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Thermodynamic Data for the Oxidative Addition of Me_3SnCl to $[PtMe_2(bipy\text{-}^tbu_2)]$ in CD_2Cl_2

M.W. Pt(II) cpx. = 493.55 g mol^{-1}
M.W. Me_3SnCl = 199.25 g mol^{-1}
$n_{Sn\ tot}/n_{Pt\ tot}$ = 2.0 ± 0.05

mass Pt(IV) cpx. = 5.0 ± 0.1 mg
Vol. CD_2Cl_2 = 0.7175 ± 0.0005 mL
Pt(II) $^2J_{PtH}$ = 85.64 ± 0.10 Hz

$[Pt]_{tot}$ = (7.81 ± 0.16) x 10^{-3} M
$[Sn]_{tot}$ = (1.562 ± 0.050) x 10^{-2} M
Pt(IV) $^2J_{PtH}$ = 55.5 ± 0.20 Hz

T (°C) ± 1.0	T (K) ± 1.0	T^{-1} (K^{-1}) ± 0.0002	$^2J_{PtH}$ (Hz) ±0.2	$\chi_{Pt(II)}$ ± 0.011	p_{Sn} ± 0.014	K_{eq} (L mol^{-1})	ln K_{eq}	ΔG (kJ mol^{-1})
31.0	304.15	0.00329	79.7	0.803	0.901	17.4 ± 1.1	2.858 ± 0.062	-7.23 ± 0.16
25.1	298.25	0.00335	78.2	0.753	0.877	23.9 ± 1.3	3.175 ± 0.054	-7.87 ± 0.14
19.9	293.05	0.00341	76.4	0.693	0.847	33.4 ± 1.7	3.509 ± 0.049	-8.55 ± 0.12
15.0	288.15	0.00347	74.5	0.630	0.815	46.0 ± 2.1	3.829 ± 0.046	-9.17 ± 0.12
9.1	282.25	0.00354	72.5	0.564	0.782	63.3 ± 2.9	4.147 ± 0.045	-9.73 ± 0.11
4.0	277.15	0.00361	70.4	0.494	0.747	87.6 ± 3.9	4.473 ± 0.045	-10.31 ± 0.11
-2.1	271.05	0.00369	68.2	0.421	0.711	123.7 ± 5.7	4.818 ± 0.046	-10.86 ± 0.11
-7.5	265.65	0.00376	66.2	0.355	0.678	171.6 ± 8.2	5.145 ± 0.048	-11.36 ± 0.11
-12.5	260.65	0.00384	64.3	0.292	0.646	240 ± 12	5.482 ± 0.051	-11.88 ± 0.12
-18.0	255.15	0.00392	62.5	0.232	0.616	343 ± 20	5.839 ± 0.057	-12.39 ± 0.13
-23.9	249.25	0.00401	61.2	0.189	0.595	462 ± 30	6.135 ± 0.064	-12.71 ± 0.14
-30.0	243.15	0.00411	59.8	0.143	0.571	673 ± 52	6.512 ± 0.078	-13.16 ± 0.17
-35.0	238.15	0.00420	59.0	0.116	0.558	873 ± 80	6.772 ± 0.091	-13.41 ± 0.19
-40.0	233.15	0.00429	58.4	0.096	0.548	1100 ± 120	7.00 ± 0.11	-13.57 ± 0.21
-50.0	223.15	0.00448	57.4	0.063	0.532	1790 ± 280	7.49 ± 0.16	-13.90 ± 0.29

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Thermodynamic Data for the Oxidative Addition of Me_3SnCl to $[PtMe_2(py\text{-}n\text{-}pr)]$ in CD_2Cl_2

M.W. Pt(II) cpx. = 373.37 g mol^{-1}
M.W. Me_3SnCl = 199.25 g mol^{-1}
$n_{Sn\ tot}/n_{Pt\ tot}$ = 2.0 ± 0.05

mass Pt(II) cpx. = 5.0 ± 0.1 mg
Vol. CD_2Cl_2 = 0.6491 ± 0.0005 mL
Pt(II) $^2J_{PtH}$ = 87.54 ± 0.10 Hz

$[Pt]_{tot}$ = (2.063 ± 0.041) x 10^{-2} M
$[Sn]_{tot}$ = (4.13 ± 0.13) x 10^{-2} M
Pt(IV) $^2J_{PtH}$ = 55.9 ± 0.2 Hz

T (°C) ± 1.0	T (K) ± 1.0	T^{-1} (K^{-1}) ± 0.00002	$^2J_{PtH}$ (Hz) ±0.2	$\chi_{Pt(II)}$ ± 0.011	p_{Sn} ± 0.013	K_{eq} (L mol^{-1})	ln K_{eq}	ΔG (kJ mol^{-1})
31.0	304.15	0.00329	85.16	0.925	0.962	2.05 ± 0.27	0.72 ± 0.13	-1.82 ± 0.33
19.9	293.05	0.00341	84.08	0.891	0.945	3.15 ± 0.29	1.147 ± 0.094	-2.80 ± 0.23
15.0	288.15	0.00347	82.46	0.839	0.920	5.05 ± 0.35	1.617 ± 0.069	-3.88 ± 0.17
9.1	282.25	0.00354	80.84	0.788	0.894	7.29 ± 0.42	1.985 ± 0.057	-4.66 ± 0.14
4.0	277.15	0.00361	78.80	0.724	0.862	10.75 ± 0.54	2.375 ± 0.050	-5.47 ± 0.12
-2.1	271.05	0.00369	76.94	0.665	0.832	14.67 ± 0.68	2.687 ± 0.047	-6.06 ± 0.11
-7.5	265.65	0.00376	74.72	0.594	0.797	20.70 ± 0.92	3.032 ± 0.044	-6.70 ± 0.10
-12.5	260.65	0.00384	71.96	0.507	0.754	31.3 ± 1.4	3.442 ± 0.044	-7.46 ± 0.10
-18.0	255.15	0.00392	69.80	0.439	0.719	43.1 ± 1.9	3.763 ± 0.049	-7.98 ± 0.10
-30.0	243.15	0.00411	65.42	0.300	0.650	86.9 ± 4.3	4.465 ± 0.060	-9.03 ± 0.11
-40.0	233.15	0.00429	62.30	0.202	0.601	160 ± 9.5	5.07 ± 0.087	-9.84 ± 0.12
-50.0	223.15	0.00448	59.59	0.116	0.558	332 ± 29	5.80 ± 0.10	-10.77 ± 0.17

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Thermodynamic Data for the Oxidative Addition of Me_3SnCl to $[PtMe_2(paen\text{-}me_2)]$ in CD_2Cl_2

M.W. Pt(II) cpx. = 402.4 g mol^{-1}
M.W. Me_3SnCl = 199.25 g mol^{-1}
$n_{Sn\ tot}/n_{Pt\ tot}$ = 2.00 ± 0.05

mass Pt(II) cpx. = 5.1 ± 0.1 mg
Vol. CD_2Cl_2 = 0.6805 ± 0.0005 mL
Pt(II) $^2J_{PtH}$ = 87.84 ± 0.10 Hz

$[Pt]_{tot}$ = (1.863 ± 0.037) x 10^{-2} M
$[Sn]_{tot}$ = (3.73 ± 0.12) x 10^{-2} M
Pt(IV) $^2J_{PtH}$ = 54.8 ± 0.2 Hz

T (°C) ± 1.0	T (K) ± 1.0	T^{-1} (K^{-1}) ± 0.00002	$^2J_{PtH}$ (Hz) ±0.2	$\chi_{Pt(II)}$ ± 0.011	$\chi_{Sn\ free}$ ± 0.013	K_{eq} (L mol^{-1})	ln K_{eq}	ΔG (kJ mol^{-1})
31.0	304.15	0.00329	84.65	0.903	0.952	3.01 ± 0.30	1.10 ± 0.10	-2.79 ± 0.25
19.9	293.05	0.00341	82.50	0.838	0.919	5.63 ± 0.37	1.728 ± 0.066	-4.21 ± 0.16
15.0	288.15	0.00347	81.02	0.794	0.897	7.79 ± 0.44	2.052 ± 0.056	-4.92 ± 0.14
9.1	282.25	0.00354	79.43	0.745	0.873	10.50 ± 0.53	2.352 ± 0.050	-5.52 ± 0.12
4.0	277.15	0.00361	77.48	0.686	0.843	14.54 ± 0.67	2.677 ± 0.046	-6.17 ± 0.11
-2.1	271.05	0.00369	75.11	0.615	0.807	20.84 ± 0.91	3.037 ± 0.044	-6.84 ± 0.10
-7.5	265.65	0.00376	72.80	0.545	0.772	29.0 ± 1.3	3.369 ± 0.043	-7.44 ± 0.10
-12.5	260.65	0.00384	70.61	0.479	0.739	39.6 ± 1.7	3.678 ± 0.043	-7.97 ± 0.10
-18.0	255.15	0.00392	68.12	0.403	0.702	56.6 ± 2.5	4.037 ± 0.044	-8.56 ± 0.10
-30.0	243.15	0.00411	64.10	0.281	0.641	107.0 ± 5.3	4.672 ± 0.049	-9.45 ± 0.11
-40.0	233.15	0.00429	60.80	0.182	0.591	204 ± 13	5.322 ± 0.062	-10.32 ± 0.13

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Thermodynamic Data for the Oxidative Addition of Me_3SnCl to $[PtMe_2(bipy\text{-}^tbu_2)]$ in Acetone-d_6

M.W. Pt(II) cpx. = 493.55 g mol^{-1}
M.W. Me_3SnCl = 199.25 g mol^{-1}
$n_{Sn\ tot}/n_{Pt\ tot}$ = 2.0 ± 0.05

mass Pt(IV) cpx. = 10.0 ± 0.1 mg
Vol. acetone-d_6 = 0.7493 ± 0.0005 mL
Pt(II) $^2J_{PtH}$ = 86.2 ± 0.10 Hz

$[Pt]_{tot}$ = (1.496 ± 0.015) x 10^{-2} M
$[Sn]_{tot}$ = (2.992 ± 0.030) x 10^{-2} M
Pt(IV) $^2J_{PtH}$ = 58.7 ± 0.20 Hz

T (°C) ± 1.0	T (K) ± 1.0	T^{-1} (K^{-1}) ± 0.0002	$^2J_{PtH}$ (Hz) ±0.2	$\chi_{Pt(II)}$ ± 0.013	p_{Sn} ± 0.009	K_{eq} (L mol^{-1})	ln K_{eq}	ΔG (kJ mol^{-1})
30.0	303.15	0.00330	84.06	0.922	0.961	2.93 ± 0.42	1.08 ± 0.21	-2.71 ± 0.36
25.1	298.25	0.00335	83.29	0.894	0.947	4.18 ± 0.45	1.43 ± 0.16	-3.54 ± 0.27
19.9	293.05	0.00341	82.69	0.872	0.936	5.22 ± 0.48	1.65 ± 0.11	-4.03 ± 0.22
15.0	288.15	0.00347	82.07	0.850	0.925	6.39 ± 0.51	1.854 ± 0.09	-4.44 ± 0.19
9.1	282.25	0.00354	80.76	0.802	0.901	9.15 ± 0.59	2.213 ± 0.08	-5.19 ± 0.15
4.0	277.15	0.00361	79.67	0.763	0.881	11.81 ± 0.67	2.469 ± 0.07	-5.69 ± 0.13
-2.1	271.05	0.00369	78.63	0.725	0.862	14.72 ± 0.76	2.689 ± 0.07	-6.06 ± 0.12
-7.5	265.65	0.00376	77.46	0.682	0.841	18.51 ± 0.89	2.918 ± 0.06	-6.45 ± 0.11
-12.5	260.65	0.00384	76.15	0.635	0.817	23.6 ± 1.1	3.159 ± 0.06	-6.85 ± 0.10
-18.0	255.15	0.00392	75.0	0.593	0.796	28.8 ± 1.3	3.362 ± 0.06	-7.13 ± 0.10
-23.9	249.25	0.00401	74.5	0.575	0.787	31.4 ± 1.4	3.448 ± 0.06	-7.15 ± 0.09
-30.0	243.15	0.00411	72.7	0.509	0.755	42.7 ± 1.9	3.754 ± 0.06	-7.59 ± 0.09
-35.0	238.15	0.00420	71.7	0.473	0.736	50.6 ± 2.3	3.924 ± 0.06	-7.77 ± 0.09
-40.0	233.15	0.00429	70.7	0.436	0.718	60.1 ± 2.7	4.096 ± 0.06	-7.94 ± 0.15

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Thermodynamic Data for the Oxidative Addition of Me_3SnCl to $[PtMe_2(bipy\text{-}^tbu_2)]$ in CD_3CN

M.W. Pt(II) cpx. = 493.55 g mol^{-1}
M.W. Me_3SnCl = 199.25 g mol^{-1}
$n_{Sn\ tot}/n_{Pt\ tot}$ = 2.00 ± 0.05

mass Pt(IV) cpx. = 10.0 ± 0.1 mg
Vol. CD_3CN = 0.7006 ± 0.0005 mL
Pt(II) $^2J_{PtH}$ = 85.43 ± 0.10 Hz

$[Pt]_{tot}$ = (1.600 ± 0.016) x 10^{-2} M
$[Sn]_{tot}$ = (3.200 ± 0.0086) x 10^{-2} M
Pt(IV) $^2J_{PtH}$ = 58.3 ± 0.20 Hz

T (°C) ± 1.0	T (K) ± 1.0	T^{-1} (K^{-1}) ± 0.00002	$^2J_{PtH}$ (Hz) ±0.2	$\chi_{Pt(II)}$ ± 0.012	p_{Sn} ± 0.012	K_{eq} (L mol^{-1})	ln K_{eq}	ΔG (kJ mol^{-1})
39.0	312.15	0.00320	80.3	0.811	0.905	8.05 ± 0.54	2.085 ± 0.067	-5.41 ± 0.17
34.4	307.55	0.00325	79.1	0.767	0.883	10.77 ± 0.62	2.376 ± 0.058	-6.08 ± 0.15
30.0	303.15	0.00330	78.0	0.726	0.863	13.66 ± 0.72	2.614 ± 0.053	-6.59 ± 0.13
25.1	298.25	0.00335	76.6	0.675	0.837	18.01 ± 0.87	2.891 ± 0.048	-7.17 ± 0.12
19.9	293.05	0.00341	75.2	0.623	0.811	23.3 ± 1.1	3.149 ± 0.046	-7.67 ± 0.11
17.5	290.65	0.00344	73.8	0.571	0.786	29.8 + 1.3	3.396 ± 0.044	-8.21 ± 0.11
9.1	282.25	0.00354	71.9	0.501	0.751	41.4 ± 1.8	3.724 ± 0.044	-8.74 ± 0.11
4.0	277.15	0.00361	70.6	0.453	0.727	51.9 ± 2.3	3.948 ± 0.044	-9.10 ± 0.11
-2.1	271.05	0.00369	69.3	0.405	0.703	65.2 ± 3.0	4.178 ± 0.045	-9.41 ± 0.11
-7.5	265.65	0.00376	67.9	0.354	0.677	84.3 ± 4.0	4.434 ± 0.047	-9.79 ± 0.11
-12.5	260.65	0.00384	66.8	0.313	0.657	104.3 ± 5.2	4.647 ± 0.050	-10.07 ± 0.11
-18.0	255.15	0.00392	66.6	0.306	0.653	108.6 ± 5.5	4.687 ± 0.050	-9.94 ± 0.11
-23.9	249.25	0.00401	65.6	0.269	0.635	133.8 ± 7.2	4.896 ± 0.054	-10.15 ± 0.12
-30.0	243.15	0.00411	65.3	0.258	0.629	142.9 ± 7.9	4.962 ± 0.055	-10.03 ± 0.12
-35.0	238.15	0.00420	64.4	0.225	0.612	176 ± 10.5	5.170 ± 0.060	-10.24 ± 0.13
-40.0	233.15	0.00429	64.1	0.214	0.607	189 ± 12	5.244 ± 0.062	-10.16 ± 0.13
-45.9	227.25	0.00440	63.1	0.177	0.588	247 ± 17	5.510 ± 0.070	-10.41 ± 0.14

