



Solution Thermodynamics of Ibuprofen in Aqueous Media at pH 1.2 and 6.8

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SUMMARY. Based on van't Hoff and Gibbs equations, thermodynamic functions Gibbs energy, enthalpy, and entropy of solution, mixing and solvation of ibuprofen in water at pH 1.2 and 6.8, were evaluated from solubility values determined at several temperatures. The solubility at pH 6.8 and 298.15 K was almost thirty six fold higher with respect to pH 1.2. The enthalpies of solution were positive and greater for pH 6.8 whereas the entropy of solution was negative for pH 1.2 and positive for pH 6.8 finding a greater molecular organization at pH 1.2 after solution process. The results were discussed in terms of solute-solvent interactions.

KEY WORDS: Aqueous solubility, Deprotonation, Ibuprofen, pH, Solution thermodynamics.

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