Unique Properties of DuPont Teflon AF

The high-performance Teflon® AF amorphous fluoropolymer family of products offers a unique combination of superior properties for demanding, high-performance applications.

Selective Solubility

Teflon® AF can be tailored to have narrow solubility in selected perfluorinated solvents but remains chemically resistant to all other solvents and process chemicals. Initial experiments have shown limited solubility of 3% to 15% for certain Teflon® AF polymers. This solubility allows you to solution-cast ultrathin coatings in the submicron thickness range. Because the family of Teflon® AF are fluoropolymers, their adhesion to substrates may be limited, and surface treatment may be necessary to alter and enhance performance. Teflon® AF swells in fluorochlorocarbons (e.g., Freon®).

Optical Clarity and Transmission

Because of the inherent characteristics of amorphous polymers, Teflon® AF possesses outstanding optical clarity and transmission. As Figure 2 demonstrates, Teflon® AF has outstanding light transmission from the deep UV range out through and including a significant portion of the IR range. Also, because it does not absorb light, Teflon® AF will not deteriorate with exposure to light. These optical properties, over such a wide range of wavelength and possible exposure conditions, are unmatched by any other polymer.

Refractive Index

Teflon® AF has an unusually low refractive index as shown in