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Thermodynamic Data for the Oxidative Addition of Me_3SnBr to $[PtMe_2(bipy\text{-}^tbu_2)]$ in CD_2Cl_2

M.W. Pt(II) cpx. = 493.55 g mol^{-1}
M.W. Me_3SnCl = 243.7 g mol^{-1}
$n_{Sn\ tot}/n_{Pt\ tot}$ = 1.2 ± 0.05

mass Pt(IV) cpx. = 1.5 ± 0.1 mg
Vol. CD_2Cl_2 = 0.6025 ± 0.0005 mL
Pt(II) $^2J_{PtH}$ = 85.64 ± 0.10 Hz

$[Pt]_{tot}$ = (3.17 ± 0.21) x 10^{-3} M
$[Sn]_{tot}$ = (3.80 ± 0.030) x 10^{-2} M
Pt(IV) $^2J_{PtH}$ = 57.9 ± 0.20 Hz

T (°C) ± 1.0	T (K) ± 1.0	T^{-1} (K^{-1}) ± 0.0002	$^2J_{PtH}$ (Hz) ±0.2	$\chi_{Pt(II)}$ ± 0.011	p_{Sn} ± 0.030	K_{eq} (L mol^{-1})	ln K_{eq}	ΔG (kJ mol^{-1})
34.4	307.55	0.00325	75.5	0.634	0.695	218 ± 19	5.384 ± 0.089	-13.77 ± 0.23
30.0	303.15	0.00330	74.2	0.588	0.656	281 ± 25	5.640 ± 0.089	-14.21 ± 0.23
25.1	298.25	0.00335	72.7	0.534	0.611	376 ± 34	5.930 ± 0.090	-14.71 ± 0.23
19.9	293.05	0.00341	69.5	0.418	0.515	711 ± 68	6.566 ± 0.096	-16.00 ± 0.24
15.0	288.15	0.00347	68.0	0.364	0.470	977 ± 98	6.89 ± 0.10	-16.49 ± 0.25
9.1	282.25	0.00354	67.6	0.350	0.458	1070 ± 110	6.97 ± 0.10	-16.36 ± 0.25
4.0	277.15	0.00361	65.9	0.288	0.407	1600 ± 180	7.38 ± 0.11	-16.99 ± 0.26
-2.1	271.05	0.00369	65.6	0.278	0.398	1720 ± 190	7.45 ± 0.11	-16.79 ± 0.26
-12.5	260.65	0.00384	62.9	0.180	0.317	3776 ± 520	8.24 ± 0.14	-17.85 ± 0.31
-23.9	249.25	0.00401	61.6	0.133	0.278	6150 ± 980	8.73 ± 0.16	-18.08 ± 0.34
-45.9	227.25	0.00440	59.0	0.040	0.200	32000 ± 10000	10.37 ± 0.32	-19.59 ± 0.61

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Thermodynamic Data for the Oxidative Addition of Me_3SnBr to $[PtMe_2(bipy\text{-}^tbu_2)]$ in CD_3CN

M.W. Pt(II) cpx. = 493.55 g mol^{-1}
M.W. Me_3SnCl = 243.7 g mol^{-1}
$n_{Sn\ tot}/n_{Pt\ tot}$ = 1.00 ± 0.05

mass Pt(IV) cpx. = 1.6 ± 0.1 mg
Vol. CD_3CN = 0.6653 ± 0.0005 mL
Pt(II) $^2J_{PtH}$ = 85.43 ± 0.10 Hz

$[Pt]_{tot}$ = (3.26 ± 0.20) x 10^{-3} M
$[Sn]_{tot}$ = (3.26 ± 0.26) x 10^{-3} M
Pt(IV) $^2J_{PtH}$ = 58.4 ± 0.20 Hz

T (°C) ± 1.0	T (K) ± 1.0	T^{-1} (K^{-1}) ± 0.0002	$^2J_{PtH}$ (Hz) ±0.2	$\chi_{Pt(II)}$ ± 0.012	p_{Sn} ± 0.040	K_{eq} (L mol^{-1})	ln K_{eq}	ΔG (kJ mol^{-1})
42.7	315.85	0.00317	77.0	0.688	0.688	202 ± 19	5.308 ± 0.094	-13.94 ± 0.25
34.4	307.55	0.00325	74.6	0.599	0.599	342 ± 33	5.835 ± 0.095	-14.92 ± 0.25
25.1	298.25	0.00335	71.9	0.499	0.499	615 ± 63	6.42 ± 0.10	-15.92 ± 0.26
15.0	288.15	0.00347	69.4	0.407	0.407	1100 ± 130	7.00 ± 0.12	-16.77 ± 0.29
4.0	277.15	0.00361	67.3	0.329	0.329	1900 ± 270	7.55 + 0.14	-17.39 ± 0.33
-7.5	265.65	0.00376	65.7	0.270	0.270	3070 ± 520	8.03 ± 0.17	-17.73 ± 0.38
-18.0	255.15	0.00392	64.2	0.215	0.215	5200 ± 1100	8.56 ± 0.22	-18.16 ± 0.46
-30.0	243.15	0.00411	63.6	0.192	0.192	6700 ± 1600	8.81 ± 0.24	-17.81 ± 0.49
-40.0	233.15	0.00429	62.0	0.133	0.133	15000 ± 5400	9.61 ± 0.36	-18.64 ± 0.70

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Thermodynamic Data for the Oxidative Addition of Me_3SnI to $[PtMe_2(bipy\text{-}^tbu_2)]$ in CD_2Cl_2

M.W. Pt(II) cpx. = 493.55 g mol^{-1}
M.W. Me_3SnCl = 290.7 g mol^{-1}
$n_{Sn\ tot}/n_{Pt\ tot}$ = 1.20 ± 0.05

mass Pt(IV) cpx. = 1.2 ± 0.1 mg
Vol. CD_2Cl_2 = 0.7151 ± 0.0005 mL
Pt(II) $^2J_{PtH}$ = 85.64 ± 0.10 Hz

$[Pt]_{tot}$ = (1.99 ± 0.16) x 10^{-3} M
$[Sn]_{tot}$ = (2.39 ± 0.22) x 10^{-3} M
Pt(IV) $^2J_{PtH}$ = 59.65 ± 0.10 Hz

T (°C) ± 1.0	T (K) ± 1.0	T^{-1} (K^{-1}) ± 0.0002	$^2J_{PtH}$ (Hz) ±0.10	$\chi_{Pt(II)}$ ± 0.005	p_{Sn} ± 0.035	$K_{eq}/10^4$ (L mol^{-1})	ln K_{eq}	ΔG (kJ mol^{-1})
30.0	303.15	0.00330	61.75	0.083	0.235	1.97 ± 0.35	9.89 ± 0.18	-24.93 ± 0.46
25.5	298.65	0.00335	61.26	0.064	0.220	28.0 ± 0.55	10.24 ± 0.20	-25.42 ± 0.50
19.9	293.05	0.00341	60.71	0.043	0.202	4.6 ± 1.1	10.75 ± 0.23	-26.18 ± 0.57
9.1	282.25	0.00354	60.06	0.018	0.181	12.8 ± 4.8	11.76 ± 0.37	-27.60 ± 0.88
-2.1	271.05	0.00369	59.89	0.011	0.176	21 ± 11	12.26 ± 0.54	-27.6 ± 1.2
-12.5	260.65	0.00384	59.73	0.005	0.171	49 ± 54	13.1 ± 1.1	-28.4 ± 2.4
-23.9	249.25	0.00401	59.67	0.003	0.169	92 ± 190	13.7 ± 2.0	-28.5 ± 4.2

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Thermodynamic Data for the Oxidative Addition of Me_3SnI to $[PtMe_2(bipy\text{-}^tbu_2)]$ in CD_3CN

M.W. Pt(II) cpx. = 493.55 g mol^{-1}
M.W. Me_3SnCl = 290.7 g mol^{-1}
$n_{Sn\ tot}/n_{Pt\ tot}$ = 1.20 ± 0.05

mass Pt(IV) cpx. = 1.6 ± 0.1 mg
Vol. CD_3CN = 0.6903 ± 0.0005 mL
Pt(II) $^2J_{PtH}$ = 85.43 ± 0.10 Hz

$[Pt]_{tot}$ = (2.75 ± 0.18) x 10^{-3} M
$[Sn]_{tot}$ = (3.30 ± 0.25) x 10^{-3} M
Pt(IV) $^2J_{PtH}$ = 59.32 ± 0.10 Hz

T (°C) ± 1.0	T (K) ± 1.0	T^{-1} (K^{-1}) ± 0.0002	$^2J_{PtH}$ (Hz) ±0.10	$\chi_{Pt(II)}$ ± 0.006	p_{Sn} ± 0.035	$K_{eq}/10^3$ (L mol^{-1})	ln K_{eq}	ΔG (kJ mol^{-1})
60.0	333.15	0.00300	64.0	0.179	0.316	4.39 ± 0.54	8.39 ± 0.12	-23.23 ± 0.35
51.0	324.15	0.00308	62.6	0.126	0.271	7.8 ± 1.1	8.96 ± 0.14	-24.14 ± 0.40
42.7	315.85	0.00317	61.2	0.072	0.227	17.2 ± 3.1	9.75 ± 0.18	-25.61 ± 0.48
34.4	307.55	0.00325	60.5	0.045	0.204	31.3 ± 6.8	10.35 ± 0.22	-26.47 ± 0.56
25.1	298.25	0.00335	60.1	0.030	0.192	51 ± 14	10.85 ± 0.27	-26.89 ± 0.67
15.0	288.15	0.00347	60.0	0.026	0.188	60 ± 17	11.00 ± 0.29	-26.36 ± 0.69

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Thermodynamic Data for the Oxidative Addition of Me_3GeCl to $[PtMe_2(bipy\text{-}^tbu_2)]$ in CD_2Cl_2

M.W. Pt(II) cpx. = 493.55 g mol^{-1}
M.W. Me_3GeCl = 153.15 g mol^{-1}
$n_{Ge\ tot}/n_{Pt\ tot}$ = 1.0 ± 0.05

mass Pt(II) cpx. = 10.0 ± 0.1 mg
Vol. CD_2Cl_2 = 0.6500 ± 0.0005 mL

$[Pt]_{tot}$ = (3.12 ± 0.04) x 10^{-2} M
$[Ge]_{tot}$ = (3.12 ± 0.04) x 10^{-2} M

T (°C) ± 1.0	T (K) ± 1.0	T^{-1} (K^{-1}) ± 0.0002	I_{Ge} ± 5%	I_{GePt} ± 5%	$\chi_{Pt(II)}$ ± 0.030	K_{eq} (L mol^{-1})	ln K_{eq} ± 0.088	ΔG (kJ mol^{-1})
19.9	293.05	0.00341	101.5	45.60	0.690	20.9 ± 1.8	3.039	-7.40 ± 0.21
9.1	282.25	0.00354	123	116.70	0.513	59.3 ± 5.2	4.083	-9.58 ± 0.21
-2.1	271.05	0.00369	73.9	130.40	0.362	156 ± 14	5.053	-11.39 ± 0.20
-12.5	260.65	0.00384	57.1	141.70	0.287	277 ± 24	5.625	-12.19 ± 0.20
-23.9	249.25	0.00401	42.1	172.80	0.196	672 ± 59	6.510	-13.49 ± 0.19
-45.9	227.25	0.00440	19.9	151.10	0.116	2090 ± 180	7.646	-14.45 ± 0.18

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Kinetic Data for the Reductive Elimination of Me_3SnCl from $[PtClMe_2(Me_3Sn)(bipy\text{-}^tbu_2)]$ in Toluene-d_8

M.W. Pt(II) cpx. = 493.55 g mol^{-1}
M.W. Me_3SnCl = 199.25 g mol^{-1}
$n_{Sn\ tot}/n_{Pt\ tot} = 2.0 \pm 0.1$
$\delta\nu = 115.5 \pm 2.0$ Hz

mass Pt(IV) cpx. = 3.5 ± 0.1 mg
Vol. toluene-d_8 = 0.7192 ± 0.0005 mL
Pt(II) $^2J_{PtH}$ = 85.7 ± 0.1 Hz
W_0 = 2.12 ± 0.05 Hz

$[Pt]_{tot} = (5.45 \pm 0.16) \times 10^{-3}$ M
$[Sn]_{tot} = (1.09 \pm 0.041) \times 10^{-2}$ M
Pt(IV) $^2J_{PtH}$ = 55.5 ± 0.2 Hz

T (°C) ± 1.0	T (K) ± 1.0	T^{-1} (K^{-1}) ± 0.0002	p_{Sn} ± 0.007	$W_{1/2}$ (Hz) ± 5%	k_{red} (s^{-1})	ln (k_{red}/T)	$\Delta G^{\ddagger}_{red}$ (kJ mol^{-1})
30.0	303.15	0.00330	0.981	2.27	22000 ± 22000	4.3 ± 1.0	49.1 ± 2.5
20.7	293.85	0.00340	0.966	2.26	10700 ± 4600	3.60 ± 0.43	49.3 ± 1.1
15.0	288.15	0.00347	0.946	3.33	6700 ± 1700	3.15 ± 0.25	49.37 ± 0.63
9.1	282.25	0.00354	0.934	4.53	3930 ± 780	2.63 ± 0.20	49.58 ± 0.50
4.0	277.15	0.00361	0.899	6.51	3020 ± 430	2.39 ± 0.14	49.25 ± 0.38
-2.1	271.05	0.00369	0.869	9.72	2080 ± 250	2.04 ± 0.12	48.95 ± 0.33
-7.5	265.65	0.00376	0.827	15.66	1370 ± 140	1.64 ± 0.10	48.86 ± 0.30

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Kinetic Data for the Reductive Elimination of Me_3SnCl from $[PtClMe_2(Me_3Sn)(bipy\text{-}^tbu_2)]$ in CD_2Cl_2

