

levelling effect

The tendency of a solvent to make all Brønsted acids whose acidity exceeds a certain value appear equally acidic. It is due to the complete transfer to a protophilic solvent of a hydron from a dissolved acid stronger than the conjugate acid of the solvent. The only acid present to any significant extent in all such solutions is the lyonium ion. For example, the solvent water has a levelling effect on the acidities of HClO_4 , HCl and HI : aqueous solutions of these acids at the same (moderately low) concentrations have the same acidities. A corresponding levelling effect applies to strong bases protogenic solvents.

Source:

PAC, 1994, 66, 1077 (*Glossary of terms used in physical organic chemistry (IUPAC Recommendations 1994)*) on page 1135