
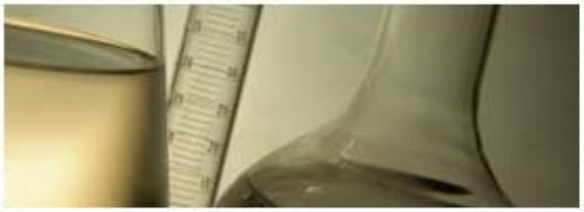

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Research Details :

Research Title : *Structure, phase transitions and conductivity of 4-benzyl pyridinium dihydrogenmonosulfate C6H5CH2C5H4NH+center dot HSO4-*

Structure, phase transitions and conductivity of 4-benzyl pyridinium dihydrogenmonosulfate C6H5CH2C5H4NH+center dot HSO4--

Descriptipn : The salt C6H5CH2C5H4NH+. HSO4- is monoclinic P2(1)/a with the following unit cell dimensions a = 8.990(6) angstrom; b = 9.925(7) angstrom; c = 14.081(9) angstrom; beta = 105.18(8)degrees; D-m = 1.491 mg m(-3); D-x = 1.464 mg m(-3); mu = 0.273 mm(-1); F (000) = 564; T = 298 K; R = 0.0512 and R-w = 0.1434 for 2150 independent reflections. The structure consists of infinite parallel two-dimensional planes built of HSO4- anions and C6H5CH2C5H4NH+ cations mutually connected by strong O- H center dot center dot center dot O and N-H center dot center dot center dot O hydrogen bonding. There are no contacts other than normal van der Waals interactions between the layers. In order to detect phase transitions and watch changes in the conductivity behaviour, investigations by differential scanning calorimetry (DSC) and electrical conductivity measurements were carried out. A dynamic order-disorder transition at 346K was found. A super-ionic conductor state at ambient and high temperature is related to the proton jumping.

Research Type : Article

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