

NMR Solvent data chart

Solvent	¹ H Chemical Shift* (ppm from TMS) (multiplicity)	JHD (Hz)	Carbon-13 Chemical Shift* (ppm from TMS) (multiplicity)	JCD (Hz)	¹ H Chemical Shift of HOD** (ppm from TMS)	Density at 20°C***	Melting point (°C)***	Boiling point (°C)***	Dielectric Constant	Molecular Weight***
Acetic acid-d ₄	11.65 (1) 2.04 (5)	2.2	178.99 (1) 20.0 (7)	20	11.5	1.12	16.7	118	6.1	64.08
Acetone-d ₆	2.05 (5)	2.2	206.68 (1) 29.92 (7)	0.9 19.4	2.8	0.87	-94	56.5	20.7	64.12
Acetonitrile-d ₃	1.94 (5)	2.5	118.69 (1) 1.39 (7)	21	2.1	0.84	-45	81.6	37.5	44.07
Benzene-d ₆	7.16 (1)		128.39 (3)	24.3	0.4	0.95	5.5	80.1	2.3	84.15
Chloroform-d	7.24 (1)		77.23 (3)	32.0	1.5	1.50	-63.5	61-62	4.8	120.38
Cyclohexane-d ₁₂	1.38 (1)		26.43 (5)	19	0.8	0.89	6.47	80.7	2.0	96.24
Deuterium oxide	4.80 (DSS) 4.81 (TSP)		NA	NA	4.8	1.11	3.81	101.42	78.5	20.03
N,N-Dimethyl-formamide-d ₇	8.03 (1) 2.92 (5) 2.75 (5)	1.9 1.9	163.15 (3) 34.89 (7) 29.76 (7)	29.4 21.0 21.1	3.5	1.03	-61	153	36.7	80.14
1,2 Dichlorobenzene-d ₄	6.93 (1) 7.19 (1)		127.19 (3) 130.04 (3) 132.39		0.8	1.3	-17	181	9.8	151.03
Dimethyl sulfoxide-d ₆	2.50 (5)	1.9	39.51 (7)	21.0	3.3	1.19	18.45	189	46.7	84.17
1,4-Dioxane-d ₈	3.53 (m)		66.66 (5)	21.9	2.4	1.13	11.8	101.1	2.2	96.16
Ethanol-d ₆	5.19 (1) 3.56 (1) 1.11 (m)		56.96 (5) 17.31 (7)	22 19	5.3	0.89	-114.1	78.5	24.5	52.11
Hexafluoroisopropanol-d ₂	4.41 (m) 4.86 (1)		68.07 (m) 120.66 (4)			1.6	-4	59		170.05
Isopropanol-d ₈	1.1 (1) 3.89 (1) 5.27 (1)		25.8 (7) 64.5 (3)			0.9	-89	83	18.3	68.4
Methanol-d ₄	4.78 (1) 3.31 (5)	1.7	49.15 (7)	21.4	4.9	0.89	-97.8	64.7	32.7	36.07
Methylene chloride-d ₂	5.32 (3)	1.1	54.00 (5)	27.2	1.5	1.35	-95	39.75	8.9	86.95
Pyridine-d ₅	8.74 (1) 7.58 (1) 7.22 (1)		150.35 (3) 135.91 (3) 123.87 (3)	27.5 24.5 25	5	1.05	-42	115-116	12.4	84.13
Tetrachloroethane-d ₂	6.0 (1)		73.78 (3)			1.62	-44	147	8.2	169.86
Tetrahydrofuran-d ₈	3.58 (1) 1.73 (1)		67.57 (5) 25.37 (5)	22.2 20.2	2.4-2.5	0.99	-108.5	66	7.6	80.16
Toluene-d ₈	7.09 (m) 7.00 (1) 6.98 (5) 2.09 (5)	2.3	137.86 (1) 129.24 (3) 128.33 (3) 125.49 (3) 20.4 (7)	23 24 24 19	0.4	0.94	-95	110.6	2.4	100.19
Trifluoroacetic Acid-d	11.50 (1)		164.2 (4) 116.6 (4)		11.5	1.41	-15.4	72.4		115.03
Trifluoroethanol-d ₃	5.02 (1) 3.88 (4x3)	2(9)	126.3 (4) 61.5 (4x5)	22	5	1.41	-43.3	75		103.06

* The ¹H spectra of the residual protons and ¹³C spectra were obtained on a Varian Gemini 200 spectro-meter at 295°K. The NMR solvents used to acquire these spectra contain a maximum of 0.05% and 1.0% TMS (v/v) respectively. Since deuterium has a spin of 1, triplets arising from coupling to deuterium have the intensity ratio of 1:1:1. «m» denotes a broad peak with some fine structures. It should be noted that chemical shifts, can be dependent on solvent, concentration and temperature.

** Approximate values only, may vary with pH, concentration and temperature.

*** Melting and boiling points are those of the corresponding unlabeled compound (except for D₂O). These temperature limits can be used as a guide to determine the useful liquid range of the solvents. Information gathered from the Merck Index - Eleventh Edition.

S. Budavari, M.J. O'Neil, A. Smith, P.E. Heckelman, The Merck Index, an Encyclopedia of Chemicals, Drugs and Biologicals - Eleventh Edition, Merck Co., Inc. Rahway, NJ, 1989.