

# Storage modulus loss factor

The storage modulus, loss modulus and loss factor as a function of frequency are plotted in Fig. 8. The dynamic moduli (both  $E'$  &  $E''$ ) grows steeply with an increase in the frequency.

Viscoelasticity is studied using dynamic mechanical analysis where an oscillatory force (stress) is applied to a material and the resulting displacement (strain) is measured. In purely elastic materials the stress and strain occur in phase, so that the response of one occurs simultaneously with the other. In purely viscous materials, there is a phase difference between stress and strain, where strain lags stress by a 90 degree (radian) phase lag.

Complex shear modulus, Storage modulus and Loss modulus  $G^* = E' / \sqrt{1 + \tan^2 \delta}$ ,  $G''$  (Pa)  $\tan \delta$  (Dimensionless, %)

Download scientific diagram | (a) Storage modulus ( $E'$ ) and loss factor ( $\tan \delta$ ) of the epoxy (1) and epoxy filled with 0.05 wt. % of CNT (2), 0.1 wt. % of HN (3), and 0.3 wt. % of CNF (4) vs ...

loss modulus  $E''$  (Pa)  $\tan \delta$  (Dimensionless, %)

The ratio of the loss modulus to the storage modulus is defined as the damping factor or loss factor and denoted as  $\tan \delta$ .  $\tan \delta$  indicates the relative degree of energy dissipation or ...