M.W. Pt(II) cpx. = 493.55 g mol^{-1}
M.W. Me_3SnCl = 199.25 g mol^{-1}
$n_{Sn\ tot}/n_{Pt\ tot}$ = 2.0 ± 0.05
$\delta\nu$ = 227.2 ± 2.0 Hz

mass Pt(IV) cpx. = 5.0 ± 0.1 mg
Vol. CD_2Cl_2 = 0.7175 ± 0.0005 mL
Pt(II) $^2J_{PtH}$ = 85.64 ± 0.10 Hz
W_0 = 1.5 ± 0.1 Hz

$[Pt]_{tot}$ = (7.81 ± 0.16) x 10^{-3} M
$[Sn]_{tot}$ = (1.562 ± 0.050) x 10^{-2} M
Pt(IV) $^2J_{PtH}$ = 55.5 ± 0.30 Hz

T (°C) ± 1.0	T (K) ± 1.0	T^{-1} (K^{-1}) ± 0.0002	p_{Sn} ± 0.014	$W_{1/2}$ (Hz) ± 5%	k_{red} (s^{-1})	ln (k_{red}/T)	$\Delta G^{\ddagger}_{red}$ (kJ mol^{-1})
25.1	298.25	0.00335	0.877	2.28	79000 ± 17000	5.58 ± 0.33	45.09 ± 0.21
19.9	293.05	0.00341	0.847	2.62	64000 ± 11000	5.38 ± 0.24	44.78 ± 0.17
15.0	288.15	0.00347	0.815	3.34	43300 ± 7400	5.01 ± 0.17	44.91 ± 0.13
9.1	282.25	0.00354	0.782	4.27	31200 ± 4200	4.71 ± 0.13	44.71 ± 0.11
4.0	277.15	0.00361	0.747	5.51	22800 ± 2600	4.41 ± 0.11	44.58 ± 0.09
-2.1	271.05	0.00369	0.711	7.46	15900 ± 1600	4.07 ± 0.10	44.37 ± 0.08
-7.5	265.65	0.00376	0.678	10.04	11200 ± 1000	3.75 ± 0.09	44.20 ± 0.08
-12.5	260.65	0.00384	0.646	13.92	7720 ± 640	3.39 ± 0.08	44.15 ± 0.07
-18.0	255.15	0.00392	0.616	20.19	5060 ± 400	2.99 ± 0.08	44.07 ± 0.07
-23.9	249.25	0.00401	0.595	33.23	2930 ± 220	2.46 ± 0.08	44.13 ± 0.07
-30.0	243.15	0.00411	0.571	53.98	1730 ± 130	1.96 ± 0.07	44.07 ± 0.07
-35.0	238.15	0.00420	0.558	79.49	1145 ± 84	1.57 ± 0.07	43.94 ± 0.07
-40.0	233.15	0.00429	0.548	120.8	738 ± 54	1.15 ± 0.07	43.82 ± 0.07
-50.0	223.15	0.00448	0.532	227.2	380 ± 27	0.53 ± 0.07	43.09 ± 0.07
-62.0	211.15	0.00474	0.500	35.85	120.8 ± 5.1	-0.56 ± 0.04	42.69 ± 0.04
-67.4	205.75	0.00486	0.500	16.61	50.4 ± 2.3	-1.41 ± 0.05	43.05 ± 0.04
-72.0	201.15	0.00497	0.500	9.55	26.3 ± 1.4	-2.03 ± 0.05	43.14 ± 0.04
-77.0	196.15	0.00510	0.500	7.25	18.3 ± 1.1	-2.37 ± 0.06	42.62 ± 0.05

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Kinetic Data for the Reductive Elimination of Me_3SnCl from $[PtClMe_2(Me_3Sn)(py\text{-}n\text{-}pr)]$ in CD_2Cl_2

M.W. Pt(II) cpx. = 373.37 g mol^{-1}
M.W. Me_3SnCl = 199.25 g mol^{-1}
$n_{Sn\ tot}/n_{Pt\ tot}$ = 2.0 ± 0.05
$\delta\nu$ = 219.4 ± 2.0 Hz

mass Pt(II) cpx. = 5.0 ± 0.1 mg
Vol. CD_2Cl_2 = 0.6491 ± 0.0005 mL
Pt(II) $^2J_{PtH}$ = 87.54 ± 0.10 Hz
W_0 = 2.3 ± 0.1 Hz

$[Pt]_{tot}$ = (2.063 ± 0.041) x 10^{-2} M
$[Sn]_{tot}$ = (4.13 ± 0.13) x 10^{-2} M
Pt(IV) $^2J_{PtH}$ = 55.9 ± 0.20 Hz

T (°C) ± 1.0	T (K) ± 1.0	T^{-1} (K^{-1}) ± 0.00002	p_{Sn} ± 0.013	$W_{1/2}$ (Hz) ± 5%	k_{red} (s^{-1})	ln (k_{red}/T)	$\Delta G^{\ddagger}_{red}$ (kJ mol^{-1})
19.9	293.05	0.00341	0.945	2.66	82000 ± 41000	5.64 ± 0.50	44.2 ± 1.2
15.0	288.15	0.00347	0.920	3.57	32300 ± 6800	4.72 ± 0.21	45.61 ± 0.53
9.1	282.25	0.00354	0.894	3.60	39300 ± 7500	4.94 ± 0.19	44.17 ± 0.48
4.0	277.15	0.00361	0.862	4.32	30700 ± 4400	4.71 ± 0.14	43.90 ± 0.37
-2.1	271.05	0.00369	0.832	5.42	22500 ± 2600	4.42 ± 0.12	43.58 ± 0.31
-7.5	265.65	0.00376	0.797	7.63	14600 ± 1400	4.01 ± 0.10	43.62 ± 0.28
-12.5	260.65	0.00384	0.754	8.67	13300 ± 1200	3.93 ± 0.09	42.97 ± 0.26
-18.0	255.15	0.00392	0.719	11.17	9900 ± 810	3.66 ± 0.08	42.64 ± 0.25
-30.0	243.15	0.00411	0.650	20.21	4990 ± 370	3.02 ± 0.07	41.92 ± 0.23
-40.0	233.15	0.00429	0.601	46.20	1990 ± 140	2.14 ± 0.07	41.90 ± 0.23
-50.0	223.15	0.00448	0.558	98.31	867 ± 57	1.36 ± 0.07	41.56 ± 0.23
-62.0	211.15	0.00474	0.549	200.0	416 ± 27	0.68 ± 0.07	40.52 ± 0.23
-72.0	201.15	0.00497	0.539	26.06	87.3 ± 6.0	-0.83 ± 0.07	41.13 ± 0.24
-77.0	196.15	0.00510	0.523	13.39	38.2 ± 2.8	-1.64 ± 0.05	41.41 ± 0.25
-82.0	191.15	0.00523	0.520	8.02	19.5 ± 1.2	-2.28 ± 0.07	41.39 ± 0.24
-92.5	180.65	0.00554	0.507	5.08	9.00 ± 0.88	-3.00 ± 0.08	40.19 ± 0.25

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Kinetic Data for the Reductive Elimination of Me_3SnCl from $[PtClMe_2(Me_3Sn)(paen\text{-}me_2)]$ in CD_2Cl_2

M.W. Pt(II) cpx. = 402.4 g mol^{-1}
M.W. Me_3SnCl = 199.25 g mol^{-1}
$n_{Sn\ tot}/n_{Pt\ tot}$ = 2.0 ± 0.05
$\delta\nu$ = 192 ± 2.0 Hz

mass Pt(II) cpx. = 5.1 ± 0.1 mg
Vol. CD_2Cl_2 = 0.6805 ± 0.0005 mL
Pt(II) $^2J_{PtH}$ = 87.84 ± 0.10 Hz
W_0 = 1.9 ± 0.1 Hz

$[Pt]_{tot}$ = (1.863 ± 0.073) x 10^{-2} M
$[Sn]_{tot}$ = (3.73 ± 0.17) x 10^{-2} M
Pt(IV) $^2J_{PtH}$ = 54.8 ± 0.20 Hz

T (°C) ± 1.0	T (K) ± 1.0	T^{-1} (K^{-1}) ± 0.00002	p_{Sn} ± 0.013	$W_{1/2}$ (Hz) ± 5%	k_{red} (s^{-1})	ln (k_{red}/T)	$\Delta G^{\ddagger}_{red}$ (kJ mol^{-1})
31.0	304.15	0.00329	0.952	2.16	78000 ± 47000	5.55 ± 0.60	46.1 ± 1.5
19.9	293.05	0.00341	0.919	2.67	41000 ± 10000	4.94 ± 0.25	45.85 ± 0.64
15.0	288.15	0.00347	0.897	3.53	23600 ± 3800	4.41 ± 0.16	46.37 ± 0.42
9.1	282.25	0.00354	0.873	4.02	21200 ± 2900	4.32 ± 0.14	45.62 ± 0.36
4.0	277.15	0.00361	0.843	5.04	16400 ± 1900	4.08 ± 0.11	45.34 ± 0.31
-2.1	271.05	0.00369	0.807	6.58	12400 ± 1200	3.83 ± 0.09	44.92 ± 0.28
-7.5	265.65	0.00376	0.772	8.54	9470 ± 830	3.57 ± 0.08	44.58 ± 0.26
-12.5	260.65	0.00384	0.739	11.24	7070 ± 570	3.30 ± 0.08	44.34 ± 0.25
-18.0	255.15	0.00392	0.702	15.58	4970 ± 380	2.97 ± 0.07	44.10 ± 0.24
-30.0	243.15	0.00411	0.641	33.01	2200 ± 150	2.20 ± 0.07	43.58 ± 0.24
-40.0	233.15	0.00429	0.591	79.66	851 ± 57	1.29 ± 0.07	43.55 ± 0.23
-50.0	223.15	0.00448	0.569	200	326 ± 22	0.38 ± 0.07	43.38 ± 0.24
-62.0	211.15	0.00474	0.553	37.37	137.8 ± 9.3	-0.43 ± 0.07	42.46 ± 0.24
-67.4	205.75	0.00486	0.552	18.85	65.6 ± 4.6	-1.14 ± 0.08	42.60 ± 0.25
-72.0	201.15	0.00497	0.544	10.16	30.9 ± 2.3	-1.87 ± 0.05	42.87 ± 0.25
-82.0	191.15	0.00523	0.519	6.21	14.60 ± 0.74	-2.57 ± 0.04	41.85 ± 0.24

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Kinetic Data for the Reductive Elimination of Me_3SnCl from $[PtClMe_2(Me_3Sn)(bipy\text{-}^tbu_2)]$ in Acetone-d_6

M.W. Pt(II) cpx. = 493.55 g mol^{-1}
M.W. Me_3SnCl = 199.25 g mol^{-1}
$n_{Sn\ tot}/n_{Pt\ tot}$ = 2.00 ± 0.05
$\delta\nu$ = 295 ± 2.0 Hz

mass Pt(IV) cpx. = 10.0 ± 0.1 mg
Vol. Acetone-d_6 = 0.7493 ± 0.0005 mL
Pt(II) $^2J_{PtH}$ = 86.2 ± 0.10 Hz
W_0 = 0.90 ± 0.05 Hz

$[Pt]_{tot}$ = (1.496 ± 0.015) x 10^{-2} M
$[Sn]_{tot}$ = (2.992 ± 0.081) x 10^{-2} M
Pt(IV) $^2J_{PtH}$ = 58.7 ± 0.20 Hz

T (°C) ± 1.0	T (K) ± 1.0	T^{-1} (K^{-1}) ± 0.0002	p_{Sn} ± 0.011	$W_{1/2}$ (Hz) ± 5%	k_{red} (s^{-1})	ln (k_{red}/T)	$\Delta G^{\ddagger}_{red}$ (kJ mol^{-1})
30.0	303.15	0.00330	0.961	1.00	390000 ± 300000	7.17 ± 0.77	41.8 ± 2.0
25.1	298.25	0.00335	0.947	1.12	236000 ± 97000	6.67 ± 0.41	42.37 ± 1.0
19.9	293.05	0.00341	0.936	1.29	157000 ± 45000	6.28 ± 0.29	42.58 ± 0.71
15.0	288.15	0.00347	0.925	1.83	76000 ± 15000	5.57 ± 0.20	43.58 ± 0.51
9.1	282.25	0.00354	0.901	1.81	97000 ± 17000	5.83 ± 0.17	42.06 ± 0.43
4.0	277.15	0.00361	0.881	2.51	62600 ± 8600	5.42 ± 0.14	42.26 ± 0.35
-2.1	271.05	0.00369	0.862	3.58	41800 ± 4900	5.04 ± 0.12	42.19 ± 0.31
-7.5	265.65	0.00376	0.841	5.02	29800 ± 3100	4.72 ± 0.10	42.05 ± 0.28
-12.5	260.65	0.00384	0.817	8.60	17300 ± 1600	4.20 ± 0.09	42.39 ± 0.27
-18.0	255.15	0.00392	0.796	13.95	10820 ± 940	3.75 ± 0.09	42.45 ± 0.25
-23.9	249.25	0.00401	0.787	24.54	6100 ± 510	3.20 ± 0.08	42.61 ± 0.25
-30.0	243.15	0.00411	0.755	41.76	3740 ± 390	2.73 ± 0.08	42.51 ± 0.24
-35.0	238.15	0.00420	0.736	71.56	2210 ± 170	2.23 ± 0.07	42.63 ± 0.24
-40.0	233.15	0.00429	0.718	98.01	1640 ± 120	1.95 ± 0.07	42.28 ± 0.24
-45.9	227.25	0.00440	0.718	292	547 ± 41	0.88 ± 0.04	43.23 ± 0.24
-50.0	223.15	0.00448	0.718	42.45	333 ± 12	0.40 ± 0.04	43.34 ± 0.21
-57.0	216.15	0.00463	0.718	21.58	165.6 ± 5.8	-0.27 ± 0.04	43.18 ± 0.22
-62.0	211.15	0.00474	0.718	13.53	101.1 ± 3.6	-0.74 ± 0.04	43.00 ± 0.22
-67.4	205.75	0.00486	0.718	8.85	63.7 ± 2.4	-1.17 ± 0.04	42.65 ± 0.22

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Kinetic Data for the Reductive Elimination of Me_3SnCl from $[PtClMe_2(Me_3Sn)(bipy\text{-}^tbu_2)]$ in CD_3CN

M.W. Pt(II) cpx. = 493.55 g mol^{-1}
M.W. Me_3SnCl = 199.25 g mol^{-1}
$n_{Sn\ tot}/n_{Pt\ tot}$ = 2.0 ± 0.1
$\delta\nu$ = 295 ± 2.0 Hz

mass Pt(IV) cpx. = 10.0 ± 0.1 mg
Vol. CD_3CN = 0.7006 ± 0.0005 mL
Pt(II) $^2J_{PtH}$ = 85.43 ± 0.10 Hz
W_0 = 1.0 ± 0.1 Hz

