
Botez, Martinez, Price, Martinez and Leal claim in J. Phys. Chem. Solids 129 (2019) 324–328 that superprotonic CsH2PO4 (CDP) is stable in dry air at 260 °C. We discuss their observations and conclude that CDP is not stable unless sufficiently confined under a high humidity and high-pressure atmosphere, eventually formed from the sample itself. Temperature- and time-resolved impedance spectroscopy data show that a superprotonic CDP pellet measured in a hermetically sealed chamber holds a stable superprotonic conductivity of ~2×10−2 S cm−1 over a time span of 50 h at a temperature of 260 °C if the amount of sample is large enough and the container small and tight. Nyquist plots have confirmed the superprotonic nature of the conduction. X-ray diffraction data have revealed that CDP is present after the heating cycle to obtain superprotonic conductivity, but possibly CDP partly was decomposed to Cs2H2P2O7 during the heating and was reformed reacting with water during the cooling.

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