

## IR Absorbance and Transmittance

### 3M™ Nextel™ Ceramic Fiber 312

A small flake of alumina-boria-silica (3:1:2) fired to 1742°F (950°C) was used to determine the transmittance and absorbance of 3M Nextel Ceramic Fiber 312 in the infrared region. The thickness of the flake was determined from the interference pattern to be 22.4 μm thick. The following graph shows that in the shortwave number region (4000-3000 cm<sup>-1</sup>) the

transmission loss is small and appears essentially due to reflection. Weak absorption shows between 2700 and 1700 cm<sup>-1</sup>. Beyond 1700 cm<sup>-1</sup> absorption becomes strong and finally complete beyond 1400 cm<sup>-1</sup>. Absorbance can be calculated from the relationship  $A = \log_{10} (100)/(\%T)$ .

