Abstracts

Dielectric Measurements of Common Polymers at Millimeter Wavelength

M.N. Afsar. "Dielectric Measurements of Common Polymers at Millimeter Wavelength." 1985 MTT-S International Microwave Symposium Digest 85.1 (1985 [MWSYM]): 439-442.

Complex refractive index and Complex dielectric permittivity and loss tangent data for polyethylene, polypropylene, poly-4 methyl pentene-1 (TPX) and polytetrafluoroethylene (Teflon) are presented over the frequency range 40-300 GHz. All of these non-polar polymers are extremely low loss material. Like the microwave region, polyethylene demonstrates exceptionally low loss characteristic in the entire millimeter wave region. Polar polymers such as Nylon and plexiglass exhibit much higher absorption (nearly an order of magnitude higher) loss compared to non-polar polymers.

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