

The **SIChrom[™]** Accelerated Liquid Chromatograph System **Onyx[™] Advantages & Benefits:** Technology: Sorbent Characteristics

Monolithic Silica Rod Sorbents

- Silica Type: High Purity
- Structure Type: Monolithic
- Pore Size:
 - Mesopores: 130Å
 - Macropores: 2µm
- Pore Volume: 1 mL/g
- Porosity: > 80%
- Surface Area: 300 m²/g
- pH Stability: 2.0 – 7.5
- Temperature Limit: 45°C
- Pressure Limit: 200 bar (3,000 psi)

The monolithic material comprises a silica skeleton containing mesopores of approximately 130Å and macropores of approximately 2µm diameter.

The 2 µm macropores serve as through-pores and enable the analytes to be transported, under low pressure, to the activated surface for subsequent chromatographic separation. This surface has an area of approximately 300 m²/g, made possible by the mesopores.

Since the overall porosity of the monolithic silica matrix is greater than 80%, the user is able to perform chromatography with a significantly lower backpressures than with conventional particle-based columns, which exhibit total porosity of approximately 65%.

By optimizing the ratio of through-pores to total porosity and the silica gel skeleton thickness, separations become possible at significantly higher flow rates. This is due to accelerated adsorption and desorption of the substances to be separated by the silica gel surface.

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