

Run 1

T/K	424.6	429.5	434.4	439.3	444.2	449.1	454
				t/min			
cyclopentane	2.043	2.044	2.063	2.080	2.105	2.125	2.161
tri-n-butylamine	3.508	3.310	3.165	3.046	2.958	2.880	2.836
quinoline	4.195	3.920	3.711	3.536	3.400	3.280	3.202
isoquinoline	4.435	4.127	3.890	3.691	3.535	3.400	3.308
quinaldine	4.990	4.591	4.281	4.024	3.819	3.643	3.519
2,6-dimethylquinoline	6.965	6.247	5.680	5.217	4.841	4.525	4.285
2-phenylpyridine	7.895	7.029	6.342	5.777	5.315	4.931	4.640

	slope T/K	intercept	$\Delta_{\text{sln}}^{\text{g}}H_{\text{m}}(439 \text{ K})$ kJ·mol ⁻¹	$\Delta_{\text{l}}^{\text{g}}H_{\text{m}}(298.15 \text{ K})$ kJ·mol ⁻¹ (lit)	$\Delta_{\text{l}}^{\text{g}}H_{\text{m}}(298.15 \text{ K})$ kJ·mol ⁻¹ (calcd)
Run 1					
tri-n-butylamine	-5076.2	11.583	42.202		62.7±1.6
quinoline	-4760.6	10.455	39.578	59.31	59.5±1.5
isoquinoline	-4819.4	10.487	40.067	60.26	60.1±1.5
quinaldine	-5079.8	10.892	42.231	62.64	62.7±1.6
2,6-dimethylquinoline	-5506.5	11.385	45.779	67.07	67.1±1.7
2-phenylpyridine	-5636.3	11.517	46.858		68.4±1.8

$$\Delta_{\text{l}}^{\text{g}}H_{\text{m}}(298.15 \text{ K})/\text{kJmol}^{-1} = (1.225 \pm 0.038)\Delta_{\text{sln}}^{\text{g}}H_{\text{m}}(439 \text{ K}) + (10.96 \pm 0.18) \quad r^2 = 0.9981 \quad (5)$$

Run 2

T/K	424.7	429.6	434.5	439.4	444.2	449.2	454.1
				t/min			
cyclopentane	2.060	2.061	2.070	2.075	2.092	2.101	2.115
tri-n-butylamine	3.533	3.330	3.170	3.035	2.935	2.843	2.771
quinoline	4.225	3.941	3.715	3.521	3.372	3.236	3.127
isoquinoline	4.468	4.149	3.893	3.675	3.506	3.354	3.230
quinaldine	5.029	4.615	4.285	4.005	3.787	3.592	3.434
2,6-dimethylquinoline	7.012	6.275	5.682	5.189	4.798	4.457	4.179
3-phenylpyridine	7.961	7.058	6.338	5.743	5.269	4.857	4.521

	slope T/K	intercept	$\Delta_{\text{sln}}^{\text{g}}H_{\text{m}}(439 \text{ K})$ kJ·mol ⁻¹	$\Delta_{\text{l}}^{\text{g}}H_{\text{m}}(298.15 \text{ K})$ kJ·mol ⁻¹ (lit)	$\Delta_{\text{l}}^{\text{g}}H_{\text{m}}(298.15 \text{ K})$ kJ·mol ⁻¹ (calcd)
Run 2					
tri-n-butylamine	-5300.3	12.099	44.065		62.6±1.8
quinoline	-4984.6	10.971	41.440	59.31	59.4±1.7
isoquinoline	-5046	11.009	41.950	60.26	60.0±1.7
quinaldine	-5317.3	11.439	44.206	62.64	62.8±1.8
2,6-dimethylquinoline	-5738.2	11.918	47.705	67.07	67.0±2.0
3-phenylpyridine	-5878.5	12.074	48.872		68.4±2.0

$$\Delta_{\text{l}}^{\text{g}}H_{\text{m}}(298.15 \text{ K})/\text{kJmol}^{-1} = (1.213 \pm 0.041)\Delta_{\text{sln}}^{\text{g}}H_{\text{m}}(439 \text{ K}) + (9.17 \pm 0.20) \quad r^2 = 0.9977 \quad (6)$$

