

SOLVENTS FOR ULTRAVIOLET SPECTROPHOTOMETRY

This table lists some solvents commonly used for sample preparation for ultraviolet spectrophotometry. The properties given are:

- λ_c : cutoff wavelength, below which the solvent absorption becomes excessive.
 ϵ : dielectric constant (relative permittivity); the temperature in °C is given as a superscript.
 t_b : normal boiling point.

References

1. Bruno, T. J., and Svoronos, P. D. N., *CRC Handbook of Basic Tables for Chemical Analysis*, CRC Press, Boca Raton, FL, 1989.
2. *Landolt-Börnstein, Numerical Data and Functional Relationships in Science and Technology, New Series, IV/6, Static Dielectric Constants of Pure Liquids and Binary Liquid Mixtures*, Springer-Verlag, Heidelberg, 1991.

| Name | λ_c /nm | ϵ | t_b /°C |
|---------------------------------------|-----------------|---------------------|-----------|
| Acetic acid | 260 | 6.20 ²⁰ | 117.9 |
| Acetone | 330 | 21.01 ²⁰ | 56.0 |
| Acetonitrile | 190 | 36.64 ²⁰ | 81.6 |
| Benzene | 280 | 2.28 ²⁰ | 80.0 |
| 2-Butanol | 260 | 17.26 ²⁰ | 99.5 |
| Butyl acetate | 254 | 5.07 ²⁰ | 126.1 |
| Carbon disulfide | 380 | 2.63 ²⁰ | 46 |
| Carbon tetrachloride | 265 | 2.24 ²⁰ | 76.8 |
| 1-Chlorobutane | 220 | 7.28 ²⁰ | 78.6 |
| Chloroform | 245 | 4.81 ²⁰ | 61.1 |
| Cyclohexane | 210 | 2.02 ²⁰ | 80.7 |
| 1,2-Dichloroethane | 226 | 10.42 ²⁰ | 83.5 |
| Dichloromethane | 235 | 8.93 ²⁵ | 40 |
| Diethyl ether | 218 | 4.27 ²⁰ | 34.5 |
| <i>N,N</i> -Dimethylacetamide | 268 | 38.85 ²¹ | 165 |
| <i>N,N</i> -Dimethylformamide | 270 | 38.25 ²⁰ | 153 |
| Dimethyl sulfoxide | 265 | 47.24 ²⁰ | 189 |
| 1,4-Dioxane | 215 | 2.22 ²⁰ | 101.5 |
| Ethanol | 210 | 25.3 ²⁰ | 78.2 |
| Ethyl acetate | 255 | 6.08 ²⁰ | 77.1 |
| Ethylene glycol dimethyl ether | 240 | 7.30 ²⁴ | 85 |
| Ethylene glycol monoethyl ether | 210 | 13.38 ²⁵ | 135 |
| Ethylene glycol monomethyl ether | 210 | 17.2 ²⁵ | 124.1 |
| Glycerol | 207 | 46.53 ²⁰ | 290 |
| Heptane | 197 | 1.92 ²⁰ | 98.5 |
| Hexadecane | 200 | 2.05 ²⁰ | 286.8 |
| Hexane | 210 | 1.89 ²⁰ | 68.7 |
| Methanol | 210 | 33.0 ²⁰ | 64.6 |
| Methylcyclohexane | 210 | 2.02 ²⁰ | 100.9 |
| Methyl ethyl ketone | 330 | 18.56 ²⁰ | 79.5 |
| Methyl isobutyl ketone | 335 | 13.11 ²⁰ | 116.5 |
| 2-Methyl-1-propanol | 230 | 17.93 ²⁰ | 107.8 |
| <i>N</i> -Methyl-2-pyrrolidone | 285 | 32.55 ²⁰ | 202 |
| Nitromethane | 380 | 37.27 ²⁰ | 101.1 |
| Pentane | 210 | 1.84 ²⁰ | 36.0 |
| Pentyl acetate | 212 | 4.79 ²⁰ | 149.2 |
| 1-Propanol | 210 | 20.8 ²⁰ | 97.2 |
| 2-Propanol | 210 | 20.18 ²⁰ | 82.3 |
| Pyridine | 330 | 13.26 ²⁰ | 115.2 |
| Tetrachloroethylene | 290 | 2.27 ³⁰ | 121.3 |
| Tetrahydrofuran | 220 | 7.52 ²² | 65 |
| Toluene | 286 | 2.38 ²³ | 110.6 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | 231 | 2.41 ²⁵ | 47.7 |
| 2,2,4-Trimethylpentane | 215 | 1.94 ²⁰ | 99.2 |
| Water | 191 | 80.10 ²⁰ | 100.0 |
| <i>o</i> -Xylene | 290 | 2.56 ²⁰ | 144.5 |
| <i>m</i> -Xylene | 290 | 2.36 ²⁰ | 139.1 |
| <i>p</i> -Xylene | 290 | 2.27 ²⁰ | 138.3 |