KEY TO FERRY'S PLOTS OF MATERIAL FUNCTIONS

CM 480
Fall 1990

I. **dilute polymer solution**: atactic polystyrene, 0.015g/ml in Aroclor 1248, a chlorinated diphenyl with viscosity 2.57 poise at 25°C. M_w=860,000, M_w/M_n near 1.

II. **amorphous polymer of low molecular weight**: poly(vinyl acetate), M=10,500, fractionated.

III. **amorphous polymer of high molecular weight**: atactic polystyrene, narrow MW distribution, M_w=600,000.

IV. **amorphous polymer of high molecular weight with long side groups**: fractionated poly(n-octyl methacryalte), $M_w=3.62 \times 10^6$.

V. **amorphous polymer of high molecular weight below its glass transition temperature**: poly(methyl methacrylate).

VI. **lightly cross-linked amorphous polymer**: lightly vulcanized Hevea rubber.

VII. **very lightly cross-linked amorphous polymer**: styrene butadiene random copolymer, 23.5% styrene by weight.

VII. **highly crystalline polymer**: linear polyethylene.

from Ferry, John D., Viscoelastic Properties of Polymers, 3rd Edition, Wiley: New York, 1980.

Figures taken from Ferry, John D., Viscoelastic Properties of Polymers, 3rd Edition, Wiley: New York, 1980.

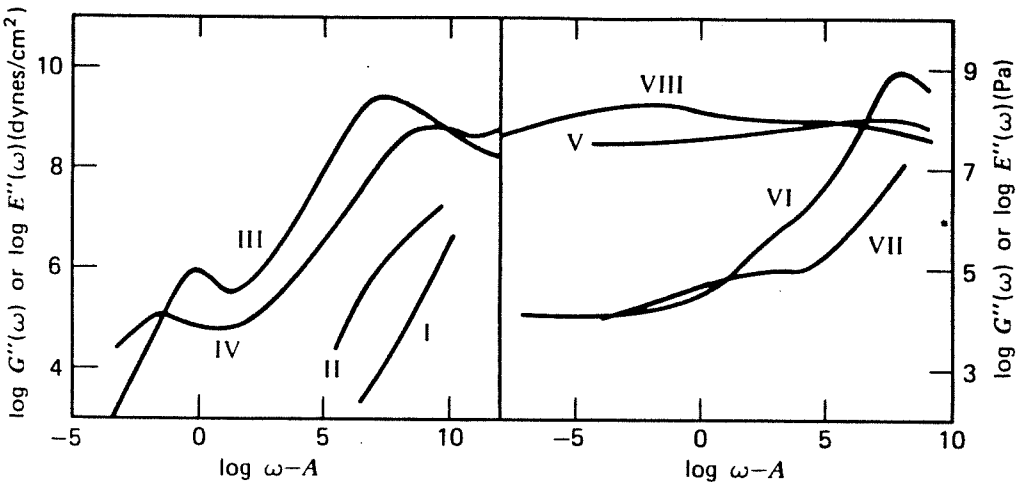

FIG. 2-4. Loss modulus plotted logarithmically for the eight systems identified as in Fig. 2-1.

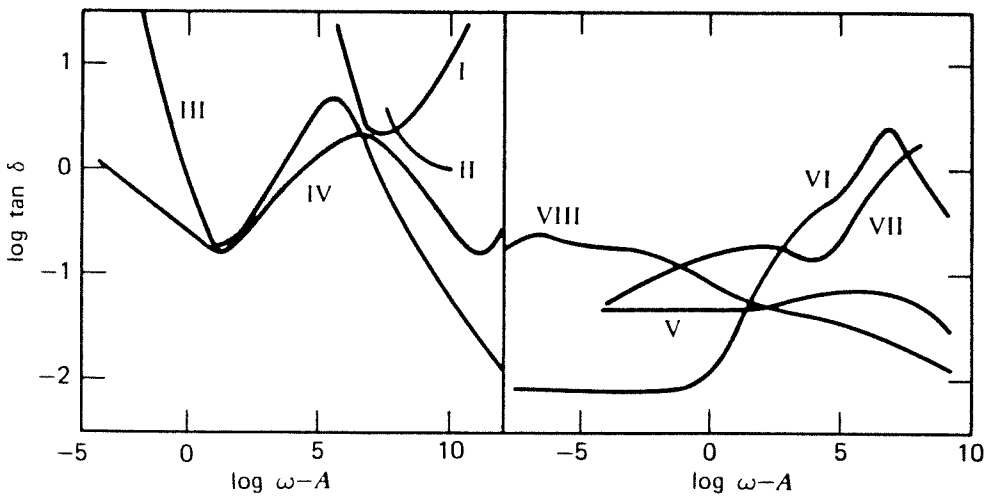

FIG. 2-8. Loss tangent plotted logarithmically for the eight systems identified as in Fig. 2-1.

