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**Understanding the physical properties, toxicities and anti-microbial activities of choline-amino acid-based salts: low-toxic variants of ionic liquids**

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### **Abstract**

Ionic liquids (ILs) are often touted as potential ‘green’ substitutes for volatile organic compounds in process chemistry. However, their often high solubility in water limits their applications since discharge of spent ILs into natural water bodies may have significant detrimental eco-toxicological consequences for aquatic organisms. This is especially true for most imidazolium and pyrdinium based ILs which have been proven as toxic to aquatic life

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