

Table S.1: C_{RH} and ϕ values for simultaneous fits of CN signal decay and product HCN formation. Typical uncertainties in ϕ for $C_{RH} \neq 0$ are ± 0.03 .

Pentane Solute Simultaneous Rise and Decay Fits in CH_2Cl_2 and CHCl_3								
CH_2Cl_2	C_{RH} / M	0	0.04	0.07	0.14	0.27	0.52	0.99
	ϕ	0.818	0.81	0.80	0.84	0.89	0.89	0.89
CHCl_3	C_{RH} / M	0	0.14	0.27	0.52	0.99		
	ϕ	0.84	0.90	0.94	0.94	0.94		

Table S.2: C_{RH} and ϕ values for fits to CN signal decay in the solvents CH_2Cl_2 , CHCl_3 , and CH_3CCl_3 . Typical ϕ uncertainties for $C_{RH} \neq 0$ are ± 0.03

Solutes in CH_2Cl_2								
n-pentane	C_{RH} / M	0	0.04	0.07	0.14	0.27	0.52	0.99
	ϕ	0.818	0.83	0.83	0.86	0.89	0.92	0.94
n-hexane	C_{RH} / M	0	0.25	0.47	0.91	1.61		
	ϕ	0.818	0.87	0.90	0.93	0.96		
n-heptane	C_{RH} / M	0	0.15	0.24	0.47	0.88		
	ϕ	0.818	0.87	0.89	0.91	0.94		
cyclopentane	C_{RH} / M	0	0.25	0.47	0.91	1.67		
	ϕ	0.818	0.86	0.90	0.93	0.96		
cyclohexane	C_{RH} / M	0	0.15	0.24	0.47	0.90		
	ϕ	0.818	0.87	0.88	0.90	0.93		
cycloheptane	C_{RH} / M	0	0.16	0.27	0.52	0.99	1.79	
	ϕ	0.818	0.85	0.87	0.90	0.93	0.96	
methanol	C_{RH} / M	0	0.15	0.29	0.44	0.58		
	ϕ	0.818	0.84	0.85	0.87	0.88		
ethanol	C_{RH} / M	0	0.15	0.30	0.45	0.59		
	ϕ	0.818	0.84	0.84	0.86	0.88		
1-propanol	C_{RH} / M	0	0.15	0.29	0.44	0.56		
	ϕ	0.818	0.83	0.85	0.86	0.87		
2-propanol	C_{RH} / M	0	0.14	0.28	0.42	0.56		
	ϕ	0.818	0.83	0.85	0.87	0.88		
1-butanol	C_{RH} / M	0	0.15	0.30	0.44	0.58		
	ϕ	0.818	0.84	0.85	0.87	0.88		
cyclohexyl chloride	C_{RH} / M	0	0.10	0.20	0.39	0.74	1.61	
	ϕ	0.818	0.81	0.81	0.84	0.88	0.90	
1-chlorobutane	C_{RH} / M	0	0.30	0.58	1.09	1.95		
	ϕ	0.818	0.82	0.84	0.88	0.91		
2-chlorobutane	C_{RH} / M	0	0.29	0.57	1.07	1.92		
	ϕ	0.818	0.82	0.83	0.84	0.88		
1,2-dichlorobutane	C_{RH} / M	0	0.30	0.59	1.10	1.96		

	ϕ	0.818	0.79	0.80	0.82	0.84	
1,4-dichlorobutane	C_{RH} / M	0	0.28	0.55	1.04	1.86	
	ϕ	0.818	0.82	0.84	0.83	0.85	
Solute in CHCl_3							
n-pentane	C_{RH} / M	0	0.14	0.27	0.52	0.99	
	ϕ	0.84	0.91	0.94	0.93	0.98	
n-heptane	C_{RH} / M	0	0.15	0.24	0.47	0.87	
	ϕ	0.84	0.88	0.91	0.95	0.96	
methanol	C_{RH} / M	0	0.15	0.29	0.44	0.58	
	ϕ	0.84	0.81	0.83	0.86	0.89	
1-chlorobutane	C_{RH} / M	0	0.58	1.09	1.95		
	ϕ	0.84	0.85	0.86	0.90		
2-chlorobutane	C_{RH} / M	0	0.29	0.57	1.07	1.92	
	ϕ	0.84	0.83	0.81	0.82	0.84	
Solute in CH_3CCl_3							
n-heptane	C_{RH} / M	0	0.15	0.24	0.47	0.87	
	ϕ	0.868	0.91	0.93	0.96	0.99	
methanol	C_{RH} / M	0	0.15	0.29	0.44	0.58	
	ϕ	0.868	0.86	0.90	0.93	0.95	
1-chlorobutane	C_{RH} / M	0	0.15	0.30	0.58	1.09	1.95
	ϕ	0.868	0.86	0.87	0.88	0.89	0.94
2-chlorobutane	C_{RH} / M	0	0.15	0.29	0.57	1.07	1.92
	ϕ	0.868	0.85	0.85	0.86	0.86	0.89