 15 | 15.211249000 | 9.819208000 | 8.509670000 |
| 7 | 14.381494000 | 9.409917000 | 9.891879000 |
| 6 | 13.657356000 | 8.153969000 | 9.743256000 |
| 1 | 12.640015000 | 8.314032000 | 9.336932000 |

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| 1 | 13.551820000 | 7.652629000 | 10.718958000 |
| 6 | 14.489987000 | 7.321921000 | 8.777085000 |
| 1 | 15.268063000 | 6.742191000 | 9.316438000 |
| 1 | 13.864266000 | 6.595111000 | 8.235488000 |
| 7 | 15.062802000 | 8.294170000 | 7.865682000 |
| 6 | 15.671496000 | 7.939340000 | 6.584177000 |
| 1 | 15.959179000 | 8.910737000 | 6.134335000 |
| 6 | 16.935833000 | 7.109514000 | 6.762292000 |
| 1 | 17.673265000 | 7.625155000 | 7.394184000 |
| 1 | 17.413290000 | 6.901946000 | 5.794240000 |
| 1 | 16.716055000 | 6.136483000 | 7.228461000 |
| 6 | 14.668473000 | 7.286229000 | 5.649678000 |
| 1 | 14.340285000 | 6.305738000 | 6.027088000 |
| 1 | 15.117362000 | 7.111748000 | 4.661843000 |
| 1 | 13.784091000 | 7.925219000 | 5.522138000 |
| 6 | 13.921821000 | 10.454874000 | 10.825040000 |
| 1 | 14.643452000 | 11.281812000 | 10.704403000 |
| 6 | 13.996491000 | 9.953679000 | 12.256180000 |
| 1 | 13.272814000 | 9.147134000 | 12.452184000 |
| 1 | 13.765330000 | 10.766538000 | 12.957543000 |
| 1 | 14.999166000 | 9.575115000 | 12.501247000 |
| 6 | 12.551796000 | 10.990460000 | 10.450775000 |
| 1 | 12.544991000 | 11.347878000 | 9.411088000 |
| 1 | 12.285133000 | 11.841378000 | 11.092119000 |
| 1 | 11.767929000 | 10.225570000 | 10.567986000 |
| 7 | 14.778977000 | 14.441543000 | 5.195326000 |
| 6 | 14.133818000 | 14.437774000 | 3.888548000 |
| 1 | 14.132170000 | 15.451900000 | 3.456938000 |
| 1 | 13.081488000 | 14.100388000 | 3.953125000 |
| 6 | 14.950827000 | 13.472469000 | 3.039817000 |
| 1 | 14.338005000 | 13.026773000 | 2.239604000 |
| 1 | 15.798054000 | 13.993620000 | 2.546868000 |
| 7 | 15.403795000 | 12.460558000 | 3.974856000 |
| 6 | 15.986945000 | 11.186559000 | 3.556723000 |
| 1 | 16.314716000 | 10.704265000 | 4.499494000 |
| 6 | 14.950987000 | 10.279667000 | 2.915059000 |
| 1 | 14.099881000 | 10.125019000 | 3.592650000 |
| 1 | 15.388840000 | 9.301573000 | 2.668963000 |
| 1 | 14.571243000 | 10.706197000 | 1.974034000 |
| 6 | 17.216273000 | 11.388362000 | 2.682382000 |
| 1 | 16.954987000 | 11.868809000 | 1.726745000 |
| 1 | 17.691106000 | 10.427619000 | 2.439633000 |
| 1 | 17.968174000 | 12.018033000 | 3.178946000 |
| 6 | 14.311300000 | 15.326510000 | 6.278290000 |
| 1 | 14.947363000 | 15.075359000 | 7.145220000 |
| 6 | 14.548684000 | 16.780220000 | 5.910652000 |
| 1 | 15.598476000 | 16.962290000 | 5.639212000 |
| 1 | 14.304143000 | 17.433494000 | 6.758972000 |
| 1 | 13.919866000 | 17.103592000 | 5.066399000 |
| 6 | 12.875086000 | 15.034672000 | 6.672605000 |