Run 3

<i>T</i> /K	425.4	430.3	435.3	440.3	445.25	450.25	454.4
				t/min			
cyclopentane	1.835	1.850	1.860	1.883	1.917	1.945	1.962
tri- <i>n</i> -butylamine	3.154	2.991	2.853	2.757	2.691	2.635	2.575
quinoline	3.775	3.543	3.345	3.202	3.095	3.000	2.909
isoquinoline	3.991	3.729	3.505	3.342	3.217	3.109	3.005
quinaldine	4.490	4.147	3.858	3.642	3.475	3.330	3.195
2,6-dimethylquinoline	6.262	5.636	5.117	4.719	4.402	4.134	3.890
2-phenylpyridine	7.110	6.346	5.714	5.223	4.835	4.509	4.214
7,8-benzoquinoline	24.128	20.370	17.335	14.982	13.076	11.544	10.219
acridine	25.195	21.229	18.029	15.551	13.550	11.936	10.554

	slope <i>T</i> /K	intercept	$\Delta_{\text{sln}}^{\text{g}}H_{\text{m}}(440\text{ K})$ kJ·mol ⁻¹	$\Delta_{\text{l}}^{\text{g}}H_{\text{m}}(298.15\text{ K})$ kJ·mol ⁻¹ (lit)	$\Delta_{\text{l}}^{\text{g}}H_{\text{m}}(298.15\text{ K})$ kJ·mol ⁻¹ (calcd)
Run 3					
tri- <i>n</i> -butylamine	-5023.8	11.54	41.766		62.6±0.9
quinoline	-4706.2	10.408	39.126	59.31	59.5±0.9
isoquinoline	-4766.5	10.444	39.627	60.26	60.1±0.9
quinaldine	-5034.7	10.866	41.857	62.64	62.7±0.9
2,6-dimethylquinoline	-5456.4	11.346	45.362	67.07	67.0±1.0
2-phenylpyridine	-5590.8	11.487	46.480		68.3±1.0
7,8-benzoquinoline	-6532.3	12.259	54.307	77.23	77.7±1.2
acridine	-6580.3	12.325	54.706	78.63	78.2±1.2

$$\Delta_{\text{l}}^{\text{g}}H_{\text{m}}(298.15\text{ K})/\text{kJmol}^{-1} = (1.202 \pm 0.022)\Delta_{\text{sln}}^{\text{g}}H_{\text{m}}(440\text{ K}) + (12.43 \pm 0.36) \quad r^2 = 0.9986 \quad (7)$$

Run 4

<i>T</i> /K	425.4	430.35	435.35	440.3	445.2	450.1	455.1
				t/min			
cyclopentane	1.829	1.843	1.860	1.883	1.921	1.954	1.978
tributylamine	3.145	2.983	2.852	2.756	2.700	2.646	2.595
quinoline	3.761	3.532	3.343	3.200	3.103	3.015	2.930
isoquinoline	3.977	3.718	3.503	3.340	3.226	3.124	3.026
quinaldine	4.479	4.139	3.856	3.640	3.485	3.347	3.219
2,6-dimethylquinoline	6.246	5.625	5.114	4.716	4.417	4.153	3.919
3-phenylpyridine	7.097	6.337	5.708	5.222	4.851	4.529	4.243
7,8-benzoquinoline	24.028	20.292	17.305	14.955	13.128	11.600	10.280
acridine	25.079	21.141	17.998	15.525	13.602	12.005	10.612

	slope T/K	intercept	$\Delta_{\text{sln}}^{\text{g}}H_{\text{m}}(440 \text{ K})$ kJ·mol ⁻¹	$\Delta_{\text{l}}^{\text{g}}H_{\text{m}}(298.15 \text{ K})$ kJ·mol ⁻¹ (lit)	$\Delta_{\text{l}}^{\text{g}}H_{\text{m}}(298.15 \text{ K})$ kJ·mol ⁻¹ (calcd)
Run 4					
tributylamine	-4917.2	11.295	40.880		62.7±1.0
quinoline	-4591.6	10.145	38.173	59.31	59.4±1.0
isoquinoline	-4656.8	10.192	38.715	60.26	60.1±1.0
quinaldine	-4926.6	10.617	40.958	62.64	62.8±1.0
2,6-dimethylquinoline	-5342.5	11.084	44.415	67.07	67.0±1.1
3-phenylpyridine	-5485.5	11.244	45.604		68.5±1.1
7,8-benzoquinoline	-6394.8	11.944	53.164	77.23	77.7±1.3
acridine	-6438.6	12.001	53.528	78.63	78.2±1.3