$[Pt]_{tot}$ = (1.600 ± 0.016) x 10^{-2} M
$[Sn]_{tot}$ = (3.20 ± 0.0086) x 10^{-2} M
Pt(IV) $^2J_{PtH}$ = 58.3 ± 0.20 Hz

T (°C) ± 1.0	T (K) ± 1.0	T^{-1} (K^{-1}) ± 0.00002	p_{Sn} ± 0.012	$W_{1/2}$ (Hz) ± 5%	k_{red} (s^{-1})	ln (k_{red}/T)	$\Delta G^{\ddagger}_{red}$ (kJ mol^{-1})
17.5	290.65	0.00344	0.786	3.09	67800 ± 7500	5.45 ± 0.11	44.24 ± 0.31
9.1	282.25	0.00354	0.751	5.38	34400 ± 3100	4.80 ± 0.09	44.49 ± 0.27
4.0	277.15	0.00361	0.727	7.04	25600 ± 2100	4.53 ± 0.08	44.32 ± 0.25
-2.1	271.05	0.00369	0.703	9.7	18100 ± 1400	4.20 ± 0.08	44.08 ± 0.25
-7.5	265.65	0.00376	0.677	13.8	12390 ± 930	3.84 ± 0.07	43.99 ± 0.24
-12.5	260.65	0.00384	0.657	19.74	8460 ± 610	3.48 ± 0.07	43.95 ± 0.24
-18.0	255.15	0.00392	0.653	30.66	5350 ± 380	3.04 ± 0.07	43.95 ± 0.24
-23.9	249.25	0.00401	0.635	46.77	3440 ± 240	2.63 ± 0.07	43.79 ± 0.23
-30.0	243.15	0.00411	0.629	68.82	2320 ± 160	2.26 ± 0.07	43.47 ± 0.23
-35.0	238.15	0.00420	0.612	95.94	1640 ± 110	1.93 ± 0.07	43.22 ± 0.23
-40.0	233.15	0.00429	0.607	129.9	1204 ± 43	1.64 ± 0.04	42.88 ± 0.20

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Kinetic Data for the Reductive Elimination of Me_3SnBr from $[PtBrMe_2(Me_3Sn)(bipy\text{-}^tbu_2)]$ in CD_2Cl_2

M.W. Pt(II) cpx. = 493.55 g mol^{-1}
M.W. Me_3SnCl = 243.7 g mol^{-1}
$n_{Sn\ tot}/n_{Pt\ tot}$ = 2.00 ± 0.05
$\delta\nu$ = 300.5 ± 2.0 Hz

mass Pt(IV) cpx. = 15.0 ± 0.1 mg
Vol. CD_2Cl_2 = 0.6994 ± 0.0005 mL
Pt(II) $^2J_{PtH}$ = 85.64 ± 0.10 Hz
W_0 = 1.50 ± 0.05 Hz

$[Pt]_{tot}$ = (2.186 ± 0.015) x 10^{-2} M
$[Sn]_{tot}$ = (4.37 ± 0.11) x 10^{-2} M
Pt(IV) $^2J_{PtH}$ = 57.3 ± 0.20 Hz

T (°C) ± 1.0	T (K) ± 1.0	T^{-1} (K^{-1}) ± 0.0002	p_{Sn} ± 0.05	$W_{1/2}$ (Hz) ± 5%	k_{red} (s^{-1})	ln (k_{red}/T)	$\Delta G^{\ddagger}_{red}$ (kJ mol^{-1})
30.0	303.15	0.00330	0.558	15.99	10780 ± 750	3.57 ± 0.07	50.88 ± 0.24
25.1	298.25	0.00335	0.551	20.10	8320 ± 570	3.33 ± 0.06	50.66 ± 0.24
20.8	293.95	0.00340	0.544	25.41	6400 ± 440	3.08 ± 0.06	50.54 ± 0.24
15.0	288.15	0.00347	0.537	34.98	4520 ± 300	2.75 ± 0.06	50.32 ± 0.24
9.1	282.25	0.00354	0.530	47.56	3250 ± 220	2.44 ± 0.06	50.02 ± 0.24
4.0	277.15	0.00361	0.525	62.09	2450 ± 160	2.18 ± 0.06	49.73 ± 0.23
-2.1	271.05	0.00369	0.523	81.6	1850 ± 120	1.92 ± 0.06	49.22 ± 0.23
-7.5	265.65	0.00376	0.521	107.1	1397 ± 92	1.66 ± 0.06	48.81 ± 0.23
-12.5	260.65	0.00384	0.519	142.1	1046 ± 68	1.39 + 0.06	48.48 ± 0.23
-18.0	255.15	0.00392	0.518	280	491 ± 32	0.68 ± 0.06	47.83 ± 0.24
-35.0	238.15	0.00420	0.512	53.5	164 ± 11	-0.36 ± 0.06	46.75 ± 0.24
-40.0	233.15	0.00429	0.511	36.5	110.0 ± 7.3	-0.73 ± 0.06	46.26 ± 0.24
-45.9	227.25	0.00440	0.507	20.1	58.4 ± 4.0	-1.34 ± 0.07	46.57 ± 0.25
-50.0	223.15	0.00448	0.502	12.9	35.8 ± 2.5	-1.80 ± 0.07	45.93 ± 0.25
-57.0	216.15	0.00463	0.502	7.78	19.7 ± 1.5	-2.37 ± 0.08	45.87 ± 0.26
-62.0	211.15	0.00474	0.502	5.04	11.12 ± 0.93	-2.92 ± 0.09	43.70 ± 0.28
-67.4	205.75	0.00486	0.502	4.5	9.42 ± 0.82	-3.04 ± 0.10	41.90 ± 0.29

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Kinetic Data for the Reductive Elimination of Me_3SnBr from $[PtBrMe_2(Me_3Sn)(bipy\text{-}^tbu_2)]$ in CD_3CN

M.W. Pt(II) cpx. = 493.55 g mol^{-1}
M.W. Me_3SnCl = 243.7 g mol^{-1}
$n_{Sn\ tot}/n_{Pt\ tot}$ = 1.00 ± 0.05
$\delta\nu$ = 294 ± 2.0 Hz

mass Pt(IV) cpx. = 1.6 ± 0.1 mg
Vol. CD_3CN = 0.6653 ± 0.0005 mL
Pt(II) $^2J_{PtH}$ = 85.43 ± 0.10 Hz
W_0 = 4.0 ± 0.1 Hz

$[Pt]_{tot}$ = (3.26 ± 0.20) x 10^{-3} M
$[Sn]_{tot}$ = (3.26 ± 0.20) x 10^{-3} M
Pt(IV) $^2J_{PtH}$ = 58.4 ± 0.20 Hz

T (°C) ± 1.0	T (K) ± 1.0	T^{-1} (K^{-1}) ± 0.0002	p_{Sn} ± 0.40	$W_{1/2}$ (Hz) ± 5%	k_{red} (s^{-1})	ln (k_{red}/T)	$\Delta G^{\ddagger}_{red}$ (kJ mol^{-1})
42.7	315.85	0.00317	0.688	7.39	47300 ± 7000	5.01 ± 0.15	49.24 ± 0.42
34.4	307.55	0.00325	0.599	8.53	34500 ± 4400	4.72 ± 0.13	48.68 ± 0.37
25.1	298.25	0.00335	0.499	10.34	21400 ± 2400	4.27 ± 0.11	48.32 ± 0.32
15.0	288.15	0.00347	0.407	12.39	12700 ± 1300	3.79 ± 0.10	47.85 ± 0.30
4.0	277.15	0.00361	0.329	14.63	7430 ± 710	3.29 ± 0.10	47.17 ± 0.28
-7.5	265.65	0.00376	0.270	18.27	4050 ± 370	2.72 ± 0.09	46.46 ± 0.27
-18.0	255.15	0.00392	0.215	25.58	1820 ± 160	1.96 ± 0.09	46.23 ± 0.26
-30.0	243.15	0.00411	0.192	34.82	1053 ± 89	1.47 ± 0.08	45.07 ± 0.26
-40.0	233.15	0.00429	0.133	40.60	456 ± 38	0.67 ± 0.08	44.75 ± 0.26

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Kinetic Data for the Reductive Elimination of Me_3SnI from $[PtIMe_2(Me_3Sn)(bipy\text{-}^tbu_2)]$ in CD_2Cl_2

M.W. Pt(II) cpx. = 493.55 g mol^{-1}
M.W. Me_3SnI = 290.7 g mol^{-1}
$n_{Sn\ tot}/n_{Pt\ tot}$ = 2.00 ± 0.05
$\delta\nu$ = 374.6 ± 2.0 Hz

mass Pt(IV) cpx. = 9.2 ± 0.1 mg
Vol. CD_3CN = 0.5924 ± 0.0005 mL
Pt(II) $^2J_{PtH}$ = 85.65 ± 0.10 Hz
W_0 = 1.50 ± 0.1 Hz

$[Pt]_{tot}$ = (1.445 ± 0.016) x 10^{-2} M
$[Sn]_{tot}$ = (2.889 ± 0.078) x 10^{-2} M
Pt(IV) $^2J_{PtH}$ = 59.65 ± 0.10 Hz

T (°C) ± 1.0	T (K) ± 1.0	T^{-1} (K^{-1}) ± 0.0002	p_{Sn} ± 0.02	$W_{1/2}$ (Hz) ± 5%	k_{red} (s^{-1})	ln (k_{red}/T)	$\Delta G^{\ddagger}_{red}$ (kJ mol^{-1})
34.4	307.55	0.00325	0.50	49.30	4600 ± 290	2.71 ± 0.06	53.84 ± 0.24
30.0	303.15	0.00330	0.50	59.55	3790 ± 240	2.53 ± 0.06	53.52 ± 0.24
26.0	299.15	0.00334	0.50	73.69	3050 ± 190	2.32 ± 0.06	53.32 ± 0.24
19.9	293.05	0.00341	0.50	97.71	2290 ± 140	2.05 ± 0.06	52.88 ± 0.24
15.0	288.15	0.00347	0.50	134.39	1660 ± 100	1.75 ± 0.06	52.73 ± 0.24
9.1	282.25	0.00354	0.50	165.38	1342 ± 83	1.56 ± 0.06	52.10 ± 0.24
-2.1	271.05	0.00369	0.50	378	584 ± 36	0.77 ± 0.06	51.81 ± 0.24
-12.5	260.65	0.00384	0.50	70.16	216 ± 14	-0.19 ± 0.07	51.90 ± 0.25
-23.9	249.25	0.00401	0.50	27.61	82.0 ± 5.3	-1.11 ± 0.06	51.54 ± 0.25
-30.0	243.15	0.00411	0.50	16.17	46.1 ± 3.1	-1.66 ± 0.07	51.39 ± 0.26
-35.0	238.15	0.00420	0.05	9.00	23.6 ± 1.7	-2.31 ± 0.07	51.62 ± 0.27
-40.0	233.15	0.00429	0.50	4.85	10.52 ± 0.91	-3.10 ± 0.09	52.06 ± 0.29
-45.9	227.25	0.00440	0.50	2.67	3.68 ± 0.54	-4.12 ± 0.15	52.68 ± 0.37

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Kinetic Data for the Reductive Elimination of Me_3SnI from $[PtIMe_2(Me_3Sn)(bipy\text{-}^tbu_2)]$ in CD_3CN

M.W. Pt(II) cpx. = 493.55 g mol^{-1}
M.W. Me_3SnI = 290.7 g mol^{-1}
$n_{Sn\ tot}/n_{Pt\ tot}$ = 2.00 ± 0.05
$\delta\nu$ = 378.4 ± 2.0 Hz

mass Pt(IV) cpx. = 5.8 ± 0.1 mg
Vol. CD_3CN = 0.6923 ± 0.0005 mL
Pt(II) $^2J_{PtH}$ = 85.43 ± 0.10 Hz
W_0 = 1.00 ± 0.05 Hz

$[Pt]_{tot}$ = (7.79 ± 0.13) x 10^{-3} M
$[Sn]_{tot}$ = (1.559 ± 0.047) x 10^{-2} M
Pt(IV) $^2J_{PtH}$ = 59.32 ± 0.10 Hz

T (°C) ± 1.0	T (K) ± 1.0	T^{-1} (K^{-1}) ± 0.0002	p_{Sn} ± 0.02	$W_{1/2}$ (Hz) ± 5%	k_{red} (s^{-1})	ln (k_{red}/T)	$\Delta G^{\ddagger}_{red}$ (kJ mol^{-1})
30.0	303.15	0.00330	0.50	25.39	9230 ± 550	3.42 ± 0.06	51.28 ± 0.23
25.0	298.15	0.00335	0.50	44.96	5120 ± 300	2.84 ± 0.06	51.85 ± 0.23
19.9	293.05	0.00341	0.50	68.82	3320 ± 200	2.43 ± 0.06	51.98 ± 0.23
9.1	282.25	0.00354	0.50	156.1	1450 ± 85	1.64 ± 0.06	51.91 ± 0.24
-2.1	271.05	0.00369	0.50	378	597 ± 34	0.79 ± 0.06	51.76 ± 0.24
-12.5	260.65	0.00384	0.50	54.5	168.1 ± 9.9	-0.44 ± 0.06	52.44 ± 0.25
-18.0	255.15	0.00392	0.50	34.93	106.6 ± 6.3	-0.87 ± 0.06	52.25 ± 0.25
-23.9	249.25	0.00401	0.50	17.82	52.8 ± 3.2	-1.55 ± 0.06	52.45 ± 0.25
-30.0	243.15	0.00411	0.50	11.33	32.5 ± 2.0	-2.01 ± 0.07	52.10 ± 0.26
-35.0	238.15	0.00411	0.50	6.8	18.2 ± 2.6	-2.57 ± 0.07	52.13 ± 0.26

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Kinetic Data for the Reductive Elimination of Me_2SnCl_2 from $[PtClMe_2(Me_2SnCl)(bipy\text{-}^tbu_2)]$ in CD_2Cl_2