| | | | |
|---|---|---|---|
| 1 | 12.169655000 | 15.285568000 | 5.864646000 |
| 1 | 12.593304000 | 15.623687000 | 7.555821000 |
| 1 | 12.752436000 | 13.973410000 | 6.933329000 |
| 6 | 17.888285000 | 14.395281000 | 5.229751000 |
| 1 | 18.278221000 | 15.139142000 | 5.939232000 |
| 1 | 17.225003000 | 14.902957000 | 4.519812000 |
| 1 | 18.747904000 | 13.968163000 | 4.692739000 |
| 6 | 21.000170000 | 12.213462000 | 8.386108000 |
| 6 | 21.755090000 | 13.188329000 | 7.713770000 |
| 1 | 21.260746000 | 13.807042000 | 6.962690000 |
| 6 | 23.104918000 | 13.358793000 | 8.004822000 |
| 1 | 23.683463000 | 14.120860000 | 7.476884000 |
| 6 | 23.720949000 | 12.560258000 | 8.970006000 |
| 1 | 24.781367000 | 12.695668000 | 9.197885000 |
| 6 | 22.978429000 | 11.589381000 | 9.644305000 |
| 1 | 23.458155000 | 10.964160000 | 10.401310000 |
| 6 | 21.628021000 | 11.416144000 | 9.356645000 |
| 1 | 21.035551000 | 10.662074000 | 9.877950000 |
| 6 | 17.462812000 | 9.212871000 | 10.115948000 |
| 1 | 18.281313000 | 8.591675000 | 9.722489000 |
| 1 | 16.689990000 | 8.569569000 | 10.552264000 |
| 1 | 17.881505000 | 9.848160000 | 10.909241000 |

## 5 (B3LYP)

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|---|---|---|---|
| 27 | 15.149844000 | 11.597354000 | 7.221749000 |
| 17 | 13.186346000 | 10.974270000 | 6.322994000 |
| 17 | 14.995587000 | 13.255590000 | 8.989588000 |
| 15 | 15.528013000 | 13.039113000 | 5.625749000 |
| 7 | 17.188213000 | 13.448877000 | 5.991382000 |
| 6 | 17.823676000 | 12.648414000 | 6.889991000 |
| 7 | 19.123283000 | 12.819305000 | 7.135435000 |
| 6 | 19.663972000 | 12.015992000 | 8.060122000 |
| 7 | 18.988833000 | 11.079859000 | 8.740160000 |
| 6 | 17.693572000 | 10.952005000 | 8.440685000 |
| 7 | 17.080417000 | 11.685088000 | 7.482853000 |
| 7 | 16.925376000 | 10.039179000 | 9.097507000 |
| 15 | 15.270504000 | 9.860873000 | 8.552832000 |
| 7 | 14.426367000 | 9.426840000 | 9.921834000 |
| 6 | 13.774696000 | 8.122812000 | 9.775006000 |
| 1 | 12.749720000 | 8.230033000 | 9.375586000 |
| 1 | 13.716505000 | 7.606388000 | 10.745601000 |
| 6 | 14.638093000 | 7.341918000 | 8.782610000 |
| 1 | 15.464299000 | 6.815284000 | 9.300560000 |
| 1 | 14.042862000 | 6.584978000 | 8.250923000 |
| 7 | 15.122554000 | 8.358677000 | 7.863004000 |
| 6 | 15.598688000 | 8.054723000 | 6.516154000 |
| 1 | 15.853996000 | 9.032070000 | 6.073607000 |
| 6 | 16.872446000 | 7.204667000 | 6.543568000 |

