Contamination on the surfaces of optical components decreases energy transmission, which can adversely affect component performance. The examples below illustrate just a few of the many low level contaminants that have been identified by Fourier Transform Infrared (FTIR) Spectroscopy.

A haze on a laser lens was identified as a dimethylsiloxane type silicone oil. The source was low molecular weight components from an RTV rubber.

A second haze on a lens was identified as a phthalate ester. The source was a plasticizer used in a plastic component.

Haze Compared with RTV components

Haze Compared with Condensed Volatiles from Plastic
A contaminant on an optical surface in a sealed optical coupler was identified as an epoxy. It matched an epoxy adhesive used in assembly of the component.

A different contaminant on a similar type of optical coupler surface was identified as an organic acid that came from a solder flux used in the assembly of the component.