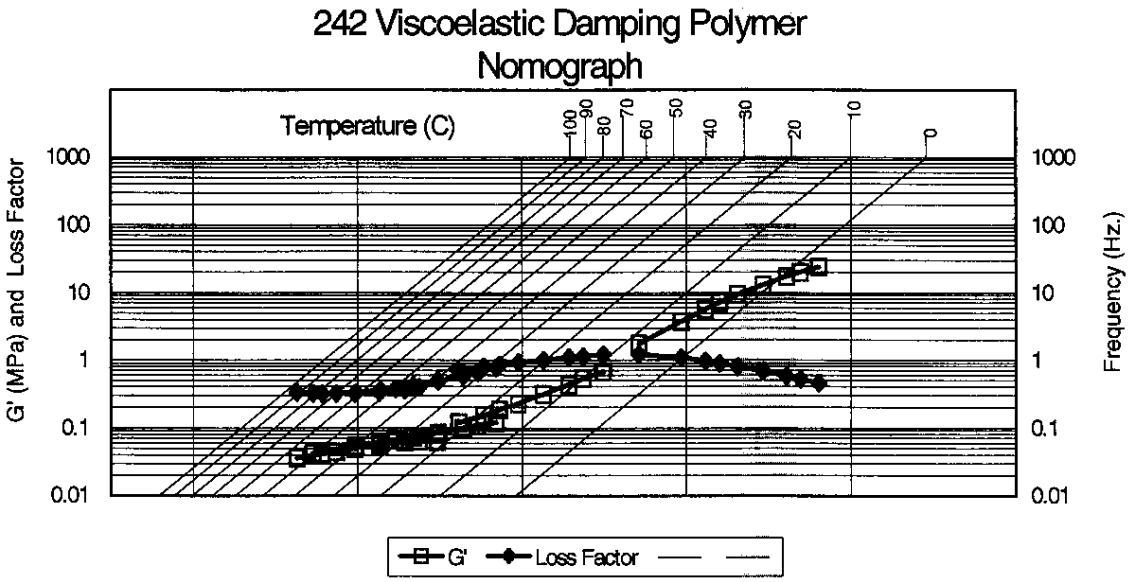
APPENDIX B
Visco-Elastic Material Properties
Nomographs

- 3M Scotchdamp ISD 242
- Lockheed-Martin SMRD 100F-90C

3M Scotchdamp ISD-242 Material Properties

3M

Scotchdamp **242F01, 242F02, 242F04**



Nomograph

- The viscoelastic material damping properties are in the "reduced temperature format" nomograph. The Loss Factor and Storage Modulus are found for the 242 viscoelastic damping polymer by selecting the frequency desired and extending a horizontal line from that frequency until the temperature isotherm is intersected. Extend a vertical line from this first intersection point so that it intersects the Loss Factor and Storage Modulus curves. The Loss factor and Storage Modulus are found on the left hand scale by extending a line horizontally from these second intersection points.

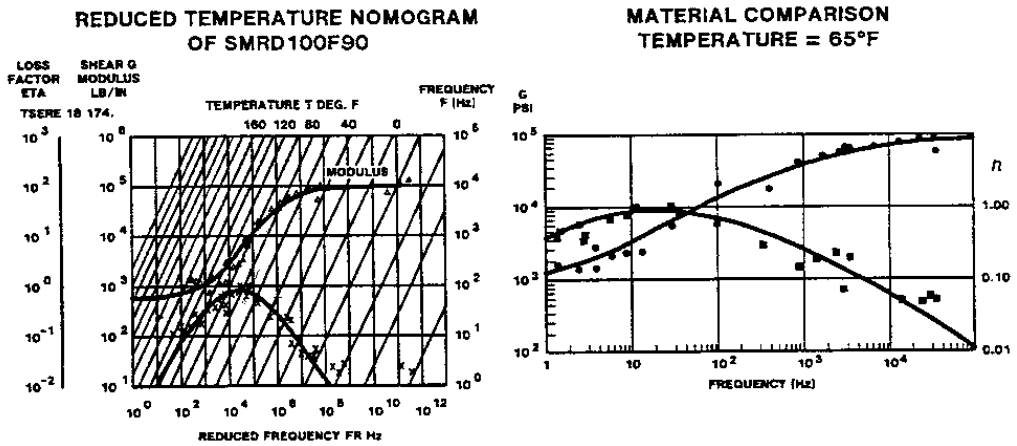
Outgassing

- Typical nominal total outgass material by GC/MS (Modified ASTM 4526)
- 242F01 - 0.8 ug/cm^2 (Hydrocarbons, Organic acids, Esters, Alcohols, Phenols, Siloxane)
- 242F02 - 1.0 ug/cm^2 (Hydrocarbons, Organic acids, Esters, Alcohols, Phenols, Siloxane)
- 242F04 - 5.0 ug/cm^2 (Hydrocarbons, Organic acids, Esters, Alcohols, Phenols, Siloxane)

Ionics

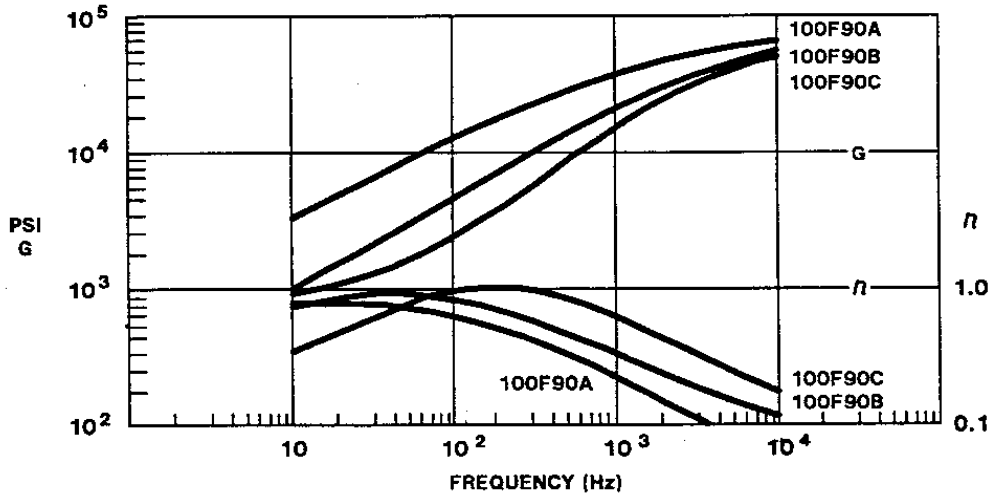
- Typical total ionics by Ion Chromatograph
- 242F01 - < 0.20 ug/cm^2 (Chloride, Nitrate, Sulfate)
- 242F02 - < 0.20 ug/cm^2 (Chloride, Nitrate, Sulfate)
- 242F04 - < 0.20 ug/cm^2 (Chloride, Nitrate, Sulfate)

Material Properties for Lockheed-Martin SMRD 100F-90C*



MATERIAL SELECTION MUST BE MADE USING PROPERTIES AT TEMPERATURE OF INTEREST

Figure 7. Material Characterization



GE MATERIAL PROPERTIES CAN BE ALTERED TO MEET SPECIFIC REQUIREMENTS. SMRD100F90C IS IDEAL FOR RELSAT.

*Data taken from "Analysis and Experimental Evaluation of RELSAT Damped Equipment Panels", C.V. Stahle, J.A. Staley, and J.C. Strain, Vibration Damping Workship II, AFWAL, March 1986.