

Salt in Water

Does the level of water in a glass of water go down or up if you pour a handful of salt into it?

Answer

It would go down owing to partial molar properties and intermolecular forces. In some cases, the components of a mixture don't contribute equally to the properties of their mixture. An ideal example is water-ethanol mixture, which has negative excess volume. It could be for example that the hydrogen bonding and dipole-dipole interactions between water and ethanol are stronger than between water and water or ethanol and ethanol. There is also a thermodynamic effect, where this state of mixing must represent the minimum free energy.