

What is the relative modulus of a plateau region?

where  $G'$  is the shear storage modulus of the plateau region at a specific temperature,  $\rho$  is the polymer density, and  $M_e$  is the molecular weight between entanglements. In practice, the relative modulus of the plateau region shows the relative changes in  $M_e$  or the number of cross-links compared to a standard material.

Does the storage modulus change with frequency?

The storage modulus' change with frequency depends on the transitions involved. Above the  $T_g$ , the storage modulus tends to be fairly flat with a slight increase with increasing frequency as it is on the rubbery plateau. The change in the region of a transition is greater.

What is the difference between storage modulus and loss modulus?

In high-frequency scales, the storage modulus becomes a constant, while the loss modulus shows a power-law dependence on frequency with an exponent of 1.0. The transition between low- and high-frequency scales is defined by a transition frequency based on cell's mechanical parameters.

What is the storage modulus of a miniemulsion polymer?

The storage modulus as a function of temperature at six different maleic acid concentrations is shown in Fig. 12.11. These are compared to the storage modulus of a miniemulsion polymer that contains no maleic acid. The storage moduli of the AOME-co-MMA-co-MA polymers are slightly higher than that of the AOME-co-MMA polymer.

Do storage and loss moduli depend on frequency?

It can be seen that both storage and loss moduli exhibit a weak power-law dependence on frequency in the low-frequency range, and the storage modulus tends to a constant, while the loss modulus becomes linearly proportional to frequency in the high-frequency range. These results are consistent with Eqs. 7 and 10.

How do you determine plateau modulus  $G_N^0$ ?

In principle, the best way to determine the plateau modulus  $G_N^0$  is to use narrow MWD and high MW samples, as discussed above. Unfortunately, most man-made polymers are polydisperse, and many polymer materials cannot even be synthesized with a polydispersity index close to 1.

In experiments, the storage modulus of cells exhibits a nearly flat plateau region at very low frequencies, corresponding to a relatively small power-law exponent. As the frequency increases (region II), the loss modulus  $G''$  shows a greater ...

Storage and loss modulus as functions of deformation show constant values at low strains (plateau value) within the LVE range. Figure 3: Left picture: Typical curve of an amplitude ...

