

Kinetics:

Method: both sets of peaks for the methyl groups in the 3- position of the phospholyls were summed; the percentage of *rac*- component in the solution was expressed as a percentage of the total. An Arrhenius plot was found to be linear up to 10% *rac*-.

Compound meso-2	name	integrated at
25g/L in toluene d8 (10mg in 0,4mL)	meso1	-16,7
	rac1	-8,3
	rac2	20,6
	meso2	32,4 ppm

Integrals at T=-10°C; rac normalised as % of total cobalt in solution

time (min)	meso1	rac1	rac2	meso2	rac norm1	rac norm2	rac average
0	19	1	0,99	18,8	5	5,00252653	5,00126326
5	18,9	1	0,96	18,2	5,02512563	5,01043841	5,01778202
10	18,8	1	0,91	17,1	5,05050505	5,05274847	5,05162676
15	18,6	1	0,96	17,9	5,10204082	5,09013786	5,09608934
20	18,55	1	0,99	18,3	5,11508951	5,13219285	5,12364118
30	18,5	1	0,99	18,3	5,12820513	5,13219285	5,13019899
40	18,45	1	0,92	17	5,14138817	5,13392857	5,13765837
50	18,3	1	0,96	17,6	5,18134715	5,17241379	5,17688047
60	18,2	1	0,98	17,8	5,20833333	5,21831736	5,21332535
70	18,1	1	0,97	17,55	5,23560209	5,23758099	5,23659154
80	17,9	1	0,95	17,05	5,29100529	5,27777778	5,28439153

T=+12°C

time (min)	meso1	rac1	rac2	meso2	rac norm1	rac norm2	rac average
0	19,05	1	1,11	21,15	4,98753117	4,98652291	4,98702704
10	13,85	1	1,04	14,4	6,73400673	6,7357513	6,73487901
20	10,95	1	1,12	12,25	8,36820084	8,37696335	8,37258209
30	9	1	1,18	10,65	10	9,97464074	9,98732037
40	8,85	1	1,16	10,25	10,1522843	10,1665206	10,1594024
50	7,9	1	1,07	8,45	11,2359551	11,2394958	11,2377254
60	6,85	1	1,13	7,75	12,7388535	12,7252252	12,7320394
70	6,6	1	1,08	7,15	13,1578947	13,1227217	13,1403082
80	6,05	1	1,14	6,9	14,1843972	14,1791045	14,1817508
90	5,6	1	1,11	6,2	15,1515152	15,1846785	15,1680968
100	5,4	1	1,1	5,95	15,625	15,6028369	15,6139184
110	4,85	1	1,11	5,4	17,0940171	17,0506912	17,0723542
120	4,6	1	1,04	4,8	17,8571429	17,8082192	17,832681

T=+20°C

time (min)	meso1	rac1	rac2	meso2	rac norm1	rac norm2	rac average
0	19,1	1	1,06	20,25	4,97512438	4,97419052	4,97465745
2	15,4	1	0,87	13,4	6,09756098	6,09670638	6,09713368
4	13,9	1	0,98	13,6	6,7114094	6,72153635	6,71647287
6	12,5	1	0,93	11,6	7,40740741	7,42218675	7,41479708
8	11	1	0,94	10,35	8,33333333	8,32595217	8,32964275
10	10,3	1	0,93	9,6	8,84955752	8,83190883	8,84073318
12	9,7	1	0,96	9,3	9,34579439	9,35672515	9,35125977
14	9,1	1	1	9,1	9,9009901	9,9009901	9,9009901
16	8,4	1	0,96	8,1	10,6382979	10,5960265	10,6171622
18	8	1	0,97	7,75	11,11111111	11,1238532	11,1174822
20	7,85	1	0,96	7,55	11,299435	11,2808461	11,2901405
22	7,75	1	0,94	7,25	11,4285714	11,4774115	11,4529915
24	7,6	1	1	7,6	11,627907	11,627907	11,627907
26	7,55	1	0,95	7,15	11,6959064	11,7283951	11,7121507
28	7,45	1	0,96	7,15	11,8343195	11,837238	11,8357788
30	7,4	1	1	7,4	11,9047619	11,9047619	11,9047619
65	3,75	1	0,99	3,7	21,0526316	21,108742	21,0806868
100	2,85	1	0,96	2,75	25,974026	25,8760108	25,9250184
130	2,65	1	0,92	2,45	27,3972603	27,2997033	27,3484818
160	2,4	1	0,99	2,4	29,4117647	29,2035398	29,3076523
195	2,3	1	0,94	2,15	30,3030303	30,420712	30,3618711

225 2,2 1 0,96 2,15 31,25 30,8681672 31,0590836

T=+30°C

time (min)	meso1	rac1	rac2	meso2	rac norm1	rac norm2	rac average
0	18,9	1	0,98	18,55	5,02512563	5,01792115	5,02152339
5	8,15	1	0,96	7,85	10,9289617	10,8967083	10,912835
10	7,75	1	0,94	7,25	11,4285714	11,4774115	11,4529915
15	7,6	1	0,97	7,4	11,627907	11,5890084	11,6084577
20	7,5	1	1	7,5	11,7647059	11,7647059	11,7647059
25	7,2	1	0,95	6,85	12,195122	12,1794872	12,1873046
30	7,15	1	0,97	6,95	12,2699387	12,2474747	12,2587067
40	7	1	0,95	6,65	12,5	12,5	12,5
50	6,65	1	1	6,65	13,0718954	13,0718954	13,0718954
60	6,4	1	1	6,4	13,5135135	13,5135135	13,5135135
70	6,2	1	0,97	6	13,8888889	13,9167862	13,9028376
80	6,1	1	0,96	5,85	14,084507	14,0969163	14,0907117
90	5,8	1	0,98	5,7	14,7058824	14,6706587	14,6882705

Overall

Vexp (arb units)	T (°C)	1/T (K ⁻¹)	ln(Vexp) (arb units)
0,0061	-10	0,0038	-5,09947
0,1686	12	0,003507	-1,78023
0,3595	20	0,003411	-1,02304
1,1831	30	0,003299	0,168138