Figures taken from Ferry, John D., Viscoelastic Properties of Polymers, 3rd Edition, Wiley: New York, 1980.

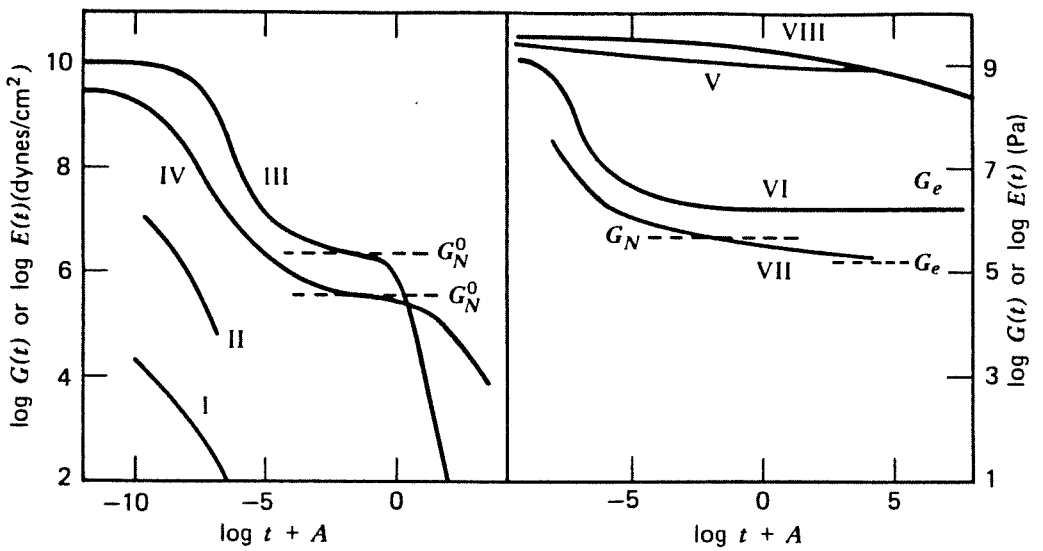

FIG. 2-2. Stress relaxation modulus for the eight systems identified as in Fig. 2-1.

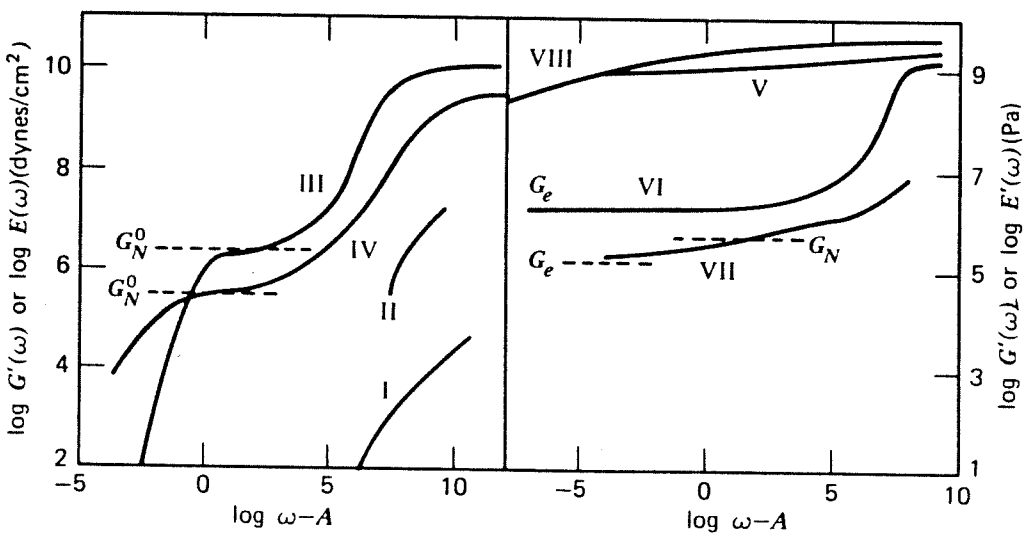

FIG. 2-3. Storage modulus plotted against frequency, with logarithmic scales, for the eight systems identified as in Fig. 2-1.