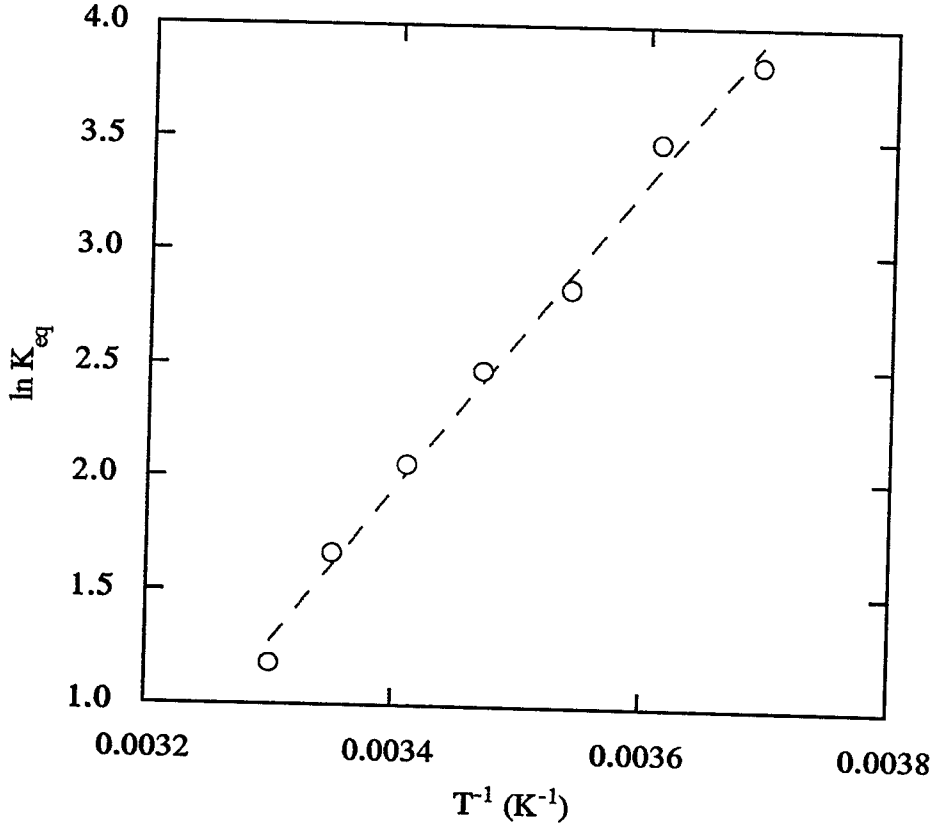
M.W. Pt(II) cpx. = 493.55 g mol^{-1}
M.W. Me_3SnCl = 219.67 g mol^{-1}
$n_{Sn\ tot}/n_{Pt\ tot}$ = 2.0 ± 0.1
$\delta\nu$ = 226.42 ± 2.0 Hz

mass Pt(II) cpx. = 11.2 ± 0.1 mg
Vol. CD_2Cl_2 = 0.7175 ± 0.0005 mL
Pt(II) $^2J_{PtH}$ = 85.64 ± 0.10 Hz
W_0 = 1.0 ± 0.1 Hz

$[Pt]_{tot}$ = (3.259 ± 0.029) x 10^{-2} M
$[Sn]_{tot}$ = (6.52 ± 0.33) x 10^{-2} M
Pt(IV) $^2J_{PtH}$ = 57.3 ± 0.30 Hz

T (°C) ± 1.0	T (K) ± 1.0	T^{-1} (K^{-1}) ± 0.0002	p_{Sn} ± 0.025	$W_{1/2}$ (Hz) ± 5%	k_{red} (s^{-1})	ln (k_{red}/T)	$\Delta G^{\ddagger}_{red}$ (kJ mol^{-1})
30.0	303.15	0.00330	0.558	54.12	167 ± 13	-0.597 ± 0.078	61.39 ± 0.29
25.1	298.25	0.00335	0.551	40.18	123.1 ± 9.7	-0.885 ± 0.078	61.11 ± 0.29
19.9	293.05	0.00341	0.544	28.85	87.5 ± 6.9	-1.209 ± 0.079	60.83 ± 0.29
15.0	288.15	0.00347	0.537	15.88	46.8 ± 3.7	-1.819 ± 0.080	61.28 ± 0.29
9.1	282.25	0.00354	0.530	10.16	28.8 ± 2.4	-2.283 ± 0.082	61.11 ± 0.30
4.0	277.15	0.00361	0.525	7.01	18.9 ± 1.6	-2.686 ± 0.085	60.94 ± 0.30
-2.1	271.05	0.00369	0.523	4.74	11.8 ± 1.1	-3.138 ± 0.091	60.62 ± 0.31
-12.5	260.65	0.00384	0.521	1.83	2.61 ± 0.45	-4.61 ± 0.17	61.47 ± 0.45
-23.9	249.25	0.00401	0.519	1.39	1.23 ± 0.39	-5.32 ± 0.32	60.25 ± 0.70

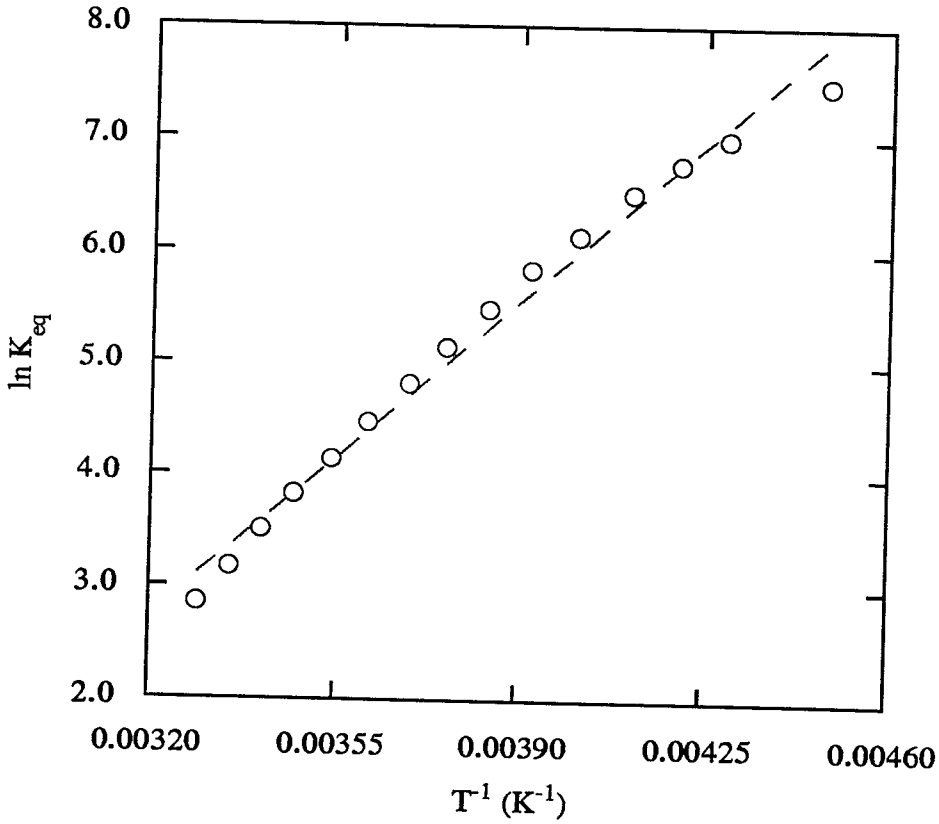
Plot of ln K_{eq} *vs* T^{-1} for the Oxidative Addition of Me_3SnCl to $[PtMe_2(bipy\text{-}^tbu_2)]$ in Toluene-d_8



Regression Analysis

slope = 5900(195)	r^2 = 0.9946
intercept = -18.14(69)	se_y = 0.07787
F = 914.9	ss_{reg} = 5.548
df = 5	ss_{resid} = 0.03032
$\Delta H^{\ddagger}$ = -49.1 ± 1.6 kJ mol^{-1}	$\Delta S^{\ddagger}$ = -150.8 ± 5.8 J mol^{-1} K^{-1}

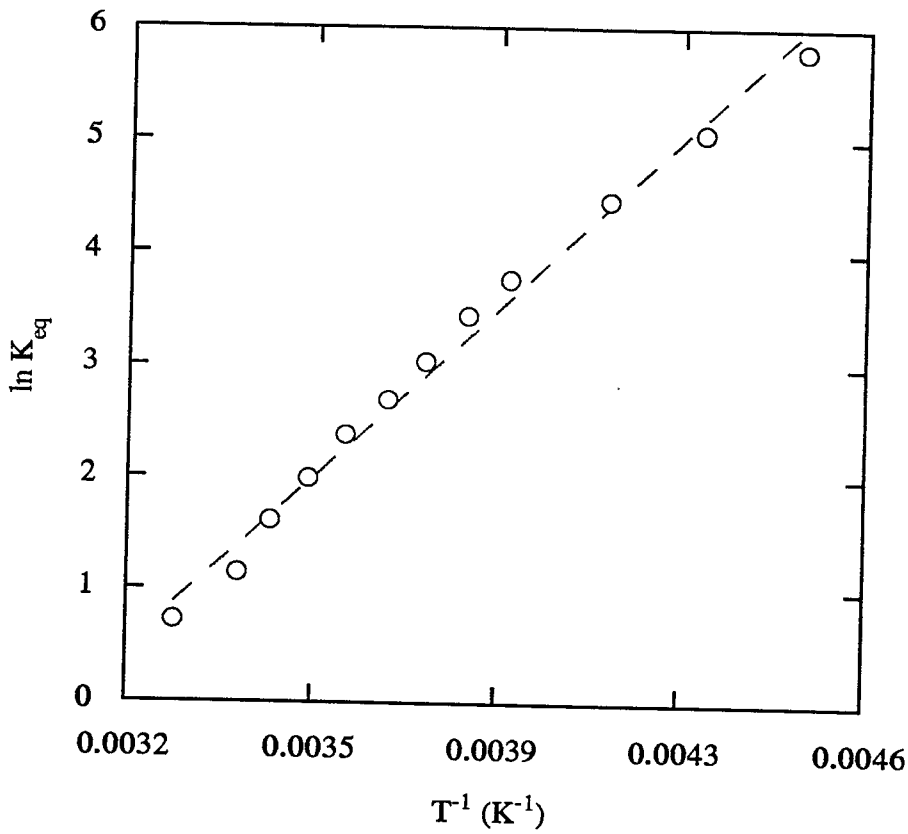
Plot of ln K_{eq} *vs* T^{-1} for the Oxidative Addition of Me_3SnCl to $[PtMe_2(bipy\text{-}^tbu_2)]$ in CD_2Cl_2



Regression Analysis

slope = 4000(130)	r^2 = 0.9863
intercept = -10.04(50)	se_y = 0.1782
F = 935.0	ss_{reg} = 29.69
df = 13	ss_{resid} = 0.4128
$\Delta H^{\ddagger}$ = -33.2 ± 2.4 kJ mol^{-1}	$\Delta S^{\ddagger}$ = -83.5 ± 9.0 J mol^{-1} K^{-1}

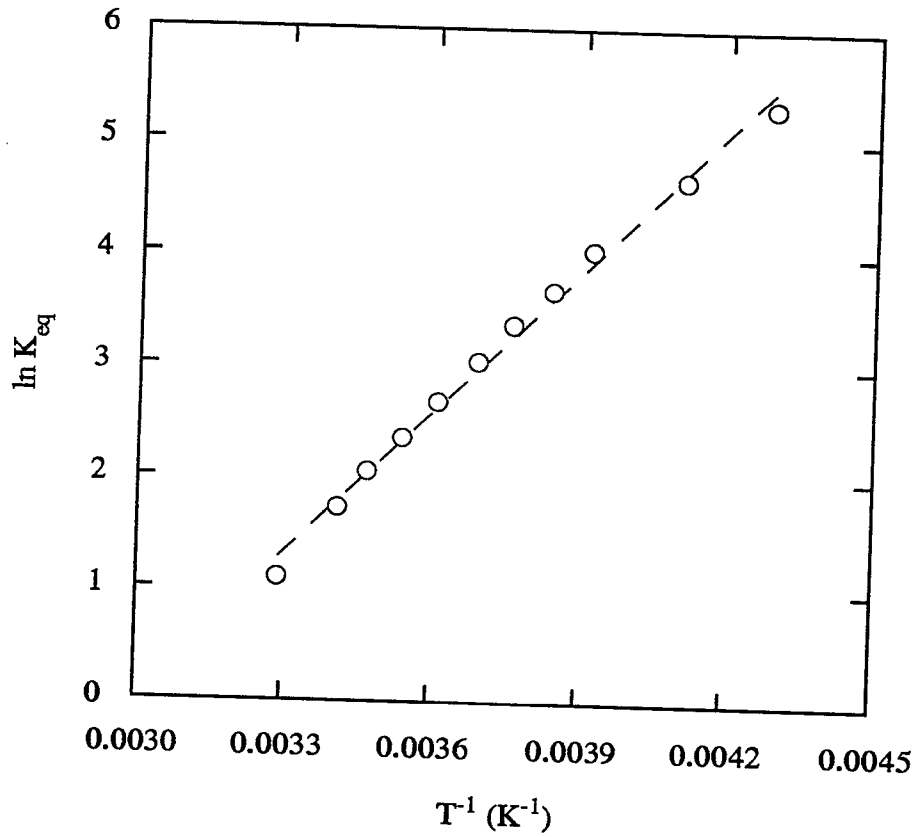
Plot of ln K_{eq} *vs* T^{-1} for the Oxidative Addition of Me_3SnCl to $[PtMe_2(py\text{-}n\text{-}pr)]$ in CD_2Cl_2



Regression Analysis

slope = 4304(130)	r^2 = 0.9905
intercept = -13.28(50)	se_y = 0.1602
F = 1047.3	ss_{reg} = 26.89
df = 10	ss_{resid} = 0.2568
ΔH° = -35.8 ± 1.1 kJ mol^{-1}	ΔS° = -110.4 ± 4.2 J mol^{-1} K^{-1}

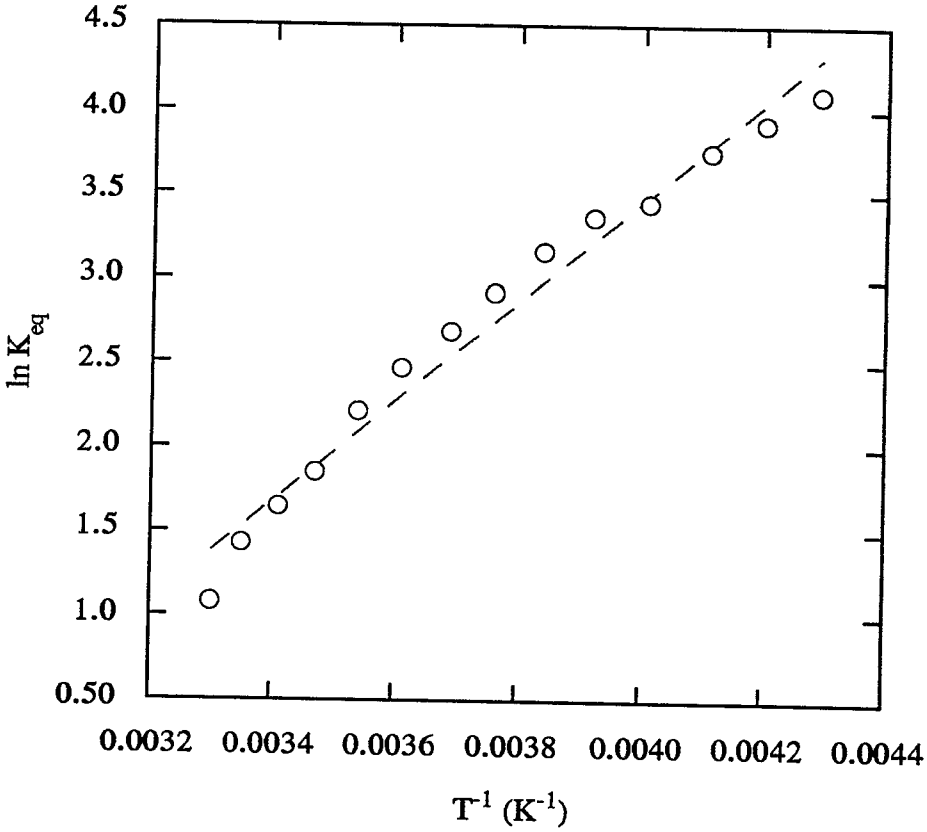
Plot of ln K_{eq} *vs* T^{-1} for the Oxidative Addition of Me_3SnCl to $[PtMe_2(paen\text{-}me_2)]$ in CD_2Cl_2



