Polyurethane Foam

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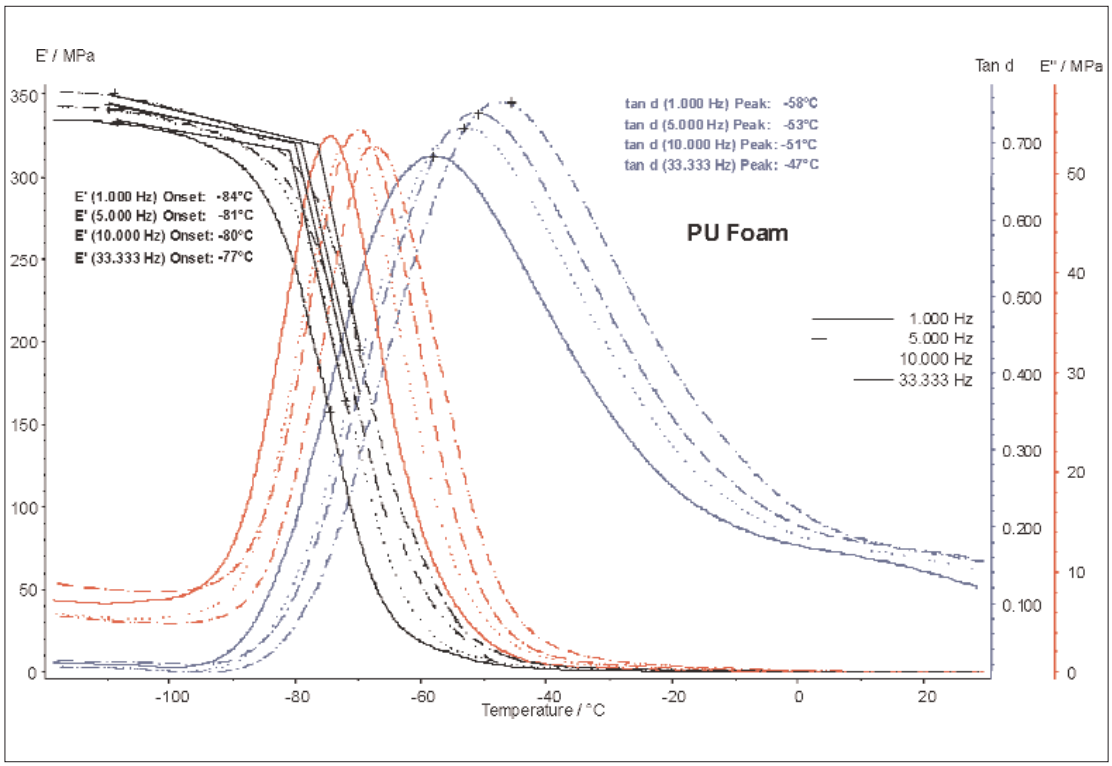
Polyurethanes are a group of polymers consisting of organic units chained together by urethane links. As polyurethanes can be firm, flexible or formable, foams or solids depending on the varying chemicals used during the production process, they have found a wide variety of uses as durable elastomers, high-performance adhesives, fibers and many more. PU foams are being used for tires, car seats and insulation

Test Conditions:

Temperature range:	-120 ... 30°C	**Frequency:**	1, 5, 10 and 33 Hz
Heating/cooling rates:	2 K/min	**Proportional factor:**	1.2
Sample holder:	compression	**Max. dynamic force:**	6.5 N
Amplitude:	±30 µm		



Results:

The dynamic thermo-mechanical behavior of a PU foam is depicted in the plot. The glass transition was measured at –84°C for the storage modulus (black curve) at a frequency of 1 Hz. As can be seen, the properties of the foam strongly depend on the frequency. The glass transition temperature is shifted by 7°C from –84°C at 1 Hz to –77°C at 33 Hz.

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