



Figure 1. Distribution of six most popular types of shortest contacts in the CSD[viii] in function of small distances between van der Waals spheres.

Keywords: Intermolecular Interactions, Crystal Engineering

MS36-P18 [C₁₀mim][Cl]: An ionic liquid, a liquid crystal and a crystallisation solvent

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Ionic liquids (ILs) are molten salts below the boiling point of water.¹ ILs are referred to as “designer solvents”:² they can be pre-tuned to desired physical and chemical properties through the numerous combinations of cations and anions. The sphere of interest in ILs has increased in the last decades. ILs’ versatile properties enable their application in several fields, among them the pharmaceutical research where ILs are starting to attract interest as crystallisation solvents.³

In a series of investigations of imidazolium-based ILs,⁴ the solid state behaviour of 1-decyl-3-methylimidazolium chloride, [C₁₀mim][Cl], has been studied using crystallisation and diffraction techniques at non-ambient conditions. The characterisation of the rich, hitherto unknown solid-state behaviour of [C₁₀mim][Cl] hydrates and liquid crystal phases are presented herein, along with preliminary results of adopting ILs as high-pressure crystallisation media for investigating drug polymorphism.

Keywords: ionic liquids, intermolecular interactions, high pressure, low temperature, crystallisation, hydrates.