Regression Analysis

slope = 4200(110)	r^2 = 0.9937
intercept = -12.60(42)	se_y = 0.1071
F = 1420.8	ss_{reg} = 16.30
df = 9	ss_{resid} = 0.1032
$\Delta H^{\bullet}$ = -34.96 ± 0.93 kJ mol^{-1}	$\Delta S^{\bullet}$ = -104.8 ± 3.5 J mol^{-1} K^{-1}

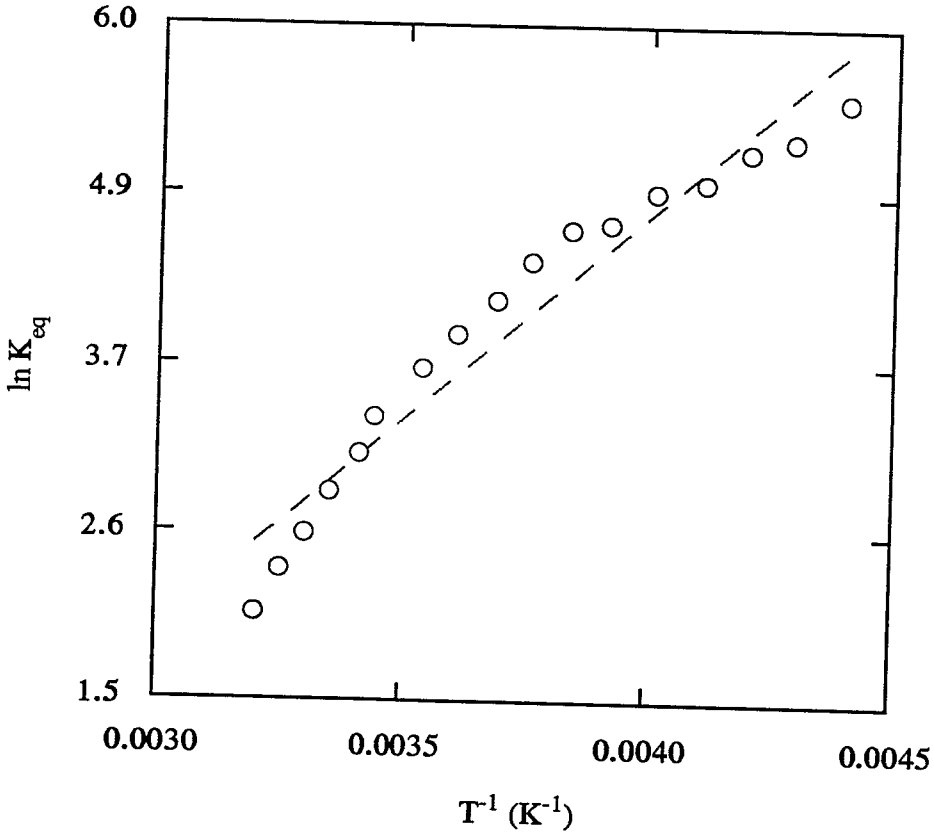
Plot of ln K_{eq} *vs* T^{-1} for the Oxidative Addition of Me_3SnCl to $[PtMe_2(bipy\text{-}^tbu_2)]$ in Acetone-d_6



Regression Analysis

slope = 2960(140)	r^2 = 0.9736
intercept = -8.40(53)	se_y = 0.1635
F = 443.1	ss_{reg} = 11.84
df = 12	ss_{resid} = 0.3207
ΔH° = -24.6 ± 1.2 kJ mol^{-1}	ΔS° = -69.8 ± 4.4 J mol^{-1} K^{-1}

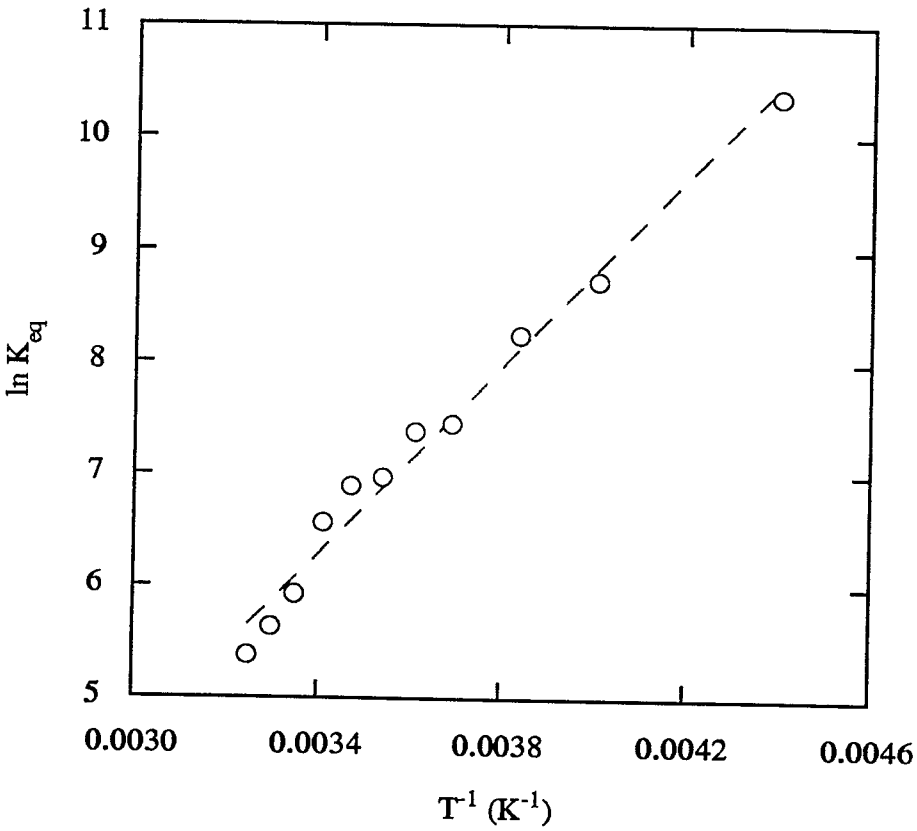
Plot of ln K_{eq} *vs* T^{-1} for the Oxidative Addition of Me_3SnCl to $[PtMe_2(bipy\text{-}^tbu_2)]$ in CD_3CN



Regression Analysis

slope = 2745(180)	r^2 = 0.9400
intercept = -6.23(67)	se_y = 0.2731
F = 235.1	ss_{reg} = 17.54
df = 15	ss_{resid} = 1.1189
$\Delta H^{\ddagger}$ = -22.8 ± 1.5 kJ mol^{-1}	$\Delta S^{\ddagger}$ = -51.8 ± 5.6 J mol^{-1} K^{-1}

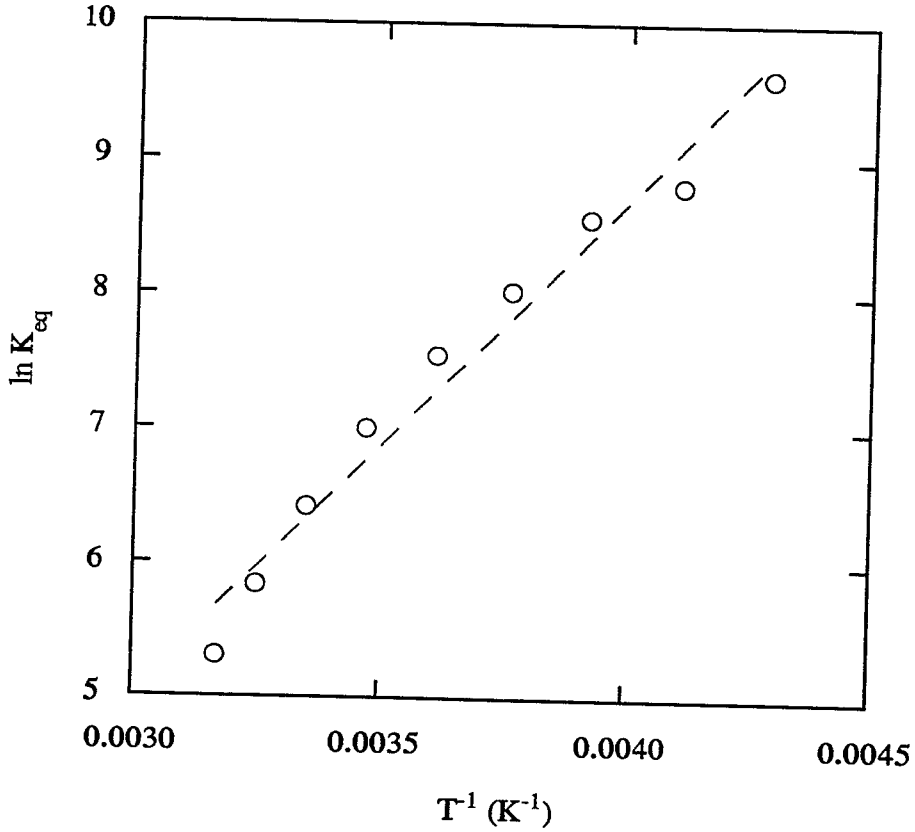
Plot of ln K_{eq} *vs* T^{-1} for the Oxidative Addition of Me_3SnBr to $[PtMe_2(bipy\text{-}^tbu_2)]$ in CD_2Cl_2



Regression Analysis

slope = 4193(190)	r^2 = 0.9815
intercept = -7.97(70)	se_y = 0.2097
F = 478.1	ss_{reg} = 21.03
df = 9	ss_{resid} = 0.3959
$\Delta H^{\ddagger}$ = -34.9 ± 1.6 kJ mol^{-1}	$\Delta S^{\ddagger}$ = -66.3 ± 5.8 J mol^{-1} K^{-1}

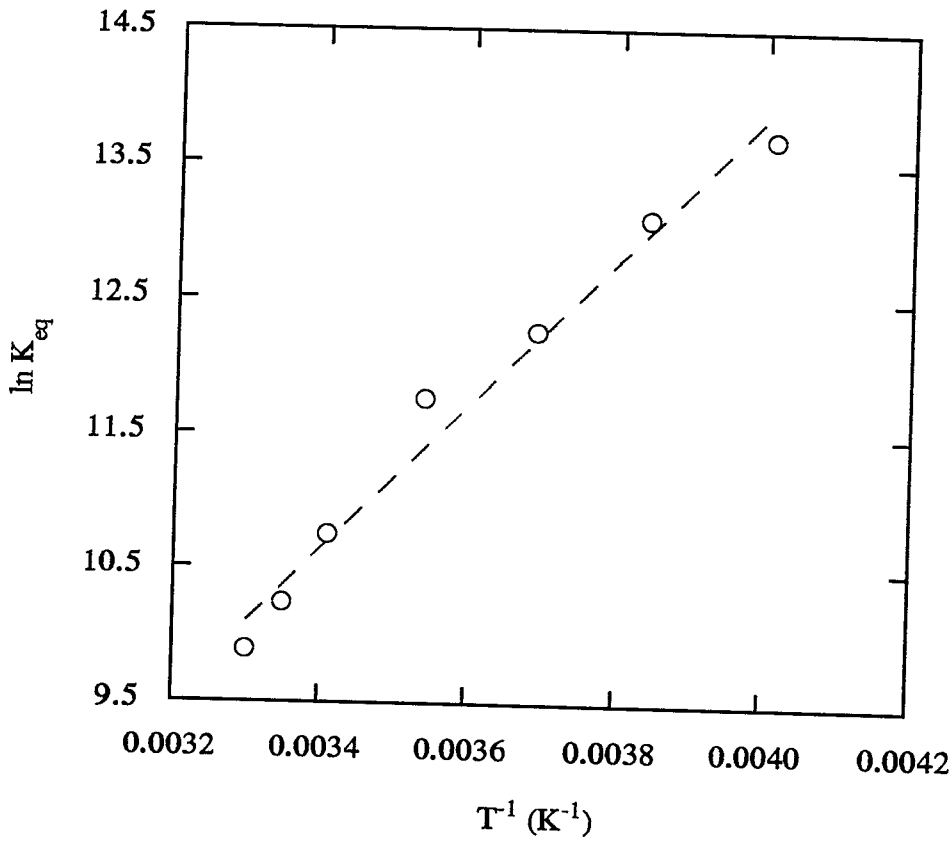
Plot of ln K_{eq} *vs* T^{-1} for the Oxidative Addition of Me_3SnBr to $[PtMe_2(bipy\text{-}^tbu_2)]$ in CD_3CN



Regression Analysis

slope = 3630(230)	r^2 = 0.9729
intercept = -5.83(84)	se_y = 0.8429
F = 251.0	ss_{reg} = 16.12
df = 7	ss_{resid} = 0.4495
$\Delta H^{\ddagger}$ = -30.2 ± 1.9 kJ mol^{-1}	$\Delta S^{\ddagger}$ = -48.5 ± 7.0 J mol^{-1} K^{-1}

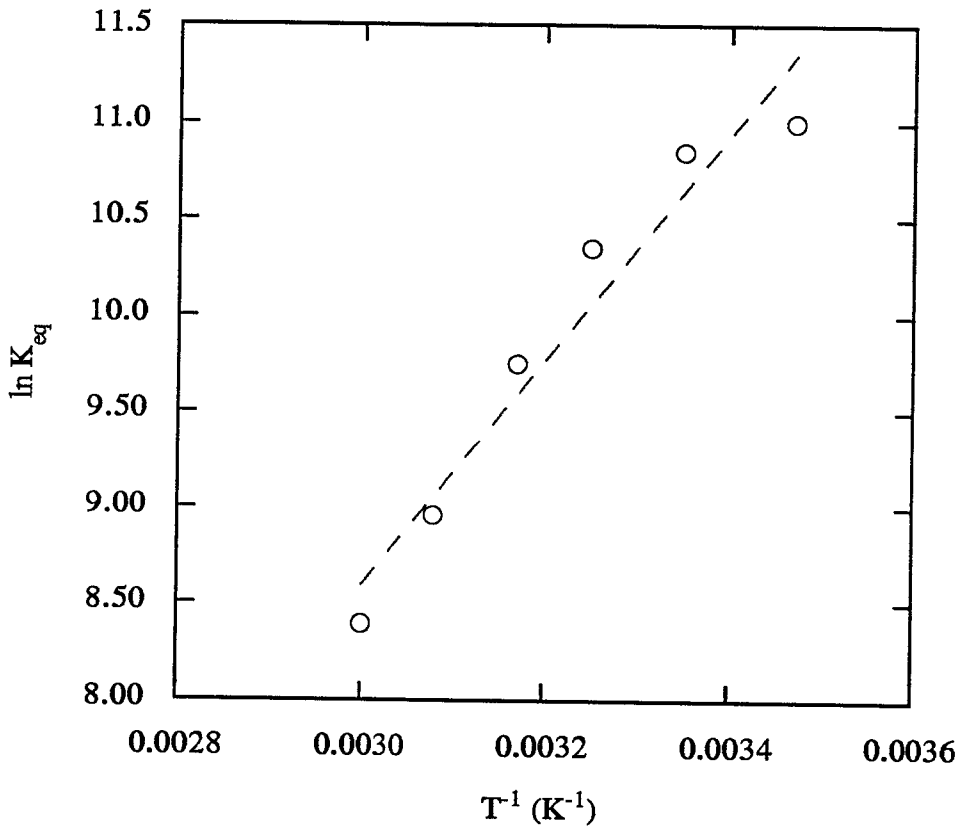
Plot of ln K_{eq} *vs* T^{-1} for the Oxidative Addition of Me_3SnI to $[PtMe_2(bipy\text{-}^tbu_2)]$ in CD_2Cl_2



