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An Overview on Supercritical Fluid Chromatography: Current Trends and Applications

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Abstract: *The normal phase chromatography variation supercritical fluid chromatography (SFC) was introduced in 1962.Pressurization is needed along the chromatographic flow path since SFC uses carbon dioxide as the mobile phase. The convergence of liquid and gas characteristics in the supercritical phase makes supercritical fluid chromatography known as "convergence chromatography." After GC and HPLC, supercritical fluid chromatography is a key column chromatography technology. Supercritical fluids combine gaseous and liquid advantages. Viscosity, diffusivity, and density define supercritical fluids. In SFC, a supercritical fluid drives the sample down a separating column, where the mélange is partitioned into bands based on the stationary phase's interaction with the analytes. A detector identifies and quantifies these bands as they leave the column. SFC, a gas-liquid chromatography hybrid, works as LC when the mobile phase is below its critical pressure and temperature. It becomes a liquid when the mobile phase exceeds its critical pressure and temperature. Supercritical fluid chromatography equipment is versatile since it works with numerous detectors.SFC has been used to natural goods, medicines, cereals, pesticides, herbicides, surfactants, polymers, polymer additives, fossil fuels, petroleum, explosives, and propellants.*

Keywords: Supercritical fluid chromatography (SFC), Analytical techniques, Separation science

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