

ATR

## Supercritical Fluids Golden Gate™ ATR

A high temperature, high pressure, low volume FTIR accessory developed for the study of supercritical fluids and polymers.

The Supercritical Fluids analyzer version of the Golden Gate™ Diamond ATR is designed for operation at extreme temperatures and pressures.

The diamond ATR element is high temperature metal bonded into a tungsten carbide disk, avoiding the use of adhesives or resins that may be dissolved or attacked by the chemical aggressiveness of supercritical fluids. The sample chamber has been specially constructed using stainless steel and is capable of withstanding pressures up to 6000 p.s.i. and temperatures up to 300°C.

The high thermal conductivity of the diamond element is ideal for fast temperature equilibrium and accurate temperature measurement, reducing analysis time and increasing sample throughput. The analyzer is equipped with a thermal protection system to prevent thermal runaway.

### Applications

- Supercritical and near supercritical fluids
- Extreme condition analysis of polymers
- In-situ ATR studies at high temperatures and pressures



### Specifications

- Pressures up to 6000 p.s.i.
- Temperature controlled to 300°C
- Low volume stainless steel sample cell 28µl
- Standard 1/16th inch fittings
- CE Marked
- Fits in standard FTIR instrument sample compartments

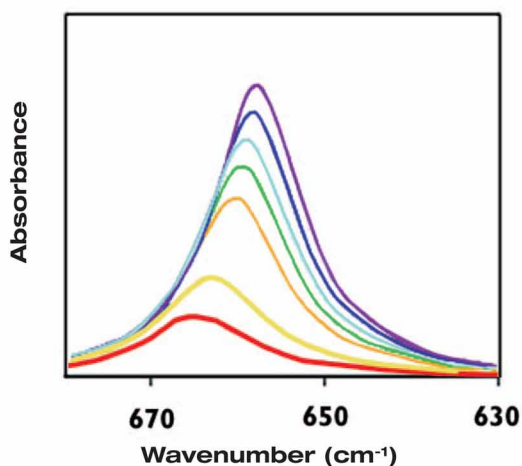
Illustrations, descriptions and specifications in this datasheet were correct at the time of going to press. However, Specac's policy is one of continuous product development and we reserve the right to change descriptions and specifications at any time.

For the latest details please contact your local Specac office or representative.

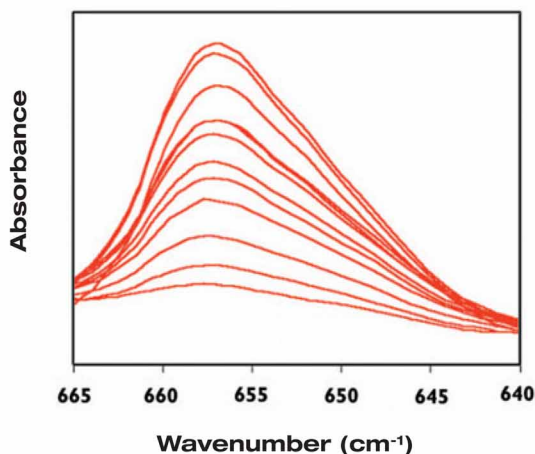
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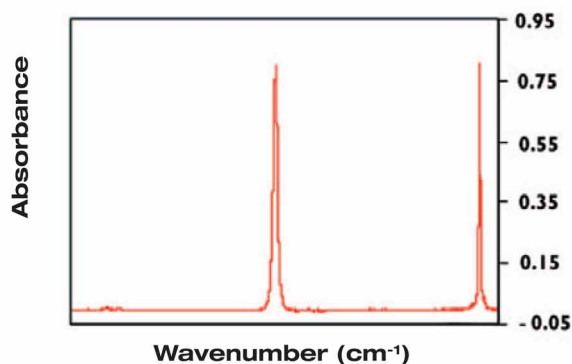
Spectra Samples



ATR spectra showing the effect of pressure of scCO<sub>2</sub> on the bending v<sub>2</sub> mode of CO<sub>2</sub>



Time-resolved ATR spectra of diffusion of CO<sub>2</sub> into a syndiotactic polystyrene pellet subjected to scCO<sub>2</sub>



ATR spectrum of supercritical CO<sub>2</sub> at temperature 40°C and pressure 3350 p.s.i. obtained with the single-reflection diamond ATR accessory

Ordering Information

**GS10586-2 Golden Gate™ supercritical fluids analyzer system**

Includes optical unit with supercritical fluids analyzer diamond top-plate, temperature controller, Benchmark™ baseplate and purge bellows. Specify *KRS-5* or *ZnSe* lenses.

**GS10585 Golden Gate™ supercritical fluids analyzer top-plate**

Includes supercritical fluids analyzer diamond top-plate and temperature controller.

Please specify instrument make and model, required voltage and country of use.

The temperature controller is supplied without any computer connection, if required please specify:

- GS28000 RS232 connection kit
- GS28001 USB connection kit
- GS28002 RS485 connection kit

**Spares**

- GS10587 Graphite gaskets (pkt 10)
- GS10504 Torque wrench (requires GS10588)
- GS10588 2.5mm hexagonal head bit for torque wrench

SPECAC LTD.,  
River House 97 Cray Avenue, Orpington,  
Kent. BR5 4HE UK  
T: +44 (0) 1689 873134 F: +44 (0) 1689 878527  
E: sales@specac.co.uk Registered in England No. 01008689

SPECAC INC.,  
301 Berkeley Drive, Swedesboro, NJ 08085 USA  
T: Toll Free +1 800 447 2558  
E: sales@specac.com W: www.specac.com

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