Regression Analysis

slope = 5410(340)	r^2 = 0.9811
intercept = -7.8(12)	se_y = 0.2188
F = 260.6	ss_{reg} = 12.47
df = 5	ss_{resid} = 0.2393
$\Delta H^{\ddagger}$ = -45.0 ± 2.8 kJ mol^{-1}	$\Delta S^{\ddagger}$ = -65 ± 10 J mol^{-1} K^{-1}

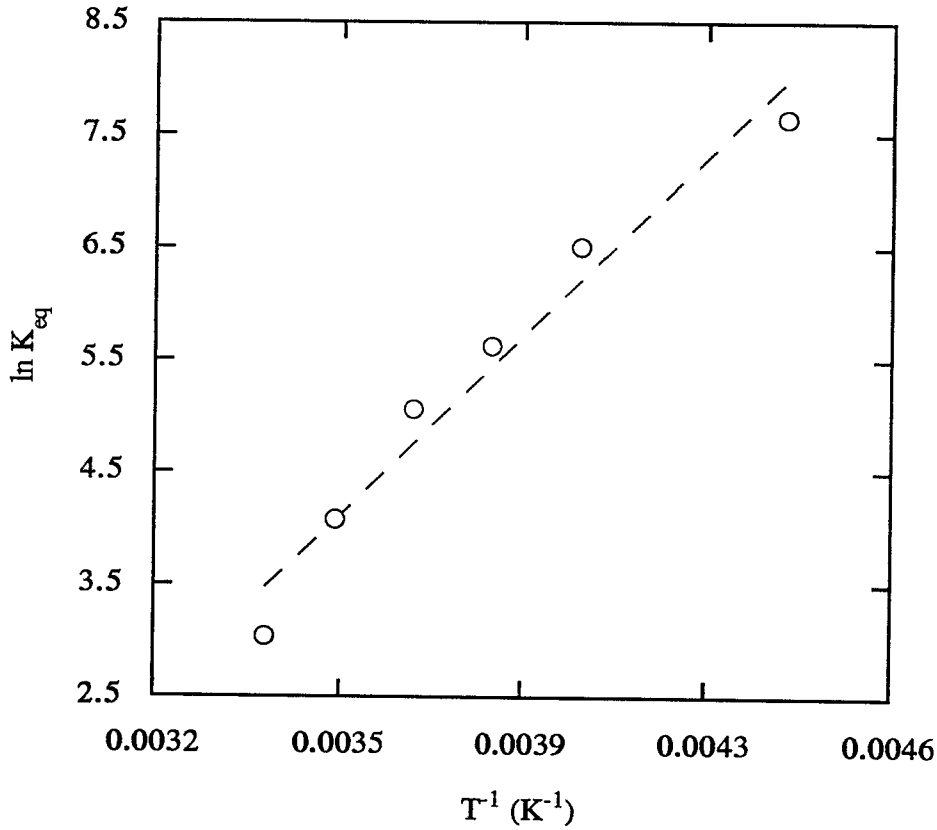
Plot of ln K_{eq} *vs* T^{-1} for the Oxidative Addition of Me_3SnI to $[PtMe_2(bipy\text{-}^tbu_2)]$ in CD_3CN



Regression Analysis

slope = 5870(750)	r^2 = 0.9394
intercept = -9.0(24)	se_y = 0.2891
F = 62.00	ss_{reg} = 5.1821
df = 4	ss_{resid} = 0.3343
$\Delta H^{\ddagger}$ = -48.8 ± 6.2 kJ mol^{-1}	$\Delta S^{\ddagger}$ = -75 ± 20 J mol^{-1} K^{-1}

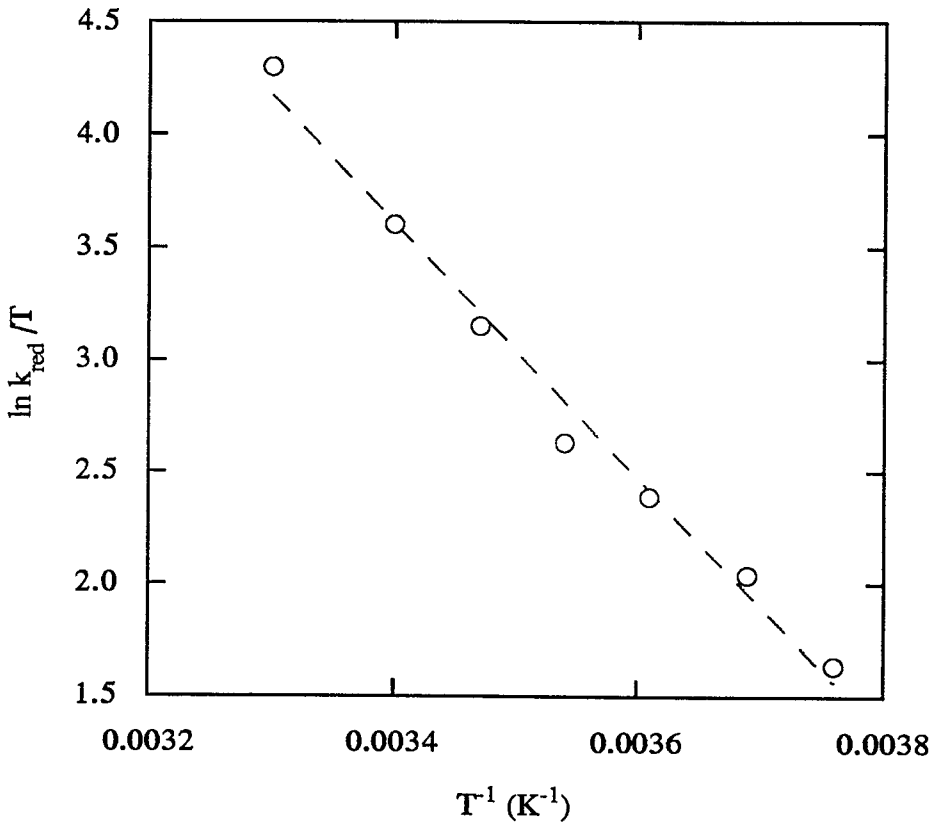
Plot of ln K_{eq} *vs* T^{-1} for the Oxidative Addition of Me_3GeCl to $[PtMe_2(bipy\text{-}^tbu_2)]$ in CD_2Cl_2



Regression Analysis

slope = 4560(460)	r^2 = 0.9609
intercept = -12.1(18)	se_y = 0.3700
F = 98.22	ss_{reg} = 213.19
df = 4	ss_{resid} = 0.5400
$\Delta H^{\bullet}$ = -37.9 ± 3.8 kJ mol^{-1}	$\Delta S^{\bullet}$ = -100 ± 15 J mol^{-1} K^{-1}

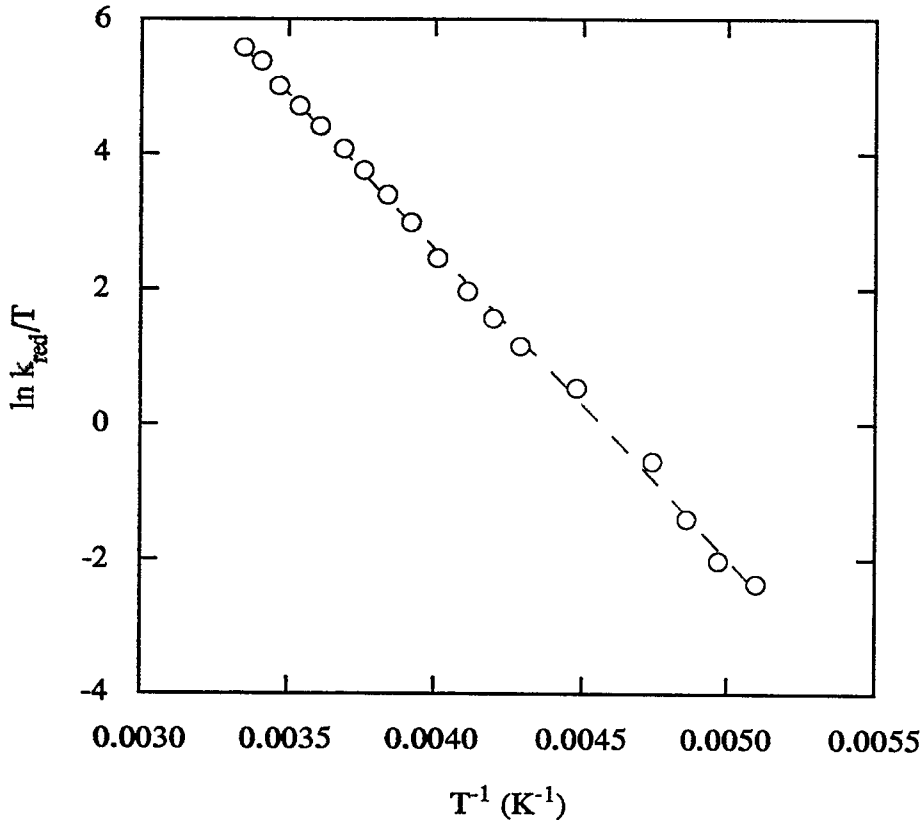
Eyring Plot for the Reductive Elimination of Me_3SnCl from $[PtClMe_2(Me_3Sn)(bipy\text{-}^tbu_2)]$ in Toluene-d_8



Regression Analysis

slope = -5600(260)	r^2 = 0.9896
intercept = 22.63(91)	se_y = 0.10257
F = 473.9	ss_{reg} = 4.986
df = 5	ss_{resid} = 0.05261
$\Delta H^{\ddagger}$ = 46.5 ± 5.5 kJ mol^{-1}	$\Delta S^{\ddagger}$ = -9 ± 19 J mol^{-1} K^{-1}

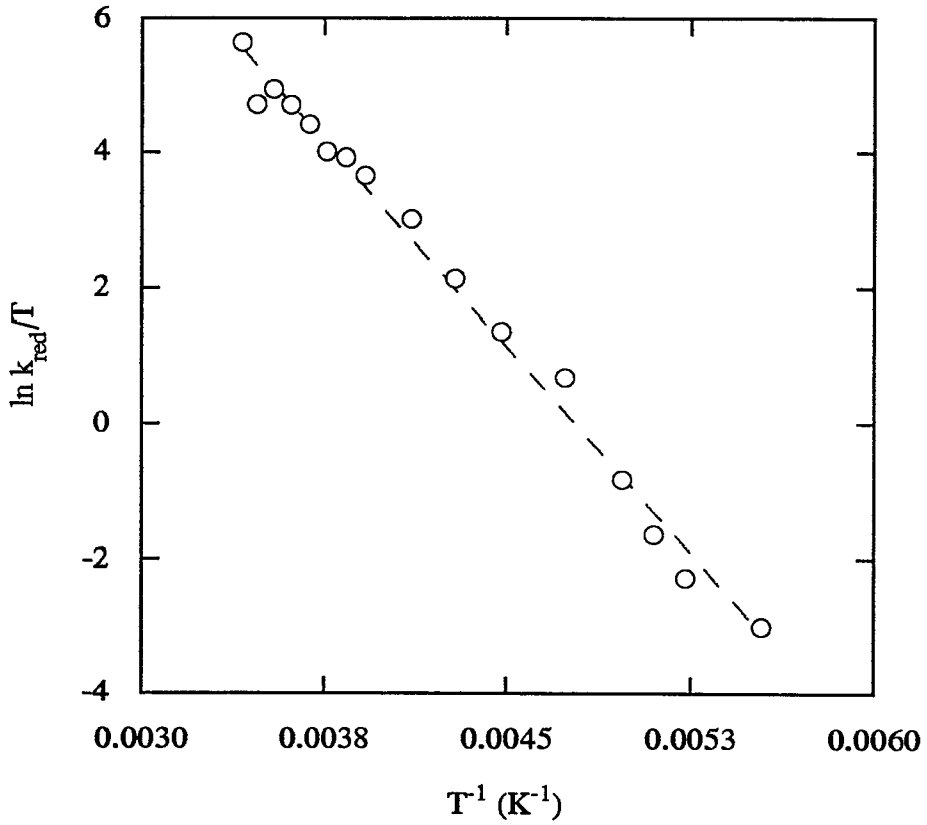
Eyring Plot for the Reductive Elimination of Me_3SnCl from $[PtClMe_2(Me_3Sn)(bipy\text{-}^tbu_2)]$ in CD_2Cl_2



Regression Analysis

slope = -4605(45)	r^2 = 0.9985
intercept = 21.02(18)	se_y = 0.1033
F = 10507	ss_{reg} = 112.1
df = 16	ss_{resid} = 0.1708
$\Delta H^{\ddagger}$ = 38.28 ± 0.79 kJ mol^{-1}	$\Delta S^{\ddagger}$ = -22.8 ± 3.3 J mol^{-1} K^{-1}