$$\Delta_{\text{l}}^{\text{g}}H_{\text{m}}(298.15 \text{ K})/\text{kJmol}^{-1} = (1.22\pm0.023)\Delta_{\text{sln}}^{\text{g}}H_{\text{m}}(440 \text{ K}) + (12.75\pm0.36) \quad r^2 = 0.9985 \quad (8)$$

Run 5							
T/K	449.6	454.5	459.5	464.5	469.5	474.4	479.5
				t/min			
cyclohexane	3.418	3.444	3.453	3.466	3.477	3.519	3.512
tri-n-butylamine	4.456	4.359	4.256	4.175	4.107	4.085	4.013
quinazoline	5.171	5.000	4.832	4.693	4.575	4.511	4.398
(-)-nicotine	6.057	5.761	5.479	5.25	5.058	4.937	4.765
2,6-dimethylquinoline	7.09	6.647	6.244	5.909	5.629	5.433	5.196
2,2-bipyridine	7.489	6.993	6.542	6.169	5.855	5.635	5.372
2-phenylpyridine	7.802	7.26	6.748	6.342	6.003	5.775	5.481
4,4-bipyridine·xH ₂ O	9.297	8.522	7.841	7.276	6.802	6.45	6.073
7,8-benzoquinoline	20.681	18.122	15.933	14.144	12.66	11.509	10.384
acridine	21.461	18.764	16.49	14.599	13.038	11.815	10.653

	slope T/K	intercept	$\Delta_{\text{sln}}^{\text{g}}H_{\text{m}}(465 \text{ K})$ kJ·mol ⁻¹	$\Delta_{\text{l}}^{\text{g}}H_{\text{m}}(298.15 \text{ K})$ kJ·mol ⁻¹ (lit)	$\Delta_{\text{l}}^{\text{g}}H_{\text{m}}(298.15 \text{ K})$ kJ·mol ⁻¹ (calcd)
Run 5					
tri-n-butylamine	-5238.3	11.618	43.549	62.70	62.9±1.7
quinazoline	-4904.9	10.352	40.778		59.3±1.6
(-)-nicotine	-5355.1	10.945	44.520		64.1±1.7
2,6-dimethylquinoline	-5608.4	11.178	46.626	67.07	66.9±1.8
2,2-dipyridine	-5634.4	11.133	46.842		67.1±1.8
2-phenylpyridine	-5746.5	11.309	47.774	68.40	68.3±1.9
4,4-dipyridine·1.7H ₂ O	-5980.4	11.535	49.719		70.8±1.9
7,8-benzoquinoline	-6624.8	11.892	55.076	77.23	77.7±2.1
acridine	-6672.3	11.953	55.471	78.63	78.2±2.2

$$\Delta_{\text{l}}^{\text{g}}H_{\text{m}}(298.15 \text{ K})/\text{kJmol}^{-1} = (1.287\pm0.038)\Delta_{\text{sln}}^{\text{g}}H_{\text{m}}(465 \text{ K}) + (6.85\pm0.41) \quad r^2 = 0.9974 \quad (11)$$

