

Qualitative understanding of partition preferences

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Case Ic

Rule 1(c):
A **bipolar solute** will partition similarly (i.e. partition coefficients vary by less than a factor 3) to **all apolar phases** because only vdW interactions are involved in the cavity formation as well as in the interactions between solute and solvent.

compound / solvent		$K_{\text{solvent / air}}$	
ethanol	/ decane	38	
ethanol	/ CCl ₄	115	bipolar molecules in apolar phases:
ethanol	/ cyclohexane	45	
water	/ heptane	4.47	
water	/ 1,2,4-trichlorobenzene	12.5	only van-der Waals Interactions
water	/ tetrachloroethylene	6.67	

