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## Spectroscopic Studies of the Complexation of Iodine with Antihistamine Drugs in Solvents of Varying Relative Permittivity

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### Abstract

The interaction of oxatimide (OXA), azacyclonol (AZA) and chlorpheniramine (CIPA) antihistamine drugs with iodine was studied spectrophotometrically in different solvents and at three different temperatures. The electronic, FT-IR, far-IR, and mass spectra of the resulting charge-transfer (CT) complexes were recorded, in addition to thermal analysis. The results obtained show that the stoichiometries of the reactions are all 1:1. The observed time dependence of the CT band and subsequent formation of in solution were related to the slow transformation of the initially formed 1:1 (donor: I-2) outer complex to an inner complex (electron donor-acceptor), followed by a fast reaction of the inner complex with iodine to form a triiodide ion. The characteristic strong absorptions of are observed around 360 nm. The CT-complexes have the formulae [(OXA)I](+) , [(AZA)I](+) and [(CIPA)I](+) . The formation constants (K), molar absorption coefficients (epsilon (CT)), and thermodynamic parameters Delta H (#), Delta S (#) and Delta G (#) of these interaction have been determined and discussed.

### Keywords

**Author Keywords:** Charge transfer complex; Oxatimide; Azacyclonol; Chlorpheniramine; Solvent effect; Iodine

**KeyWords Plus:** CHARGE-TRANSFER COMPLEXES; RESONANCE RAMAN; PI-ACCEPTORS; MOLECULAR-COMPLEXES; SIGMA-ACCEPTORS; POVIDONE DRUGS; SPECTRA; DDQ; 2,3-DICHLORO-5,6-DICYANOBENZOQUINONE; DEXTROMETHORPHAN

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