Run 6

T/K	449.5	454.4	459.4	464.3	469.3	474.3	479.3
cyclohexane	3.454	3.465	3.481	3.499	3.51	3.537	3.547
tri-n-butylamine	4.499	4.385	4.289	4.214	4.144	4.101	4.051
quinazoline	5.222	5.029	4.869	4.736	4.615	4.53	4.439
(-)-nicotine	6.11	5.797	5.521	5.298	5.103	4.951	4.807
2,6-dimethylquinoline	7.156	6.685	6.29	5.962	5.676	5.452	5.242
2,2-bipyridine	7.557	7.034	6.591	6.223	5.905	5.653	5.419
2-phenylpyridine	7.858	7.319	6.801	6.403	6.061	5.777	5.529
4,4-bipyridine·xH ₂ O	9.384	8.569	7.898	7.336	6.858	6.477	6.125
7,8-benzoquinoline	20.849	18.232	16.045	14.249	12.759	11.534	10.466
acridine	21.675	18.858	16.6	14.719	13.138	11.875	10.733

	slope T/K	intercept	$\Delta_{\text{sln}}^{\text{g}}H_{\text{m}}(464 \text{ K})$ kJ·mol ⁻¹	$\Delta_{\text{l}}^{\text{g}}H_{\text{m}}(298.15 \text{ K})$ kJ·mol ⁻¹ (lit)	$\Delta_{\text{l}}^{\text{g}}H_{\text{m}}(298.15 \text{ K})$ kJ·mol ⁻¹ (calcd)
Run 6					
tri-n-butylamine	-5272.4	11.686	43.833	62.70	63.2±2.5
quinazoline	-4830.0	10.178	40.154		58.5±2.3
(-)-nicotine	-5315.7	10.850	44.192		63.7±2.5
2,6-dimethylquinoline	-5578.9	11.105	46.380	67.07	66.5±2.7
2,2-bipyridine	-5612.1	11.076	46.657		66.9±2.7
2-phenylpyridine	-5741.6	11.290	47.733	68.70	68.3±2.7
4,4-bipyridine·xH ₂ O	-5961.6	11.486	49.562		70.6±2.8
7,8-benzoquinoline	-6631.0	11.898	55.128	77.23	77.8±3.1
acridine	-6675.0	11.951	55.493	78.63	78.3±3.2

$$\Delta_{\text{l}}^{\text{g}}H_{\text{m}}(298.15 \text{ K})/\text{kJ}\cdot\text{mol}^{-1} = (1.29 \pm 0.056)\Delta_{\text{sln}}^{\text{g}}H_{\text{m}}(464 \text{ K}) + (6.69 \pm 0.59) \quad r^2 = 0.9944 \quad (12)$$

Run 7

T/K	449.3	454.4	459.3	464.3	469.2	474.2	479.2
				t/min			
cyclopentane	3.452	3.463	3.484	3.501	3.519	3.56	3.592
tributylamine	4.569	4.443	4.349	4.268	4.201	4.174	4.143
2,2-bipyridine	7.676	7.125	6.681	6.302	5.985	5.752	5.539
2-phenylpyridine	7.977	7.379	6.894	6.479	6.137	5.883	5.651
4,4-bipyridine·xH ₂ O	9.524	8.68	8.001	7.428	6.947	6.584	6.258
7,8-benzoquinoline	21.221	18.496	16.287	14.442	12.934	11.746	10.703
phenanthridine	21.961	19.084	16.784	14.858	13.274	12.029	10.942
1,7-phenanthrolene	23.755	20.587	18.047	15.906	14.164	12.799	11.599
4,7-phenanthrolene	26.875	23.138	20.166	17.688	15.651	14.043	12.652

	slope T/K	intercept	$\Delta_{\text{sln}}^{\text{g}}H_{\text{m}}(464 \text{ K})$ kJ·mol ⁻¹	$\Delta_{\text{l}}^{\text{g}}H_{\text{m}}(298.15 \text{ K})$ kJ·mol ⁻¹ (lit)	$\Delta_{\text{l}}^{\text{g}}H_{\text{m}}(298.15 \text{ K})$ kJ·mol ⁻¹ (calcd)
Run 7					
tri-n-butylamine	-5092.5	11.23	42.337	62.70	62.2±3.6
2,2-bipyridine	-5585.7	10.997	46.437	67.00	67.4±3.9
2-phenylpyridine	-5681	11.14	47.229	68.40	68.4±3.9
4,4-bipyridine·xH ₂ O	-5935.8	11.414	49.348	70.70	71.1±4.1
7,8-benzoquinoline	-6606.7	11.833	54.925	77.23	78.2±4.5
phenanthridine	-6660.6	11.913	55.374	80.14	78.8±4.6
1,7-phenanthrolene	-6712.8	11.936	55.808		79.4±4.6
4,7-phenanthrolene	-6849.6	12.098	56.945		80.8±4.7

$$\Delta_{\text{l}}^{\text{g}}H_{\text{m}}(298.15 \text{ K})/\text{kJmol}^{-1} = (1.276 \pm 0.081)\Delta_{\text{sln}}^{\text{g}}H_{\text{m}}(464 \text{ K}) + (8.18 \pm 0.92) \quad r^2 = 0.9841 \quad (13)$$

