

Technical Bulletin K0510
Chemical Shifts of Common Residual Solvents

We found a very informative article which lists the chemical shift of residual protonated solvents in deuterated solvents. The proton and carbon shifts of many common laboratory solvent residual signals are documented. Below is an excerpt.

NMR Chemical Shifts of Common Laboratory Solvents as Trace Impurities

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Solvent residual peak	Proton	Multiplet	CDCl_3	$(\text{CD}_3)_2\text{CO}$	$(\text{CD}_3)_2\text{SO}$	C_6D_6	CD_3CN	CD_3OD	D_2O
H ₂ O		s	7.26	2.05	2.50	7.16	1.94	3.31	4.79
Acetic acid	CH ₃	s	1.56	2.84	3.33	0.40	2.13	4.87	
Acetone	CH ₃	s	2.10	1.96	1.91	1.55	1.96	1.99	2.08
Acetonitrile	CH ₃	s	2.17	2.09	2.09	1.55	2.08	2.15	2.22
Benzene	CH	s	2.10	2.05	2.07	1.55	1.96	2.03	2.06
Chloroform	CH	s	7.36	7.36	7.37	7.15	7.37	7.33	
1,2-dichloroethane	CH	s	7.26	8.02	8.32	6.15	7.58	7.90	
Dichloromethane	CH ₂	s	3.73	3.87	3.90	2.90	3.81	3.78	
Dimethylformamide	CH ₂	s	5.30	5.63	5.76	4.27	5.44	5.49	
	CH	s	8.02	7.96	7.95	7.63	7.92	7.97	7.92
	CH ₃	s	2.96	2.94	2.89	2.36	2.89	2.99	3.01
	CH ₃	s	2.88	2.78	2.73	1.86	2.77	2.86	2.85
Dimethyl sulfoxide	CH ₃	s	2.62	2.52	2.54	1.68	2.50	2.65	2.71
Ethanol	CH ₃	t, 7	1.25	1.12	1.06	0.96	1.12	1.19	1.17
	CH ₂	q, 7	3.72	3.57	3.44	3.34	3.54	3.60	3.65
	OH	s	1.32	3.39	4.63		2.47		
Ethyl acetate	CH ₃ CO	s	2.05	1.97	1.99	1.65	1.97	2.01	2.07
	CH ₂ CH ₃	q, 7	4.12	4.05	4.03	3.89	4.06	4.09	4.14
	CH ₂ CH ₃	t, 7	1.26	1.20	1.17	0.92	1.20	1.24	1.24
Ethylene glycol	CH	s	3.76	3.28	3.34	3.41	3.51	3.59	3.65
<i>n</i> -Hexane	CH ₃	t	0.88	0.88	0.86	0.89	0.89	0.90	
	CH ₂	m	1.26	1.28	1.25	1.24	1.28	1.29	
Methanol	CH ₃	s	3.49	3.31	3.16	3.07	3.28	3.34	3.34
	OH	s	1.09	3.12	4.01		2.16		
2-Propanol	CH ₃	d, 6	1.22	1.10	1.04	0.95	1.09	1.50	1.17
	CH	sep, 6	4.04	3.90	3.78	3.67	3.87	3.92	4.02
Pyridine	CH ₍₂₎	m	8.62	8.58	8.58	8.53	8.57	8.53	8.52
	CH ₍₃₎	m	7.29	7.35	7.39	6.66	7.33	7.44	7.45
	CH ₍₄₎	m	7.68	7.76	7.79	6.98	7.73	7.85	7.87
Tetrahydrofuran	CH ₂	m	1.85	1.79	1.76	1.40	1.80	1.87	1.88
	CH ₂ O	m	3.76	3.63	3.60	3.57	3.64	3.71	3.74
Toluene	CH ₃	s	2.36	2.32	2.30	2.11	2.33	2.32	
	CH(<i>o/p</i>)	m	7.17	7.1-7.2	7.18	7.02	7.1-7.3	7.16	
	CH(<i>m</i>)	m	7.25	7.1-7.2	7.25	7.13	7.1-7.3	7.16	