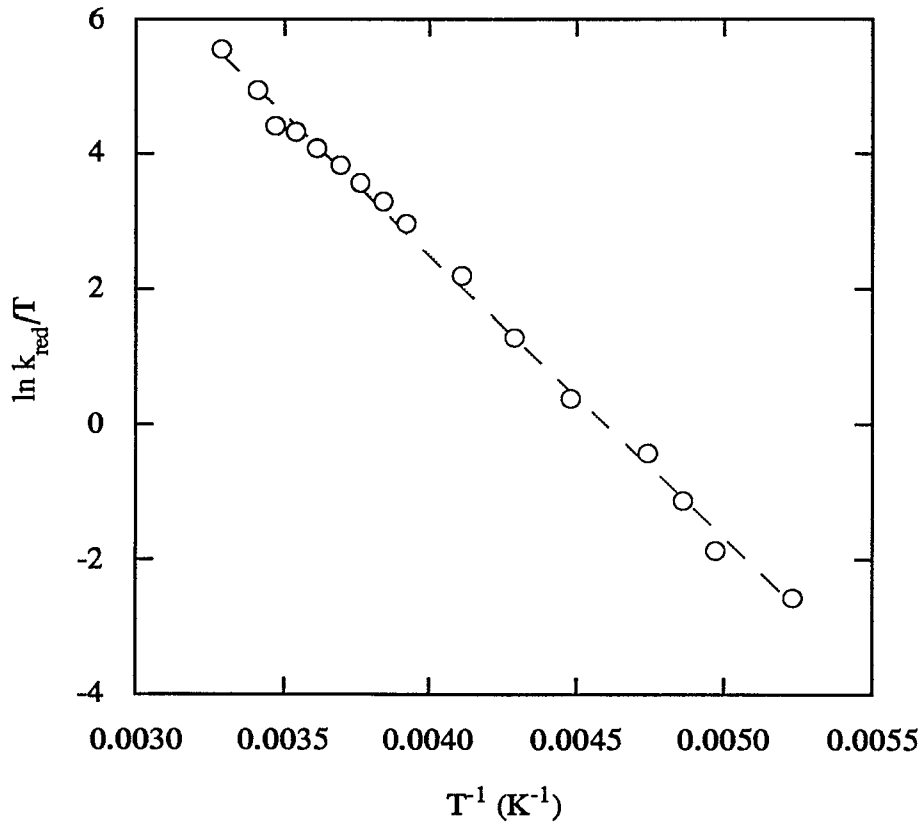
Eyring Plot for the Reductive Elimination of Me_3SnCl from $[PtClMe_2(Me_3Sn)(py\text{-}n\text{-}pr)]$ in CD_2Cl_2



Regression Analysis

slope = -4037(98)	r^2 = 0.9912
intercept = 19.29(42)	se_y = 0.2794
F = 1681	ss_{reg} = 131.2
df = 15	ss_{resid} = 1.171
$\Delta H^{\ddagger}$ = 33.6 ± 1.7 kJ mol^{-1}	$\Delta S^{\ddagger}$ = -37.2 ± 7.4 J mol^{-1} K^{-1}

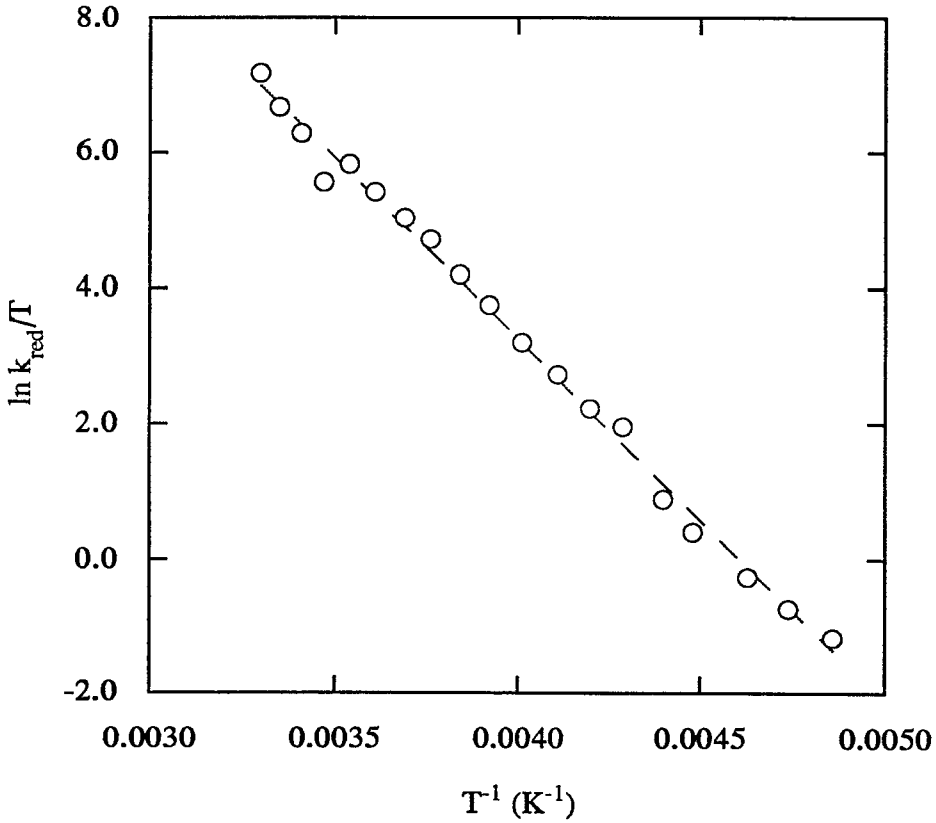
Eyring Plot for the Reductive Elimination of Me_3SnCl from $[PtClMe_2(Me_3Sn)(paen\text{-}me_2)]$ in CD_2Cl_2



Regression Analysis

slope = -4187(64)	r^2 = 0.9967
intercept = 19.24(26)	se_y = 0.1512
F = 4338	ss_{reg} = 99.19
df = 14	ss_{resid} = 0.3201
$\Delta H^{\ddagger}$ = 34.8 ± 1.1 kJ mol^{-1}	$\Delta S^{\ddagger}$ = -37.6 ± 4.6 J mol^{-1} K^{-1}

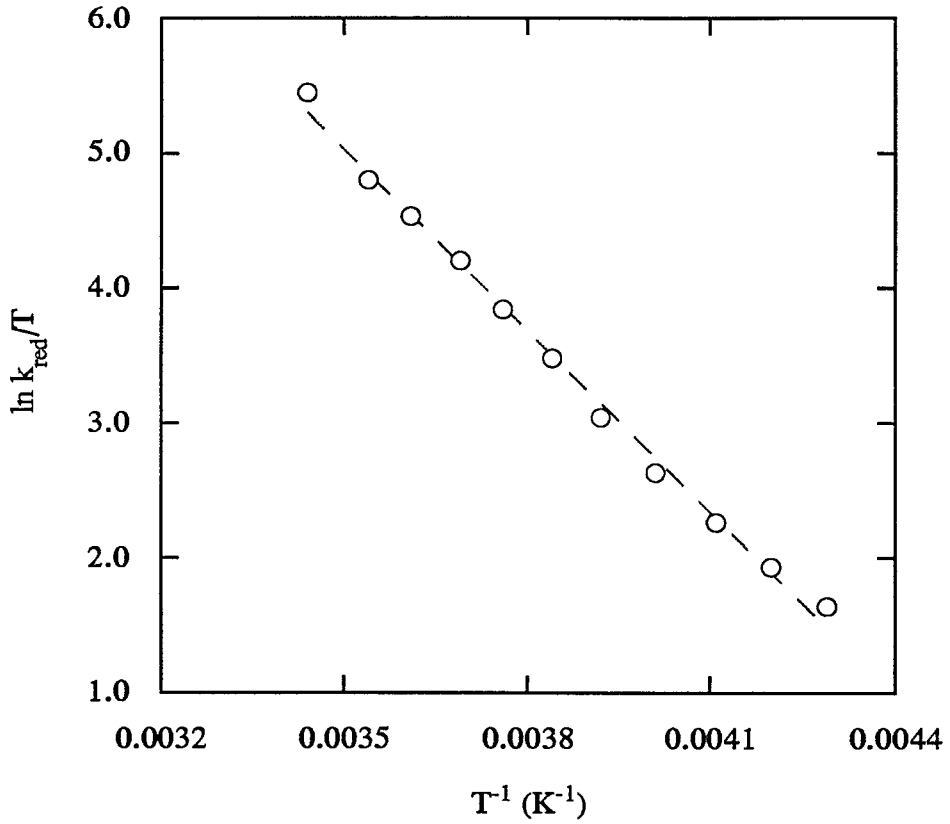
Eyring Plot for the Reductive Elimination of Me_3SnCl from $[PtClMe_2(Me_3Sn)(bipy\text{-}^tbu_2)]$ in Acetone-d_6



Regression Analysis

slope = -5370(95)	r^2 = 0.9947
intercept = 24.72(38)	se_y = 0.1971
F = 3173	ss_{reg} = 123.2
df = 17	ss_{resid} = 0.6602
$\Delta H^{\ddagger}$ = 44.6 ± 1.7 kJ mol^{-1}	$\Delta S^{\ddagger}$ = 8.0 ± 6.7 J mol^{-1} K^{-1}

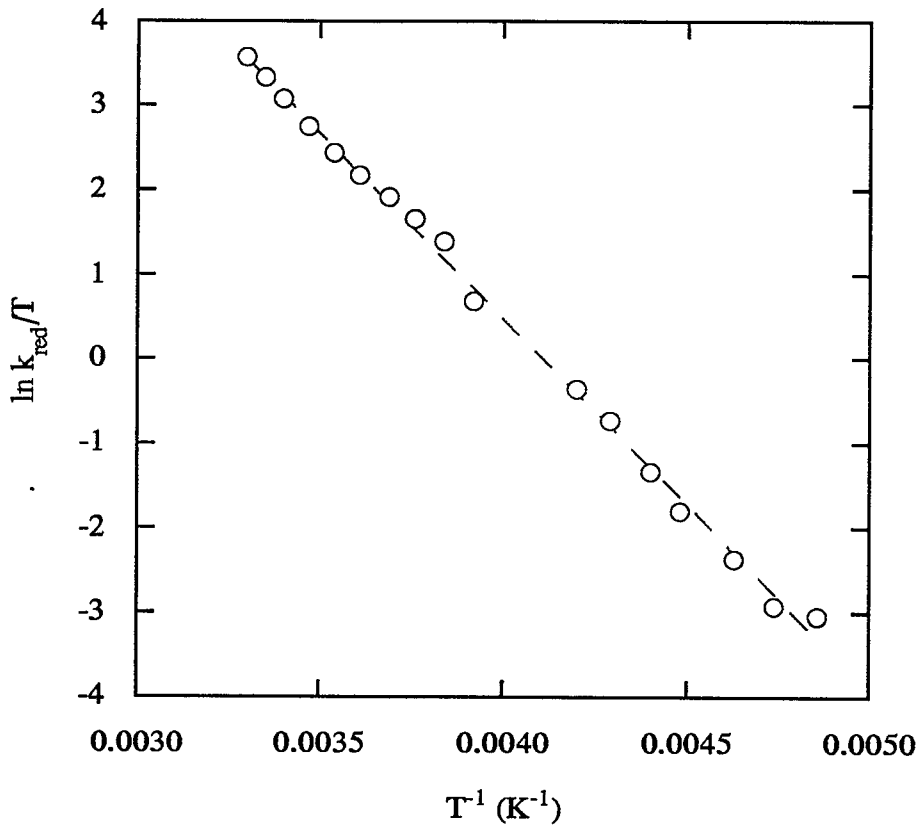
Eyring Plot for the Reductive Elimination of Me_3SnCl from $[PtClMe_2(Me_3Sn)(bipy\text{-}^tbu_2)]$ in CD_3CN



Regression Analysis

slope = -4490(100)	r^2 = 0.9951
intercept = 20.75(40)	se_y = 0.09159
F = 1847	ss_{reg} = 15.49
df = 17	ss_{resid} = 0.07550
$\Delta H^{\ddagger}$ = 37.3 ± 2.0 kJ mol^{-1}	$\Delta S^{\ddagger}$ = -25.0 ± 7.6 J mol^{-1} K^{-1}

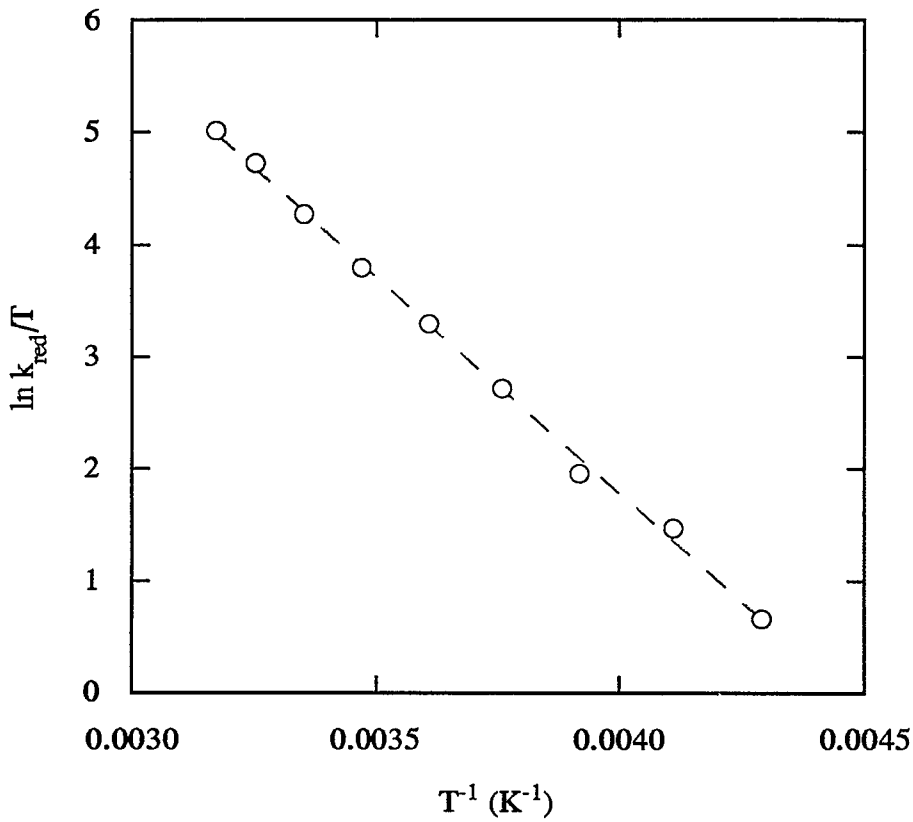
Eyring Plot for the Reductive Elimination of Me_3SnBr from $[PtBrMe_2(Me_3Sn)(bipy\text{-}^tbu_2)]$ in CD_2Cl_2



Regression Analysis

slope = -4039(45)	r^2 = 0.9982
intercept = 16.81(218	se_y = 0.09255
F = 8029	ss_{reg} = 68.77
df = 14	ss_{resid} = 0.1199
$\Delta H^{\ddagger}$ = 33.58 ± 0.80 kJ mol^{-1}	$\Delta S^{\ddagger}$ = -57.5 ± 3.2 J mol^{-1} K^{-1}

Eyring Plot for the Reductive Elimination of Me_3SnBr from $[PtBrMe_2(Me_3Sn)(bipy\text{-}^tbu_2)]$ in CD_3CN



Regression Analysis

slope = -3849(64)	r^2 = 0.9980
intercept = 17.19(24)	se_y = 0.07144
F = 3549	ss_{reg} = 18.12
df = 7	ss_{resid} = 0.03573
$\Delta H^{\ddagger}$ = 32.0 ± 1.1 kJ mol^{-1}	$\Delta S^{\ddagger}$ = -54.7 ± 4.2 J mol^{-1} K^{-1}