Run 8

T/K	449.4	454.4	459.2	464.1 t/min	469.3	474.2	479.2
cyclopentane	3.404	3.463	3.44	3.455	3.474	3.504	3.534
tri-n-butylamine	4.504	4.443	4.294	4.213	4.148	4.107	4.075
2,2-bipyridine	7.569	7.125	6.598	6.226	5.912	5.661	5.449
2-phenylpyridine	7.87	7.379	6.812	6.407	6.066	5.789	5.559
4,4-bipyridine·xH ₂ O	9.393	8.68	7.902	7.337	6.863	6.483	6.158
7,8-benzoquinoline	20.921	18.496	16.08	14.286	12.807	11.551	10.529
phenanthridine	21.64	19.084	16.569	14.686	13.135	11.842	10.765
1,7-phenanthrolene	23.408	20.587	17.806	15.733	14.035	12.584	11.41
4,7-phenanthrolene	26.516	23.138	19.912	17.481	15.479	13.846	12.456

	slope T/K	intercept	$\Delta_{\text{sln}}^{\text{g}}H_{\text{m}}(464 \text{ K})$ kJ·mol ⁻¹	$\Delta_{\text{l}}^{\text{g}}H_{\text{m}}(298.15 \text{ K})$ kJ·mol ⁻¹ (lit)	$\Delta_{\text{l}}^{\text{g}}H_{\text{m}}(298.15 \text{ K})$ kJ·mol ⁻¹ (calcd)
Run 8					
tri-n-butylamine	-5163.9	11.397	42.930	62.70	62.2±3.7
2,2-bipyridine	-5649.2	11.146	46.965	67.00	67.4±4.0
2-phenylpyridine	-5750.6	11.302	47.809	68.40	68.5±4.1
4,4-bipyridine·xH ₂ O	-5995.1	11.553	49.841	70.70	71.1±4.2
7,8-benzoquinoline	-6668.9	11.979	55.443	77.23	78.3±4.7
phenanthridine	-6715.6	12.043	55.831	80.14	78.8±4.7
1,7-phenanthrolene	-6770.3	12.072	56.285		79.4±4.8
4,7-phenanthrolene	-6902.7	12.223	57.386		80.8±4.9

$$\Delta_{\text{l}}^{\text{g}}H_{\text{m}}(298.15 \text{ K})/\text{kJmol}^{-1} = (1.286 \pm 0.083)\Delta_{\text{sln}}^{\text{g}}H_{\text{m}}(464 \text{ K}) + (7.00 \pm 0.94) \quad r^2 = 0.9834 \quad (14)$$

Run 9

T/K	474	479.1	484	489	494	498.9	503.9
				t/min			
cyclopentane	3.228	3.247	3.261	3.281	3.297	3.315	3.336
tributylamine	3.787	3.752	3.714	3.687	3.665	3.648	3.637
2-benzylpyridine	5.408	5.172	4.965	4.791	4.644	4.517	4.413
7,8-benzoquinoline	10.668	9.71	8.888	8.191	7.609	7.106	6.682
acridine	10.943	9.945	9.088	8.364	7.754	7.233	6.793
9-methylcarbazole	11.299	10.233	9.326	8.557	7.914	7.367	6.901
4,7-phenanthroline	12.751	11.481	10.394	9.477	8.712	8.051	7.499

