

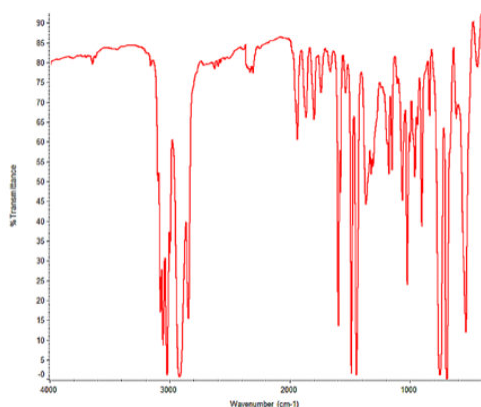
# Reference Standards

Mid-IR and Near-IR reference standards are designed for calibrating and affirming the performance of FTIR instruments.

PIKE offers several traceable reference standards. These include mid-IR transmission standards to confirm photometric linearity and wavelength accuracy of your FTIR instrument. ATR, and diffuse and specular standards may be used to evaluate accessory performance.

## POLYSTYRENE REFERENCE STANDARD

The 1.5-mil thick polystyrene are generally specified for calibrating wavenumber accuracy. A NIST traceable polystyrene version of the polystyrene film is available.

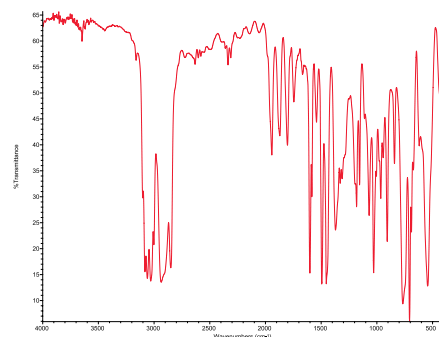


Polystyrene Reference Standard spectrum.



## MID-IR DIFFUSE REFLECTION WAVELENGTH STANDARD

Diffuse reflection sampling in the mid-infrared region is used to measure the reflection of powders, films, painted panels and other samples. Exhibiting sharp peaks throughout the mid-IR spectral region, the Mid-IR Diffuse Reflection Wavelength Standard is used to verify and calibrate for wavelength accuracy or diffuse reflection measurements. This standard is traceable to NIST 1921b and an analysis certificate is included.



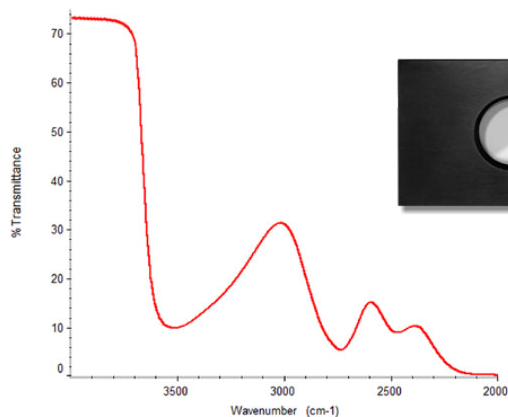
Mid-IR Diffuse Reflection Standard spectrum.



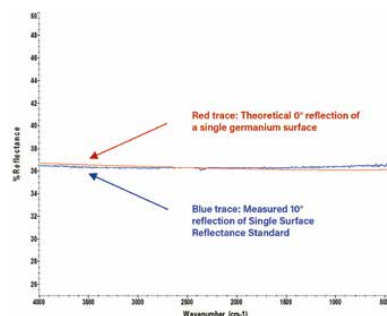
## SPECULAR REFLECTION STANDARD

The Specular Reflection Standard is a unique material for calibration of your reflection measurement system. The standard is a specially treated germanium element which only allows reflection from its front surface – thereby providing a reflection value which can be calculated relative to Fresnel equations.

The Specular Reflection Standard includes documentation to trace the specular reflection to published refractive index data. It is compatible with the following PIKE Technologies specular reflection accessories: VeeMAX III, 10Spec, 30Spec, 45Spec and 80Spec.



NG11Reference Standard spectrum.

