

Solvent	Formula	m.p. (°C)	b.p. (°C)	Density (g/cm <sup>3</sup> )	Dielectric Constant	tan δ	Log K <sub>ow</sub>	e <sup>o</sup> (SiO <sub>2</sub> )	e <sup>o</sup> (Al <sub>2</sub> O <sub>3</sub> )	η(cp) (20 °C)	P	UV Cutoff nm	Solubility in water	Health hazards
<i>Acetic Acid</i>	CH <sub>3</sub> COOH	17	118	1.049	6.2	0.174	-0.17	>0.73	large	1.25	6.2	260	∞	Corr.
<i>Acetone</i>	CH <sub>3</sub> (C=O)CH <sub>3</sub>	-95	56	0.790	21.01	0.054	-0.24	0.47	0.56	0.32	5.1	330	∞	
<i>Acetonitrile</i>	CH <sub>3</sub> C≡N	-48	81	0.786	36.64	0.062	-0.34	0.50	0.65	0.37	5.8	190	∞	
<i>Benzene</i>	C <sub>6</sub> H <sub>6</sub>	5	80	0.874	2.28		2.13	0.25	0.32	0.65	3	280	0.07 <sup>20</sup>	C, M, T
<i>Carbon disulfide</i>	CS <sub>2</sub>	-23	77	1.263	2.64		1.84	0.14	0.15	0.36		380	0.2 <sup>0</sup>	C, M, T
<i>Carbon tetrachloride</i>	CCl <sub>4</sub>	-23	77	1.594	2.24		2.83	0.14	0.18	0.97	1.6	265	0.08 <sup>20</sup>	C, M, T
<i>Chloroform</i>	CHCl <sub>3</sub>	-64	62	1.483	4.81	0.091	1.97	0.26	0.40	0.57	4.1	245	0.82 <sup>20</sup>	C, M, T
<i>Cyclohexane</i>	C <sub>6</sub> H <sub>12</sub>	7	81	0.779	2.02		3.44	-0.05	0.04	0.98	0.2	210		M, T?
<i>1,2-Dichloroethane</i>	C <sub>2</sub> H <sub>4</sub> Cl <sub>2</sub>	-35	84	1.235	10.36	0.127	1.48	0.32	0.42	0.79	3.7	230	0.87 <sup>20</sup>	C, M, T
<i>Dichloromethane</i>	CH <sub>2</sub> Cl <sub>2</sub>	-95	40	1.327	8.93	0.042	1.25	0.32	0.42	0.44	3.1	235	2 <sup>20</sup>	C, M, T
<i>Diethyl ether</i>	CH <sub>3</sub> CH <sub>2</sub> OCH <sub>2</sub> CH <sub>3</sub>	-116	36	0.714	4.27		0.89	0.38	0.38	0.22	2.8	218	7.5 <sup>20</sup>	M, T
<i>1,2-Dimethoxyethane</i>	CH <sub>3</sub> OCH <sub>2</sub> CH <sub>2</sub> OCH <sub>3</sub>	-58	84	0.863	7.20		-0.21			0.42		220	∞	M, T
<i>Dimethylsulfoxide</i>	CH <sub>3</sub> (S=O)CH <sub>3</sub>	18	189	1.101	47.24	0.825	-1.35	0.41	0.62	2.24	7.2	265	∞	M?
<i>1,4-Dioxane</i>	C <sub>4</sub> H <sub>8</sub> O <sub>2</sub>	12	101	1.034	2.22		-0.27	0.49	0.56	1.54	4.8	215	∞	M, T
<i>Ethanol</i>	CH <sub>3</sub> CH <sub>2</sub> OH	-114	78	0.789	25.3	0.941	-0.24	0.65	0.88	1.20	5.2	210	∞	M, T
<i>Ethyl acetate</i>	CH <sub>3</sub> COOCH <sub>2</sub> CH <sub>3</sub>	-84	78	0.900	6.08	0.059	0.73	0.38	0.58	0.46	4.3	255	8.5 <sup>20</sup>	M
<i>Hexane</i>	C <sub>6</sub> H <sub>14</sub>	-95	69	0.655	1.88	0.020	3.90	0	0	0.31	0.01	195		M, T?
<i>Isopropanol</i>	(CH <sub>3</sub> ) <sub>2</sub> CHOH	-90	82	0.785	20.2	0.799	0.05	0.63	0.82	2.35	4.3	210	∞	T
<i>Methanol</i>	CH <sub>3</sub> OH	-98	65	0.791	33	0.659	-0.77	0.73	0.95	0.60	5.1	210	∞	T
<i>Methylethyl ketone</i>	C <sub>4</sub> H <sub>8</sub> O	-86	80	0.805	18.51	0.079	0.29	0.39	0.51	0.43	4.5	330	35 <sup>10</sup>	T
<i>N,N-Dimethylformamide</i>	C <sub>3</sub> H <sub>7</sub> NO	-61	153	0.944	38.25	0.161	-1.01	0.76	0.91	0.91	6.4	270	∞	
<i>Nitromethane</i>	CH <sub>3</sub> NO <sub>2</sub>	-29	101	1.382	37.27	0.064	-0.33	0.54	0.64	0.65	5.3	380	10 <sup>20</sup>	
<i>n-Propanol</i>	CH <sub>3</sub> CH <sub>2</sub> CH <sub>2</sub> OH	-127	97	0.804	20.8	0.757	0.25	0.60	0.82	2.30	4.3	210	∞	T
<i>Pentane</i>	C <sub>5</sub> H <sub>12</sub>	-130	36	0.626	1.84		3.39	0.00*	0	0.24	0	195		M, T?
<i>Pyridine</i>	C <sub>5</sub> H <sub>5</sub> N	42	116	0.982	12.4		0.70		0.71	0.94	5.3	330	∞	M, T?
<i>Tetrahydrofuran</i>	C <sub>4</sub> H <sub>8</sub> O	-108	66	0.889	7.52	0.047	0.46	0.35	0.45	0.55	4.2	220	∞	T
<i>Toluene</i>	C <sub>6</sub> H <sub>5</sub> CH <sub>3</sub>	-95	111	0.867	2.38	0.040	2.73	0.23	0.29	0.59	2.4	286	0.05 <sup>16</sup>	T
<i>Water</i>	H <sub>2</sub> O	0	100	1.000	78.4	0.123		0.82	1.29	1.00	10.2	191		

**Legend:**

\* = defined values

tan δ= loss tangent at 2.45 GHz (Microwave)

Log K<sub>ow</sub>= partition coefficient of unionized compound between *n*-octanol and watere<sup>o</sup> = eluotropic strength (solvent strength parameter)

P = polarity index according to Snyder

η(cp) = viscosity of the compound at 20 °C

UV Cutoff = lower limit for the measurement in the UV-Vis spectrum

The solubility is given in g of solute in 100 g water. The superscript indicates the temperature it was recorded.

Health hazards: Corr=corrosive, C=carcinogen, M=mutagenic, T=teratogenic

**General Rules:**

1. Halogenated solvents possess a higher density than non-halogenated solvents.
2. Halogenated solvents are not flammable.
3. Ethers such as tetrahydrofuran and diethyl ether tend to form (explosive) peroxides. Thus, they can only be used for a limited time. Be careful when using them.
4. Low boiling solvents i.e., diethyl ether, dichloromethane, etc. can build up a significant pressure when used in extractions. Make sure that the solutions that you are using are at room temperature or below.