

Ionic Liquids (ILs)

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Ionic Liquids Latest News

Scientists have found life can exist on rocky super-earths with volcanic activity and little water thanks to ionic liquids.

About Ionic Liquids

- ILs are a **category of salt** which are in **liquid state at room temperature** and **made up entirely of ions**.
- ILs are restricted to **salts whose melting point is below 100°C (212°F)**.
- **Any salt that melts without decomposing or vaporizing** usually **yields an ionic liquid**.
- While **ordinary liquids** such as water are predominantly **made of electrically neutral molecules**, **ILs** are made of **ions and short-lived ion pairs**.
- Examples: Tetrabutylammonium nitrite, 1-(Cyanomethyl)-3-methylimidazolium chloride, Choline acetate, etc.
- ILs are variously **called liquid electrolytes, ionic melts, ionic fluids, fused salts, liquid salts, or ionic glasses**.

- **General Properties:**

- **Non volatile**
- **Non-flammable**
- **Stable at high temperature** (up to 200°C / 392°F or 400°C / 752°F depending on the product) and Chemical (water and oxygen)
- **Hydrophobic or Hydrophilic**
- **Good conductors (electrolytes)**
- **Broad electrochemical range**
- The physico chemical **properties** of ionic liquids **depend on the type and the size of the two ions forming them.**
- Because of their **highly tunable nature** and exceptional properties, ILs have become essential players in the fields of **synthesis and catalysis, extraction, electrochemistry**, analytics, biotechnology, etc.
- ILs have emerged as an **environmentally friendly alternative to** various **organic solvents and catalysts.**
- As they are involatile and highly heat-resistant, they can be **used in processes subjected to high temperatures.**

Source: TH

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