

## Thermophysical Properties of Aqueous Solutions of Sodium Naproxen

Sanjeevan Kharat<sup>C,S</sup>

*P. G. Department of Chemistry, RNC Arts, JDB Commerce, & NSC Science College, Nashik, Maharashtra, India  
ksanjeevan@dataone.in*

Non-Steroidal Anti-inflammatory Drugs (NSAIDs) are used to reduce the fever and to treat pain or inflammation caused by headache, toothache, back pain, arthritis, menstrual cramps or major injury. NSAIDs include sodium salicylate, sodium naproxen, sodium salt of meclufenamic acid and Sodium naproxen. Sodium naproxen reduces the chemical signals in our body that cause pain. Major solvent medium for the biochemical reactions that occur in our body is water. To understand the type and extent of physicochemical interactions between drug and water, thermodynamic, transport and acoustical properties are required. These thermophysical properties of aqueous solutions of sodium ibuprofen, sodium salicylate, and sodium salt of meclufenamic acid have been reported in earlier publications [1-3]. This paper reports density, viscosity, ultrasonic velocity, conductivity, and refractive index data of sodium naproxen water solutions at (298.15, 303.15, 308.15, and 313.15) K. Density and conductivity data of sodium naproxen water solutions reported in the literature have been compared with new generated data. New data of density, viscosity, ultrasonic velocity, refractive, and conductivity are correlated with molality of the solutions. To get the information regarding the nature of sodium naproxen-water interaction, partial molar volume, isentropic compressibility, apparent molar isentropic compressibility, and limiting molar isentropic compressibility of sodium naproxen have been calculated.

### References

- [1] *Thermochimica Acta*, 2013, 566, 124–129.
- [2] *Physics and Chemistry of Liquids*, 2014, 52 (1), 7-16.
- [3] *International Letters of Chemistry, Physics, and Astronomy*, 2015, 2, 124-131.