	slope T/K	intercept	$\Delta_{\text{sln}}^{\text{g}}H_{\text{m}}(489 \text{ K})$ kJ·mol ⁻¹	$\Delta_{\text{l}}^{\text{g}}H_{\text{m}}(298.15 \text{ K})$ kJ·mol ⁻¹ (lit)	$\Delta_{\text{l}}^{\text{g}}H_{\text{m}}(298.15 \text{ K})$ kJ·mol ⁻¹ (calcd)
Run 9					
tributylamine	-4949.8	11.022	41.150	62.70	62.6±2.4
2-benzylpyridine	-5645.5	11.132	46.935		70.0±2.7
7,8-benzoquinoline	-6396.3	11.488	53.176	77.23	78.0±3.0
acridine	-6429.5	11.522	53.452	78.63	78.3±3.0
9-methylcarbazole	-6539.1	11.709	54.364		79.5±3.1
4,7-phenanthroline	-6625.9	11.726	55.085	80.80	80.4±3.1

$$\Delta_{\text{l}}^{\text{g}}H_{\text{m}}(298.15 \text{ K})/\text{kJmol}^{-1} = (1.276 \pm 0.056)\Delta_{\text{sln}}^{\text{g}}H_{\text{m}}(489 \text{ K}) + (10.12 \pm 0.063) \quad r^2 = 0.9960 \quad (15)$$

Run 10

T/K	472.9	478	483	487.8	492.8	497.7	502.6
				t/min			
cyclopentane	3.27	3.282	3.288	3.304	3.312	3.326	3.348
tributylamine	3.834	3.784	3.738	3.709	3.677	3.655	3.647
2-benzylpyridine	5.458	5.203	4.982	4.81	4.652	4.521	4.42
7,8-benzoquinoline	10.774	9.767	8.918	8.221	7.62	7.113	6.694
acridine	11.076	10.017	9.134	8.402	7.771	7.243	6.806
9-methylcarbazole	11.421	10.299	9.362	8.592	7.928	7.371	6.914
4,7-phenanthroline	12.903	11.563	10.445	9.521	8.725	8.064	7.514

	slope T/K	intercept	$\Delta_{\text{sln}}^{\text{g}}H_{\text{m}}(488 \text{ K})$ kJ·mol ⁻¹	$\Delta_{\text{l}}^{\text{g}}H_{\text{m}}(298.15 \text{ K})$ kJ·mol ⁻¹ (lit)	$\Delta_{\text{l}}^{\text{g}}H_{\text{m}}(298.15 \text{ K})$ kJ·mol ⁻¹ (calcd)
Run 10					
tributylamine	-5081.1	11.32	42.242	62.70	62.7±2.6
2-benzylpyridine	-5712.8	11.301	47.494		69.5±2.9
7,8-benzoquinoline	-6473.9	11.677	53.822	77.23	77.7±3.3
acridine	-6527.7	11.751	54.269	78.63	78.2±3.3
9-methylcarbazole	-6629.4	11.923	55.114		79.3±3.4
4,7-phenanthroline	-6721.7	11.951	55.881	80.80	80.3±3.4

$$\Delta_{\text{l}}^{\text{g}}H_{\text{m}}(298.15 \text{ K})/\text{kJmol}^{-1} = (1.292 \pm 0.06)\Delta_{\text{sln}}^{\text{g}}H_{\text{m}}(488 \text{ K}) + (8.09 \pm 0.58) \quad r^2 = 0.9978 \quad (16)$$

Run 11

T/K	478.8	483.9	488.9	493.7	498.7	503.7	508.7
				t/min			
cyclopentane	3.366	3.355	3.373	3.391	3.407	3.425	3.447
tributylamine	3.888	3.822	3.792	3.771	3.752	3.739	3.733
4-phenylpyrimidine	5.354	5.108	4.934	4.786	4.656	4.548	4.461
4,4-bipyridyl (anhyd)	5.88	5.561	5.328	5.13	4.957	4.813	4.694
7,8-benzoquinoline	10.054	9.144	8.427	7.826	7.311	6.875	6.506
acridine	10.299	9.35	8.605	7.977	7.442	6.986	6.603
4,7-phenanthrolene	11.884	10.686	9.751	8.957	8.282	7.715	7.235

