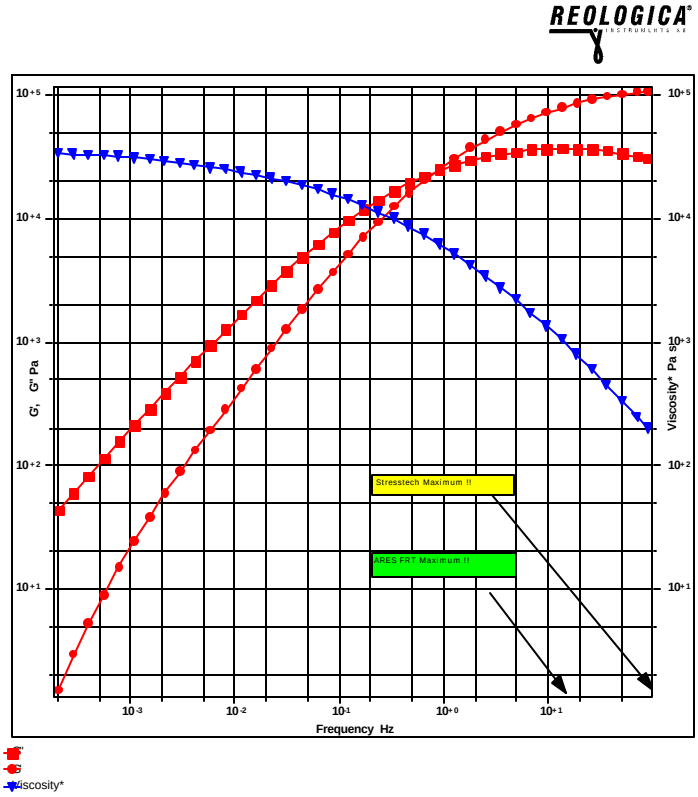
Frequency Sweep PDMS

Dynamic oscillation is one of the most popular means to determine the viscoelastic response of materials. One of the features of the Stresstech HR is its ability to make measurements across a wide range in frequency. Measurements at high frequencies for devices with separate active torque transducers such as force rebalance transducers have difficulties making measurements above 16 Hz due to limited system bandwidth. The results shown below were obtained in a single sweep in frequency from 10^{-4} to 100 Hz, five times higher than comparable active compensation (FRT) transducers. The results below clearly demonstrate that the Stresstech HR is able to perform accurate measurements on complex fluids at high frequencies.

Rheoexplorer software in conjunction with the Stresstech HR provide some of the most versatile oscillatory analysis capability available. The user can program independently the delay period, integration period, and the FFT size for each data point, either by specifying an initial and terminal value or by manually programming the data in a spreadsheet format. The user can also select to save the raw waveform as well as the Fourier spectrum for each data point. The results can be viewed in sine form (position or torque versus time) or as Lissajous shapes (position versus torque). Ex post examination of the data enables the user to analyze the harmonic content of each wave to verify linearity. Rheoexplorer also provides automatic signal averaging, ensuring that the user is obtaining the best signal to noise ratio possible.



Web: www.atsrheosystems.com ▼ Email: info@atsrheosystems.com
Headquarters: 52 Georgetown Road, Bordentown, NJ 08505 Tel: 609 298 2522 Fax: 609 298 2795
Satellite Office: 12344 Burbank Blvd., Suite 5 North Hollywood, CA 91607 Tel/Fax: 818 753 2960