

Qualitative understanding of partition preferences

- Introduction
- ▶ Cavity model
- ▶ Rules for partitioning
- The cavity model in quantitative terms
- ▶ Selftest
- ▼ Problems
 - ↓ ● 1) Give a qualitative explanation
 - ↓ ● 2) Estimate the extraction efficiency
 - Answer
 - ↓ ● 3) Assign partition constants to substances
 - Answer
 - ↓ ● 4) Fuel accident
 - Answer
 - ↓ ● 5) Mixture of similar isomeres ... ?
 - Answer
 - ↓ ● 6) Extraction with pentane or diethyl ether?
 - ↓ ● 7) Prediction of partition constants
 - **Answer**
 - ↓ ● 8) Assign data to substances
 - Answer
 - ↓ ● 9) Explain saturated vapor pressure
 - ↓ ● 10) Apolar surface
- ▶ Intermolecular interactions in every day life
- FAQ

7) Prediction of partition constants

Question:

Hexadecane / air partition constants of three compounds are given in the following table. Estimate whether the missing partition constants are smaller, equal or higher than the hexadecane/air partition constant.

Note: olive oil is an alkylester, hexadecane is an apolar compound

	benzene	chlorobenzene	phenol
$\ln K_{\text{hexadecane/air}}$	6.42	8.42	8.67
$\ln K_{\text{olive oil/air}}$	6.51	8.60	10.7
$\ln K_{\text{water/air}}$	1.45	1.89	11.1

all values in $\text{m}_{\text{air}}^3 / \text{m}_{\text{solvent}}^3$

