

9.2.7.3 Instrumentation

Most of the components of the instrumentation for supercritical-fluid chromatography are in common with liquid and gas chromatography and are defined in Section 9.2.2.1 Apparatus for Column Chromatography.

Flow restrictor

This is a device which restricts the flow of the mobile phase leaving the columns and is used to maintain the pressure in the chromatographic column.

Capillary restrictor

This is a capillary tube which may be tapered or constricted and acts as a mass-flow controller. The column pressure is controlled by adjusting the pump flow rate.

Frit restrictor

A frit placed at the end of an open-tubular column to act as a flow restrictor. Sometimes referred to as an *integral frit restrictor*.

Back-pressure regulator

This is a device which is placed after the column and is used to regulate the pressure in the column by a pressure-adjustable diaphragm or controlled nozzle so that the same column-outlet pressure is maintained irrespective of the mobile-phase pump flow rate.

Sample injector as defined in 9.2.2.1.

The most common form in supercritical-fluid chromatography is the *bypass injector* (see 9.2.2.1). In capillary supercritical-fluid chromatography a *timed injector* is often used.

Timed injector

This is a form of *bypass injector* in which the rotation of the valve is timed so that only a portion of the contents of the sample loop can pass to the column.

High-pressure flow cell

A flow-through cell (usually spectroscopic) designed for use at high pressures so that the sample remains dissolved in the mobile phase during detection.