

Abstract Submitted
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Teaching Instrumentation Concepts by the Examination of Thermal Properties of Elastomers TIMOTHY VIERHELLER, The University of Akron - Wayne College — Fundamental instrumentation concepts were taught using two important thermal techniques in characterizing elastomeric materials: Differential Scanning Calorimetry (DSC) and Thermal Gravimetric Analysis (TGA). Instrumentation concepts included the following: calibration, resolution, accuracy, and precision. Basic thermal properties (such as specific heat capacity, glass transition temperature, melting temperature, melting enthalpy, and decomposition temperature) of elastomeric materials were reviewed, as was how DSC and TGA measure these properties. Using this background, instrumentation concepts were examined using collected data and related statistical information. Materials examined included polyethylene, nitrile rubber, and a natural rubber-butadiene blend.

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