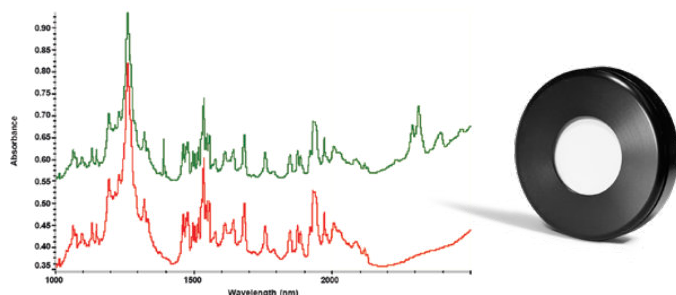


Comparison of measured and calculated reflection for the Specular Reflection Standard using the PIKE 10Spec accessory.



## NEAR INFRARED STANDARD

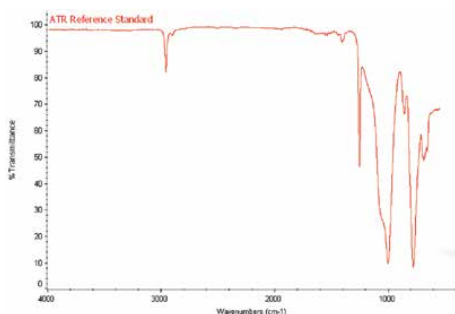
In the near infrared (NIR) spectral region, PIKE Technologies offers its NIR Wavelength Standard for calibrating a NIR spectrometer. The NIR Wavelength Standard meets USP wavelength requirements, provides calibration beyond 2.0  $\mu\text{m}$  and is NIST traceable. This standard is compatible with NIR analysis in the diffuse reflection sampling mode. The NIR Wavelength Standard includes analysis certificate and traceability documentation.



NIR Wavelength Standard spectral data. PIKE NIRWavelength Standard (upper green spectrum), NIR standard from another supplier (lower red spectrum).

## ATR REFERENCE STANDARD

ATR spectra are somewhat different than those produced by transmission sampling techniques – both in relative intensity of the absorbance bands and also the position of the bands. To assist with calibrating your ATR/FTIR system, PIKE Technologies offers an ATR Reference Standard. The ATR Reference Standard is available as a standard material and also in a version which includes a recommended validation procedure for your ATR/FTIR system.



ATR Reference Standard spectrum.

PART NUMBER	DESCRIPTION
<b>Polystyrene Reference Standards</b>	
162-5450	NIST Traceable Polystyrene Reference Standard, 1.5 mil
162-5420	Polystyrene Reference Standard, 1.5 mil (38 micron)
<b>Note:</b> Polystyrene reference standards are mounted in a 2 x 3" card and are compatible with all FTIR spectrometers.	
<b>NG11Linearity Reference Standard</b>	
162-5490	NG11Transmission Standard
<b>Specular Reflection Standard</b>	
162-5460	Specular reflection Standard
<b>Note:</b> Compatible with 10Spec, 30Spec, 45Spec, 80Spec and VeeMAX III accessories.	
<b>Mid-IR Diffuse Reflection Standards</b>	
162-5485	Mid-IR Diffuse reflection Wavelength Standard, 1.75" optical diameter
162-5486	Mid-IR Diffuse reflection Wavelength Recertification
<b>ATR Reference Standard</b>	
162-5470	ATR Reference Standard
162-5475	ATR Reference Standard with Recommended Validation Procedure and Validation Certificate, ZnSe
162-5473	ATR Reference Standard with Recommended Validation Procedure and Validation Certificate, Diamond
162-5474	ATR Reference Standard with Recommended Validation Procedure and Validation Certificate, Ge
162-5476	ATR Reference Standard Recertification
<b>Note:</b> Compatible with MIRacle, IRIS, GladiATR and VeeMAX III with ATR accessories.	
<b>NIR Wavelength Standard</b>	
162-5483	Traceable NIR Reference Standard, 0.9" optical diameter
162-5484	Traceable NIR Reference Standard Recertification

