Imaging Golden Gate Diamond ATR accessory

Data Sheet

FTIR spectrochemical ATR imaging need no longer be limited to the microscopic level. Combined with the Large Sampling (LS) accessory and the Imaging Golden Gate Diamond ATR accessory, ATR images can now be collected as easily as any ordinary spectrum, over much larger fields of view, allowing for chemical heterogeneity to be probed where previously not possible.

Taking full advantage of Agilent's FTIR ATR imaging technology, the Imaging Golden Gate Diamond ATR accessory offers the highest quality chemical images that are distortion and aberration-free with a preserved aspect ratio. All this, while maintaining the Golden Gate's robustness and ease-of-use that are so familiar to FTIR experts the world over.

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With the Imaging Golden Gate Diamond ATR Accessory, you can:

- **Maximize Productivity**. Traditional FTIR imaging usually requires some degree of sample preparation, often needing cross sectioning using a microtome before delicately placing a sample on an infrared transparent substrate for transmission mode imaging. Using the Imaging Golden Gate accessory, little or no sample preparation is required. Simply clamp your sample in place and obtain full 2D chemical infrared images in seconds.
- **Preserve Precious Samples**. Most samples can be analyzed 'as is', without destruction, allowing for the same sample to be used elsewhere or further analyzed using other techniques. Valuable or rare samples need not be destroyed through the sample preparation required for other spectroscopy techniques.
- **Analyze Challenging Samples With Ease**. With the renowned robustness of the Imaging Golden Gate Diamond ATR accessory, samples previously considered impossible to measure can now be analyzed with ease. You can measure paper, powders, polymer pellets or even rocks. The possibilities are endless!
- **Perform Hot, Cold, and In-Situ Experiments**. A variety of top plate options are available making it possible to perform chemical imaging experiments from 200 °C down to near liquid nitrogen temperatures. Study melting, crystallization and curing, or dissolution behavior as a function of time for pharmaceutical based applications — the result is outstanding versatility!

Application solutions

The Imaging Golden Gate is the world's most versatile infrared sampling system, allowing you to analyze a wide range of sample types:

- QA on pharmaceutical or other mixtures of powders
- Analysis of hard and soft polymer pellets
- Forensic sampling, paint chips and single fibers
- Hard samples, such as rock and geochemicals
- Heterogeneous liquids
- Coated wires

Figure 1 demonstrates how simply placing a multi-component polymer on the surface of the diamond ATR crystal can produce an image in seconds, highlighting the various chemical domains in this heterogeneous sample. This particular sample was too thick to measure using traditional transmission methods. Therefore, ATR imaging was used. A visual inspection suggested that this polymer consisted of only two components. However, as can be seen in Figure 1, three distinctly different polymer layers were identified.

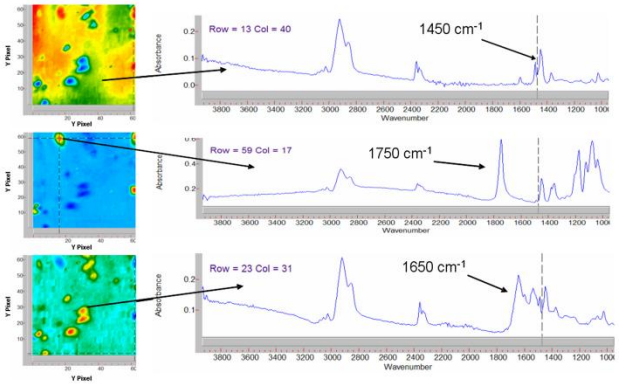

Figure 1. Identification of three different polymer layers from a multi-layer polymer; (a) Hydrocarbon resin (1450 cm^{-1}), (b) Polyester (1750 cm^{-1}) and (c) Polyamide (1650 $cm^{-1}$and 1540 cm^{-1}).

Specifications

FPA Size	Total Area Sampled	Spatial Resolution
16 x 16	160 x 160 microns	10 x 10 microns
32 x 32	320 x 320 microns	10 x 10 microns
64 x 64	640 x 640 microns	10 x 10 microns

Ordering information

Item	Part Number
Imaging Golden Gate	SPECAC-10600
Note: Specac-10600 requires a suitable Agilent FTIR spectrometer, Agilent LS accessory and FPA imaging detector for operation. Contact your local Agilent representative for further information.	
Optional Imaging Top Plates	
Standard (spare)	SPECAC-10583
Heated	SPECAC-10540
Supercritical	SPECAC-10585
Reaction	SPECAC-10507
Low Temperature	SPECAC-10590

1. This product is regulated by the U.S. Department of State under the International Traffic in Arms Regulations, 22 CFR 120-130 (“ITAR”). An export license from the U.S. government is therefore required to export this product from the United States, and other ITAR restrictions apply to the shipment, use, service and other aspects of this product and the FTIR instrument in which it is used.

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