

GERMANIUM ATR ACCESSORY FOR THE AGILENT CARY 630 FTIR

The Measure of Confidence

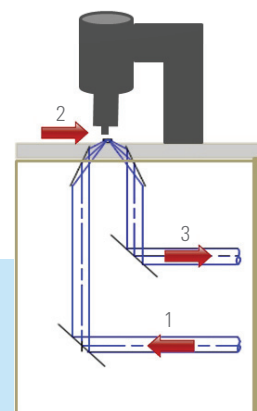


For fast data collection, lower noise and superior quality

Attenuated Total Reflectance (ATR) is the most common sampling technique used in infrared spectroscopy. It is easy-to-use and provides high quality spectra without requiring sample preparation. ATR can be used to measure solids, liquids or gels, and comes in a variety of configurations, based on different crystal types. The unique design of the Agilent Cary 630 FTIR and the Agilent germanium ATR increases energy throughput compared to other routine FTIR systems, providing better sensitivity for lower limits of detection and faster data collection for higher sample throughput.

How does it work?

The Agilent germanium ATR (Ge ATR) accessory for the Cary 630 FTIR is a single bounce ATR specifically designed to optimize the energy throughput, ensuring you achieve the highest quality spectra. The Ge ATR, while similar in design to the Agilent diamond ATR accessory, offers different characteristics due to the use of a Ge crystal. Shallower depth of penetration is achieved with a Ge crystal, resulting in a shorter pathlength. This is important when measuring samples containing carbon black, such as tires, rubbers and o-rings, as the characterization and identification of these highly absorbing samples is made simpler with shorter pathlengths. The Ge ATR, like all ATRs, requires proper contact with the sample, and a high performance pressure clamp is used to provide consistent sample contact.



Optical diagram of the Agilent germanium ATR accessory

1. Incoming IR light
2. Germanium crystal
3. Outgoing IR light

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Which applications are best suited to Germanium ATR?

The Ge ATR can be used for analyzing liquids, pastes, powders and solid samples. It is widely used in materials and polymers applications for the analysis of highly absorbing samples, commonly samples with high amounts of carbon black. It is excellent for measuring tires, o-rings, dark plastics or rubber samples.

Features

Innovative — the Ge ATR for the Cary 630 FTIR provides more energy throughput than any other ATR in its class. The accessory snaps in and out in seconds with no alignment required, and has a built-in pressure clamp to ensure optimum and reproducible pressure.

- **Crystal type:** Single bounce 45° Ge crystal
- **Effective pathlength***
 - 0.15 μm at 4,000 cm^{-1}
 - 0.36 μm at 1,700 cm^{-1}
 - 1.02 μm at 600 cm^{-1}
- **Wavelength range:** Mid IR region 5,100–600 cm^{-1}

Intuitive software — multi-language software guides users through every step of operation, while color coding alerts make it easy to see whether samples meet specification. The software also provides a feedback mechanism to advise when the accessory requires cleaning, ensuring you get the right answers everytime.

Reliable — designed originally for out-of-lab use in Agilent mobile FTIR products, the Cary 630 FTIR is the most rugged FTIR on the market today. Available with ZnSe windows that are optimized for superior energy throughput, the Ge ATR can be used in the most humid and tropical of environments, providing answers you can trust, day-in/day-out.

Flexible — switch between using the Ge ATR or any other Agilent Cary 630 FTIR sampling accessory for all your analysis needs. No alignment is required, and accessory changeover is complete within seconds.

Compact — the Ge ATR takes up only 9.2 x 8.9 cm of bench space, and weighs just 0.9 kg (2 lb).

* Values based on a typical polymer of refractive index of $n=1.5$

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Step-by-step instructions guide users, making operation and interpreting the results easy and reliable

Shown below is the Agilent Cary 630 with diamond ATR



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© Agilent Technologies, Inc. 2013
Published in USA, April 1, 2013
5991-2099EN



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