

**Rotational Diffusion of Nonpolar and Charged Solutes in
Propylammonium Nitrate–Propylene Glycol Mixtures: Does the
Organized Structure of the Ionic Liquid Influence Solute Rotation?**

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Supporting Information

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TABLE 1: Reorientation Times of 9-PA and R110 in PAN as a Function of Temperature Along with Solvent Viscosity

T / K	$\eta / \text{mPa s}$	τ_r / ns	
		9-PA	R110
298	70.4	1.62	8.03
303	57.9	1.35	6.56
308	47.8	1.11	5.37
313	40.2	0.93	4.58
318	34.0	0.78	3.92
323	28.9	0.68	3.27
328	24.9	0.56	2.77
338	19.0	0.42	2.00
348	15.0	0.33	1.53

TABLE 2: Reorientation Times of 9-PA and R110 in PG as a Function of Temperature Along with Solvent Viscosity

T / K	$\eta / \text{mPa s}$	τ_r / ns	
		9-PA	R110
298	43.9	1.08	5.23
303	33.3	0.77	4.17
308	25.7	0.59	3.21
313	20.1	0.48	2.53
318	16.0	0.38	2.01
323	12.9	0.31	1.62
328	10.5	0.26	1.28
338	7.12	-----	0.88
348	5.06	-----	0.62

TABLE 3: Reorientation Times of 9-PA and R110 in $\chi_{\text{PAN}} = 0.2$ as a Function of Temperature Along with Solvent Viscosity

T / K	$\eta / \text{mPa s}$	τ_r / ns	
		9-PA	R110
298	41.1	1.16	4.92
303	32.3	0.92	3.97
308	25.8	0.73	3.22
313	20.8	0.61	2.57
318	17.1	0.48	2.08
323	14.1	0.38	1.72
328	11.9	0.33	1.45
338	8.60	0.24	1.01
348	6.37	-----	0.73

TABLE 4: Reorientation Times of 9-PA and R110 in $\chi_{\text{PAN}} = 0.4$ as a Function of Temperature Along with Solvent Viscosity

T / K	$\eta / \text{mPa s}$	τ_r / ns	
		9-PA	R110
298	43.7	1.27	5.73
303	35.2	1.02	4.75
308	28.5	0.82	3.79
313	23.4	0.67	3.19
318	19.3	0.55	2.67
323	16.4	0.49	2.15
328	13.8	0.41	1.83
338	10.3	0.30	1.26
348	7.84	-----	0.93

TABLE 5: Reorientation Times of 9-PA and R110 in $\chi_{\text{PAN}} = 0.6$ as a Function of Temperature Along with Solvent Viscosity

T / K	$\eta / \text{mPa s}$	τ_r / ns	
		9-PA	R110
298	50.5	1.35	6.22
303	41.1	1.10	5.11
308	33.7	0.89	4.20
313	27.9	0.70	3.53
318	23.3	0.59	2.91
323	19.9	0.49	2.43
328	17.0	0.42	2.05
338	12.8	0.31	1.48
348	9.89	-----	1.12

TABLE 6: Reorientation Times of 9-PA and R110 in $\chi_{\text{PAN}} = 0.8$ as a Function of Temperature Along with Solvent Viscosity

T / K	$\eta / \text{mPa s}$	τ_r / ns	
		9-PA	R110
298	58.9	1.51	6.93
303	48.3	1.21	5.78
308	39.8	1.00	4.85
313	33.3	0.82	4.14
318	28.1	0.71	3.51
323	24.0	0.59	2.92
328	20.7	0.53	2.50
338	15.8	0.39	1.81
348	12.3	-----	1.36