

Chapter

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Ionic liquids

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Ionic liquids (ILs) are a group of interesting compounds that have been known for more than a century, attracting major attention within the last two decades. ILs are often confused with molten salts. ILs are salts with the melting point arbitrarily determined to be below 100°C. They are composed of ions and, thus, each IL possesses unique properties that are the effect of a cation and an anion's nature. However, in general, ILs are characterized by a low melting point, high thermal and chemical stability, a large electrochemical window, great solvent power, non-flammability and a negligible vapor pressure. Density and viscosity, as well as many other properties, can easily be tuned as they are dependent on the chemical structure of the IL. Therefore, the 'designer solvent' can be created for many applications, including biotransformation, chemical reactions (e.g., catalysis and hydrogenation), biorefinery concept, extraction and separation, and others.

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