

2006-FRB-0036									
UV_VIS open form extinction coefficient measurements									
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We measure the UV-VIS-NIR absorbance of fused silica plates with and without the FogTech anti-fogging wipe on additive. The Cary 6000i was set up as follows: 2000 nm/min., 200 to 1800 nm, 0.033 seconds integration time, 1.10 nm spacing, 2.0 SBW, 0 RBA, 100%/0% baseline, lamp change at 350 nm, grating change at 800 nm. We scanned the fused silica plate first, then wiped on the FogTech (MotoSolutions) and let stand for at least 5 seconds before scanning again.

The 2 spectra below show that there's a small absorption band near 1380 nm. This band is here with and without the FogTech, so we'll ignore it. We see that the fused silica we used begins to absorb near 300 nm and increases its absorbance down to 200 nm by about 0.014 absorbance, which is negligible. We also see that the polymeric material in FogTech has an absorption band at 252 nm and extends out to ~300 nm. The absorbance of this band is ~0.03. Given that we wipe on such a very thin (and likely dilute) polymer solution, it's not surprising that very little absorbance is detected. Note that at 300 nm, the film increases the absorbance by less than 0.001 absorbance.

Without doing any additional experiments, it appears that the FogTech anti-fogging coating should work well enough for our application. We will have to test to see how this material performs as an anti-fogging agent down to -25C, though.

