

FIGURE 7 Differential thermal analysis (DTA) and impedance (1000 Hz –  $Z \sin \phi$ ) of U.S. FDA standard pertussis vaccine lot 9.

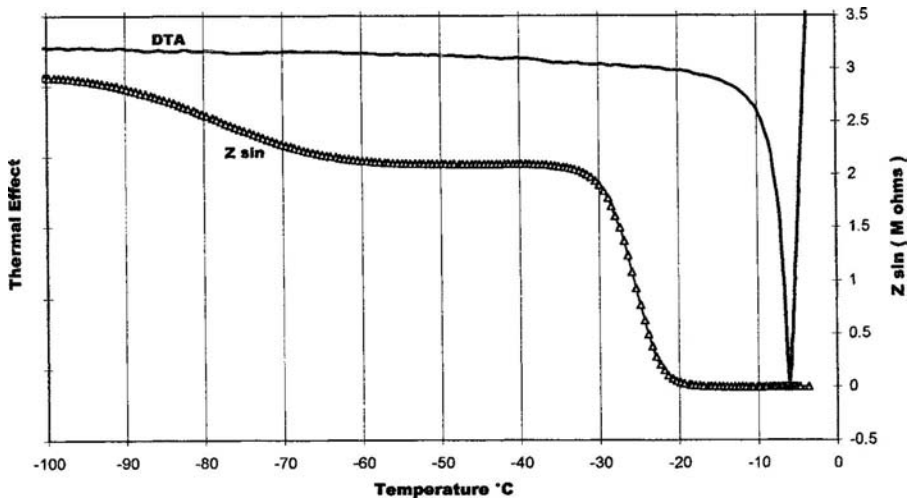


FIGURE 8 Differential thermal analysis (DTA) and impedance (1000 Hz –  $Z \sin \phi$ ) of Sero Saizen mass 10 mg.

### Glass and Vitreous Transformations

It is well known that certain solutions/systems do not crystallize when they are cooled down, especially when this is done in a rapid process (quenching in cryogenic fluids has long been in use by electron microscopy specialists to prepare their samples). Cooling results, in that particular case, in the formation of a hard material that has the properties of a glass. This vitreous body can prove to be stable, and when rewarmed it softens progressively and goes back to liquid