| | | | |
|---|---|---|---|
| 1 | 17.662053000 | 7.706846000 | 7.124368000 |
| 1 | 17.253055000 | 7.028760000 | 5.524757000 |
| 1 | 16.683537000 | 6.220124000 | 7.003765000 |
| 6 | 14.483990000 | 7.450767000 | 5.659071000 |
| 1 | 14.156689000 | 6.472411000 | 6.048423000 |
| 1 | 14.834635000 | 7.292291000 | 4.627042000 |
| 1 | 13.621857000 | 8.132721000 | 5.639669000 |
| 6 | 13.848316000 | 10.448617000 | 10.817501000 |
| 1 | 14.498340000 | 11.331079000 | 10.713969000 |
| 6 | 13.891947000 | 9.967253000 | 12.268350000 |
| 1 | 13.210740000 | 9.116205000 | 12.433874000 |
| 1 | 13.571067000 | 10.775193000 | 12.943473000 |
| 1 | 14.907869000 | 9.653787000 | 12.557313000 |
| 6 | 12.440294000 | 10.872421000 | 10.391144000 |
| 1 | 12.437025000 | 11.199191000 | 9.340556000 |
| 1 | 12.101014000 | 11.718792000 | 11.007157000 |
| 1 | 11.711512000 | 10.054094000 | 10.517959000 |
| 7 | 14.816649000 | 14.486021000 | 5.225803000 |
| 6 | 14.330661000 | 14.507357000 | 3.844522000 |
| 1 | 14.455329000 | 15.510190000 | 3.406574000 |
| 1 | 13.261069000 | 14.233953000 | 3.796548000 |
| 6 | 15.168119000 | 13.476960000 | 3.080235000 |
| 1 | 14.593536000 | 13.045385000 | 2.246729000 |
| 1 | 16.077654000 | 13.941982000 | 2.650230000 |
| 7 | 15.485069000 | 12.463131000 | 4.070500000 |
| 6 | 15.925510000 | 11.115661000 | 3.718839000 |
| 1 | 16.096547000 | 10.609523000 | 4.683850000 |
| 6 | 14.820871000 | 10.341533000 | 2.996046000 |
| 1 | 13.917942000 | 10.315284000 | 3.622718000 |
| 1 | 15.143812000 | 9.307762000 | 2.793920000 |
| 1 | 14.570561000 | 10.803577000 | 2.026717000 |
| 6 | 17.253089000 | 11.131292000 | 2.955067000 |
| 1 | 17.150730000 | 11.645876000 | 1.985054000 |
| 1 | 17.602438000 | 10.106592000 | 2.751360000 |
| 1 | 18.030712000 | 11.651772000 | 3.535699000 |
| 6 | 14.164494000 | 15.317863000 | 6.259109000 |
| 1 | 14.738097000 | 15.139127000 | 7.181323000 |
| 6 | 14.267866000 | 16.797626000 | 5.890956000 |
| 1 | 15.308570000 | 17.084038000 | 5.670072000 |
| 1 | 13.906627000 | 17.418645000 | 6.724416000 |
| 1 | 13.648389000 | 17.041815000 | 5.012054000 |
| 6 | 12.720571000 | 14.888037000 | 6.531302000 |
| 1 | 12.074309000 | 15.050672000 | 5.652330000 |
| 1 | 12.305118000 | 15.474572000 | 7.364562000 |
| 1 | 12.680284000 | 13.826091000 | 6.812708000 |
| 6 | 17.948770000 | 14.448038000 | 5.256811000 |
| 1 | 18.546581000 | 15.056120000 | 5.949754000 |
| 1 | 17.237979000 | 15.096967000 | 4.730499000 |
| 1 | 18.633430000 | 13.979447000 | 4.530717000 |
| 6 | 21.106131000 | 12.186686000 | 8.351464000 |

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| 6 | 21.854611000 | 13.152454000 | 7.655801000 |
| 1 | 21.351269000 | 13.753294000 | 6.897993000 |
| 6 | 23.205437000 | 13.336648000 | 7.945984000 |
| 1 | 23.781216000 | 14.091463000 | 7.404628000 |
| 6 | 23.823246000 | 12.556773000 | 8.930271000 |
| 1 | 24.878462000 | 12.714753000 | 9.169554000 |
| 6 | 23.087857000 | 11.583311000 | 9.616322000 |
| 1 | 23.572591000 | 10.969619000 | 10.379710000 |
| 6 | 21.736178000 | 11.396274000 | 9.327853000 |
| 1 | 21.142819000 | 10.648741000 | 9.855114000 |
| 6 | 17.536447000 | 9.170234000 | 10.092301000 |
| 1 | 18.193142000 | 8.419816000 | 9.622478000 |
| 1 | 16.733446000 | 8.666395000 | 10.643658000 |
| 1 | 18.139953000 | 9.763203000 | 10.792919000 |

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