	slope T/K	intercept	$\Delta_{\text{sln}}^{\text{g}}H_{\text{m}}(494 \text{ K})$ kJ·mol ⁻¹	$\Delta_{\text{l}}^{\text{g}}H_{\text{m}}(298.15 \text{ K})$ kJ·mol ⁻¹ (lit)	$\Delta_{\text{l}}^{\text{g}}H_{\text{m}}(298.15 \text{ K})$ kJ·mol ⁻¹ (calcd)
Run 11					
tributylamine	-4894.2	10.877	40.688	62.70	62.6±2.4
4-phenylpyrimidine	-5488.5	10.781	45.629		68.8±2.5
4,4-bipyridyl (anhyd)	-5715.2	11.02	47.514		71.1±2.6
7,8-benzoquinoline	-6375.6	11.421	53.005	77.23	78.0±3.0
acridine	-6416.2	11.469	53.342	78.63	78.4±3.0
4,7-phenanthrolene	-6605.8	11.66	54.918	80.80	80.4±3.1

$$\Delta_{\text{l}}^{\text{g}}H_{\text{m}}(298.15 \text{ K})/\text{kJmol}^{-1} = (1.246 \pm 0.055)\Delta_{\text{sln}}^{\text{g}}H_{\text{m}}(494 \text{ K}) + (11.9 \pm 0.64) \quad r^2 = 0.9960 \quad (19)$$

Run 12

T/K	473.8	478.7	483.7	488.7	493.7	498.8	503.7
				t/min			
cyclopentane	3.347	3.387	3.364	3.38	3.392	3.415	3.423
tributylamine	3.927	3.91	3.831	3.8	3.772	3.757	3.736
4-phenylpyrimidine	5.591	5.384	5.122	4.943	4.788	4.662	4.546
4,4-bipyridyl (anhyd)	6.199	5.913	5.578	5.337	5.133	4.962	4.812
7,8-benzoquinoline	11.044	10.101	9.171	8.443	7.832	7.311	6.876
acridine	11.34	10.349	9.378	8.623	7.981	7.444	6.985
4,7-phenanthrolene	13.216	11.945	10.722	9.764	8.962	8.291	7.713

	slope T/K	intercept	$\Delta_{\text{sln}}^{\text{g}}H_{\text{m}}(489 \text{ K})$ kJ·mol ⁻¹	$\Delta_{\text{l}}^{\text{g}}H_{\text{m}}(298.15 \text{ K})$ kJ·mol ⁻¹ (lit)	$\Delta_{\text{l}}^{\text{g}}H_{\text{m}}(298.15 \text{ K})$ kJ·mol ⁻¹ (calcd)
Run 12					
tri-n-butylamine	-4965.2	11.025	41.279	62.70	62.6±2.2
4-phenylpyrimidine	-5547.4	10.902	46.119		68.7±2.4
4,4-bipyridyl (anhy)	-5769.4	11.131	47.965		71.1±2.5
7,8-benzoquinoline	-6418.3	11.509	53.359	77.23	77.9±2.7
acridine	-6465.4	11.57	53.751	78.63	78.4±2.8
4,7-phenanthrolene	-6659.6	11.77	55.365	80.80	80.4±2.8

$$\Delta_{\text{l}}^{\text{g}}H_{\text{m}}(298.15 \text{ K})/\text{kJmol}^{-1} = (1.264 \pm 0.05)\Delta_{\text{sln}}^{\text{g}}H_{\text{m}}(489 \text{ K}) + (10.46 \pm 0.57) \quad r^2 = 0.9968 \quad (20)$$

Run 13

<i>T</i> /K	474.7	479.7	484.7	489.7 <i>t</i> /min	494.7	499.7	504.8
cyclopentane	3.252	3.266	3.279	3.297	3.311	3.325	3.346
tri- <i>n</i> -butylamine	3.81	3.765	3.727	3.7	3.676	3.656	3.646
2-benzylpyridine	5.418	5.175	4.968	4.797	4.648	4.52	4.418
2,4-bipyridine	6.09	5.76	5.482	5.248	5.047	4.872	4.73
7,8-benzoquinoline	10.701	9.718	8.893	8.205	7.617	7.11	6.688
acridine	10.999	9.966	9.106	8.384	7.769	7.242	6.802
9-methylcarbazole	11.342	10.248	9.338	8.573	7.925	7.37	6.91
4,7-phenanthroline	12.817	11.505	10.415	9.499	8.723	8.063	7.511

