

ZINC SELENIDE ATR ACCESSORY FOR THE AGILENT CARY 630 FTIR



For fast data collection, lower noise, and superior quality

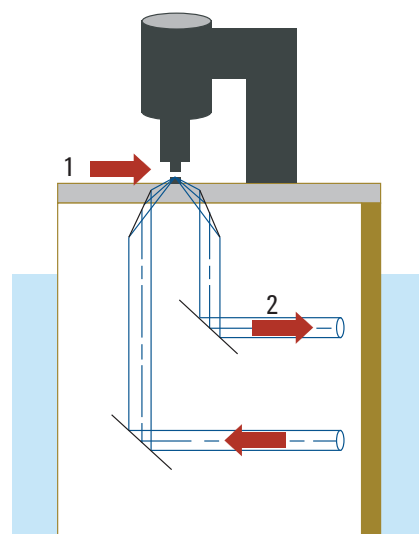
Attenuated Total Reflectance (ATR) is the most common sampling technique used in infrared spectroscopy because it is easy-to-use and provides high-quality spectra without requiring sample preparation. ATR can be used to measure solids, liquids, or gels, and is offered in various configurations based on crystal types.

The unique design of the Agilent Cary 630 FTIR and the Agilent single reflection Zinc Selenide ATR accessory (ZnSe ATR) increases energy throughput compared to other routine FTIR systems and provides better sensitivity for lower limits of detection and faster data collection.

How does it work?

The Agilent ZnSe ATR has been specifically designed to work with the Cary 630 FTIR, ensuring the highest quality spectra. It provides enhanced quantitative and qualitative information for most samples. The ZnSe crystal produces the widest transmission window for complete spectra in general applications.

The ZnSe ATR takes advantage of the physical properties of light encountering two materials with differences in refractive index (RI). At this interface, the infrared light creates an evanescent wave, which provides a small, specific depth of penetration into the sample with each internal reflection. High-quality results are obtained when good contact is made between the sample and the crystal.



Optical diagram of the Agilent ZnSe ATR accessory

1. Sample position
2. IR light

For more information:
www.agilent.com/chem/cary630

Features

Innovative: The ZnSe ATR accessory provides superior energy throughput for high quality data. The accessory snaps in and out in seconds, with no alignment required, and it is simple to use and clean. A built-in pressure clamp ensures optimum and reproducible pressure.

Crystal type

- ZnSe crystal
- Single reflection, nominal 45° incident angle
- Slip clutch provides consistent clamp pressure

Effective pathlength*

- 1.1 μm at 4000 cm^{-1}
- 2.6 μm at 1700 cm^{-1}
- 7.3 μm at 600 cm^{-1}

Wavelength range: Mid IR region from 5100 to 600 cm^{-1}

Intuitive software: Multilanguage 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 every time.

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

Flexible: The Cary 630 FTIR allows you to measure liquids of any concentration with any pathlength in seconds. Simply switch from using the ZnSe ATR, Ge ATR or DialPath/Tumbler for all your liquid measurements. No alignment is required, and accessory changeover is complete within seconds.

Compact: The ZnSe ATR takes up only 9.2 by 8.9 cm of bench space, and weighs just 0.9 kg (2 lb).

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

Which applications are best suited to the Agilent single reflection ZnSe ATR?

The ZnSe ATR provides a general use solid and liquid sampler targeted at sample identification and validation.

The single bounce ATR has limited sensitivity compared to other FTIR techniques, but the ease-of-use makes it the first choice to quickly measure solid and liquid samples.

When do I use a DialPath or Tumbler instead of an ATR?

The ZnSe ATR is suitable for any liquid that needs a short pathlength. Similarly, the DialPath and Tumbler are equally suitable, and provide the flexibility of variable pathlengths.

These accessories need not be mutually exclusive. The ZnSe ATR provides a short pathlength of 1 to 7 μm , whereas the DialPath/Tumbler can provide pathlengths from 30 μm upwards.

Include the single bounce diamond ATR, and you have the complete solution ranging from 1 to 1000 μm . Only Agilent can provide this flexibility in a family of simple to use accessories.

For more information:
www.agilent.com/chem/cary630

Information, descriptions and specifications in this publication are subject to change without notice.

© Agilent Technologies, Inc. 2016
Published in USA, May 3, 2016
5991-6930EN