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and tetrahydrofuran (THF). A vertical line connects % B values for mobile phases having the same strength (giving similar values of k). For example, 40% ACN should provide similar values of k and run time as 50% MeOH and 30% THF. Slightly different scales of mobile-phase strength have been reported by other workers [7,8]. These various scales are at best approximate for any particular sample and should be used only as a rough guide (±5% B accuracy). The use of Fig. 6.4 in RPC method development is discussed further in Sections 6.3.2 and 6.4.2.2.

FIGURE 6.4 Solvent-strength nomograph for reversed-phase HPLC.

(Adapted from data of Refs. 5 and 6.)

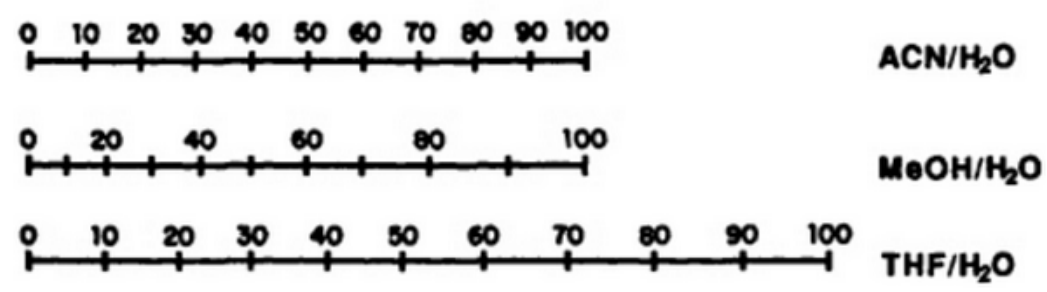


Figure 6.4 and other literature data suggest that RPC solvent strength varies as water (weakest) < methanol < acetonitrile < ethanol < tetrahydrofuran < propanol < (methylene chloride) (strongest). Thus, solvent strength increases as solvent polarity decreases. Appendix II includes polarity values P' for a number of common solvents.

Any of the foregoing solvents might be used with water for RPC, except methylene chloride, which is not water miscible. Because it is quite strong, methylene chloride-modified solvents can be used to clean RPC columns that have become contaminated by strongly retained sample components (Section 5.4.3.2). Acetonitrile (ACN) is the best initial choice of organic solvent for the mobile phase. ACN-water mixtures can be used with UV detection at low