	slope <i>T</i> /K	intercept	$\Delta_{\text{sln}}^{\text{g}}H_{\text{m}}(490 \text{ K})$ kJ·mol ⁻¹	$\Delta_{\text{l}}^{\text{g}}H_{\text{m}}(298.15 \text{ K})$ kJ·mol ⁻¹ (lit)	$\Delta_{\text{l}}^{\text{g}}H_{\text{m}}(298.15 \text{ K})$ kJ·mol ⁻¹ (calcd)
Run 13					
tri- <i>n</i> -butylamine	-4946.8	11.008	41.126	62.70	62.7±1.4
2-benzylpyridine	-5605.7	11.04	46.603	69.8	69.7±1.5
2,4-bipyridine	-5721.2	11.013	47.564		70.9±1.6
7,8-benzoquinoline	-6383.2	11.443	53.068	77.23	77.9±1.7
acridine	-6428.4	11.499	53.443	78.63	78.4±1.7
9-methylcarbazole	-6531.4	11.673	54.299	79.5	79.4±1.8
4,7-phenanthroline	-6623.5	11.7	55.066	80.80	80.5±1.8

$$\Delta_{\text{l}}^{\text{g}}H_{\text{m}}(298.15 \text{ K})/\text{kJmol}^{-1} = (1.272 \pm 0.033)\Delta_{\text{sln}}^{\text{g}}H_{\text{m}}(490 \text{ K}) + (10.28 \pm 0.40) \quad r^2 = 0.9974 \quad (21)$$

Run 14

	474.8	479.6	484.6	489.7 <i>t</i> /min	494.7	499.7	504.7
cyclopentane	3.279	3.29	3.297	3.297	3.317	3.331	3.351
tributylamine	3.843	3.791	3.747	3.701	3.682	3.662	3.651
2-benzylpyridine	5.468	5.209	4.995	4.801	4.658	4.528	4.424
2,4-bipyridine	6.145	5.796	5.509	5.25	5.055	4.88	4.736
7,8-benzoquinoline	10.797	9.773	8.935	8.21	7.627	7.12	6.699
acridine	11.095	10.022	9.145	8.388	7.778	7.253	6.808
9-Methylcarbazole	11.44	10.306	9.379	8.581	7.937	7.384	6.918
4,7-phenanthroline	12.924	11.567	10.459	9.501	8.733	8.073	7.52

	slope T/K	intercept	$\Delta_{\text{sln}}^{\text{g}}H_{\text{m}}(490 \text{ K})$ $\text{kJ}\cdot\text{mol}^{-1}$	$\Delta_{\text{l}}^{\text{g}}H_{\text{m}}(298.15 \text{ K})$ $\text{kJ}\cdot\text{mol}^{-1}$ (lit)	$\Delta_{\text{l}}^{\text{g}}H_{\text{m}}(298.15 \text{ K})$ $\text{kJ}\cdot\text{mol}^{-1}$ (calcd)
Run 14					
tri-n-butylamine	-5030.2	11.177	41.819	62.70	62.7±1.4
2-benzylpyridine	-6452.6	11.583	47.243	69.80	69.7±1.6
2,4-bipyridine	-5682.7	11.194	48.165		70.9±1.6
7,8-benzoquinoline	-6503.1	11.65	53.644	77.20	77.9±1.8
acridine	-6599.6	11.81	54.064	78.60	78.4±1.8
9-methylcarbazole	-6693	11.84	54.867	79.50	79.5±1.8
4,7-phenanthroline	-5793.5	11.159	55.643	80.80	80.5±1.8

$$\Delta_{\text{l}}^{\text{g}}H_{\text{m}}(298.15 \text{ K})/\text{kJmol}^{-1} = (1.285\pm0.032)\Delta_{\text{sln}}^{\text{g}}H_{\text{m}}(490 \text{ K}) + (8.96\pm0.39) \quad r^2 = 0.9976 \quad (22)$$