

# PARTITION COEFFICIENTS OF DYES BETWEEN ORGANIC AND AQUEOUS PHASE

## **ABSTRACT:**

The partition coefficients of methyl orange and crystal violet dyes determined in n-octanol-water system and compared with carbon tetrachloride-water and n-hexane-water systems. The main concern of 1-octanol-water partition coefficients  $K_{ow}$  is the measurement of physical parameters Log P, boiling and melting points and lipophilicity and hydrophilicity of methyl orange and crystal violet dyes. The value of Kow will be less than unity if the solubility of the compounds is larger in aqueous phase than octanol and it will be significant value for Kow if the compound show lipophilicity or fat soluble. The determination of the Log P and Log Kow of dyes at equilibrium by using Shake Flask Method, the concentration of dyes in organic and aqueous phase could be determined by using different analytical techniques such UV-visible spectroscopy, and/or High-performance liquid chromatography (HPLC). The Log Kow in the present study was measured through UV-Visible spectrophotometry. The methyl orange and crystal violet analyzed as highly hydrophilic in octanol-water system log Kow -1.11 and -1.25, respectively. The compared values of Log Kow -3.0 in n-hexane-water and  $CCl_4$ -water system.

**KEYWORDS:** octanol-water partition coefficients (Log  $K_{ow}$ ); methyl orange; hydrophilicity 2; Shake Flask Method; UV-Visible spectrophotometry; crystal violet