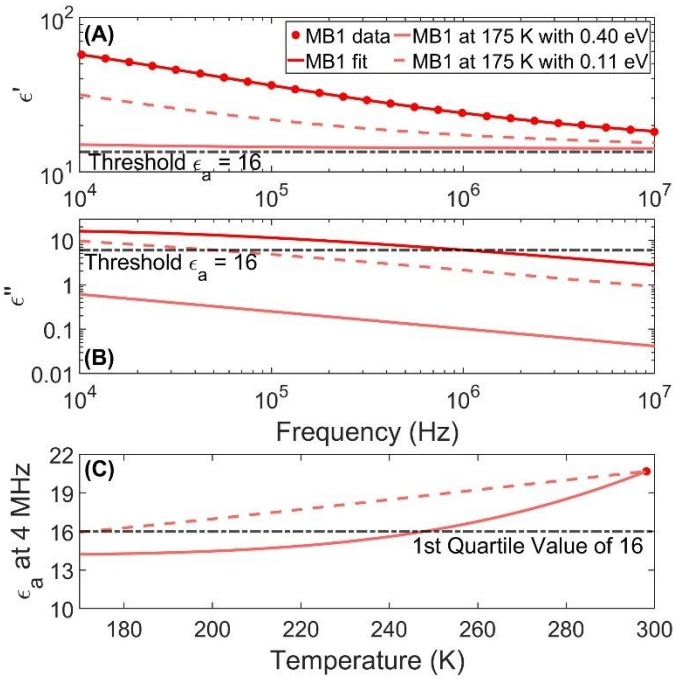

Figure S1. Real (**A**) part of the relative permittivity of the MB1 samples in *Rust et al.* (1999). MB1 is described as a glassy clast from a welded block and ash dacite breccia from Mount Meager, British Columbia, Canada. The data (red dots) were digitized from figure 5 in *Rust et al.* (1999). We then fit ε′ with a Cole-Cole relaxation to find ε''utilizing the Kramers-Kronig relationship (**B**) and then calculated ε_a (**C**). Activation energies E_a of 0.11 and 0.4 eV are then shown to estimate the activation energy of this anomalous low-frequency dispersion as estimated in *Stillman and Olhoeft* (2008) and *Stillman et al.*, (2010). At room temperature, the MB1 sample exceeds the observed 1st quartile value, however as temperature is decreased it drops below or matches the 1st quartile value depending on E_a.