

## Determination and Prediction of Octanol/Water and Air/Water Partition Coefficients for some Ether Compounds

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The octanol-water partition coefficient ( $K_{ow}$ ) and air-water partition coefficient ( $K_{aw}$ ) are the ratio of the concentration of a chemical in octanol (or air phase) and in water phase at the equilibrium state. This parameter is used in many environmental studies to help determine the fate of chemicals in the environment.

In this work, The  $K_{ow}$  and  $K_{aw}$  were measured for 6 ether compounds: di-n-butyl ether (DBE), di-isopropyl ether (DIPE), *tert*-butyl ethyl ether (ETBE), *tert*-butyl methyl ether (MTBE), *tert*-amyl methyl ether (TAME), propyl vinyl ether (PVE). While the  $K_{ow}$  was measured by using conventional Slow Stirring (SS) method,  $K_{aw}$  was measured using headspace gas chromatography (HSGC). Additionally, the measured  $K_{ow}$  and  $K_{aw}$  values were compared with the predicted values by fragment-constant method and SAR (structure activity relationship) approaches.