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**SUPERCritical FLUID CHROMATOGRAPHY-A REVIEW**

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**ABSTRACT**

This paper shows some of the different supercritical fluids available for use in SFC, and discusses the advantages that SFC has over HPLC and GC and how these can provide benefits to the industries which adopt this technique. High performance specifications and unique functionality of chromatographic techniques. This leads to the origin of Supercritical Fluid Chromatography (SFC). It is a rapidly expanding analytical technique. The main feature that differentiates SFC from other chromatographic techniques is the replacement of either the liquid or gas mobile phase with a supercritical fluid mobile phase. It is considered a hybrid of GC and LC technique. It has a unique characteristic of analyzing thermo labile or non-volatile substances. The present article reviews the fundamentals, instrumentation and varied applications of supercritical fluid chromatography in the analytical arena. The different setups available for SFC and how they compare along with the mobile phases and solid phases which are currently used are highlighted within the paper.

**Keywords: Supercritical fluid chromatography, mobile phase, modifier, critical temperature, critical pressure, mass spectrometry.**

**INTRODUCTION**

Supercritical Fluid Chromatography (SFC) is one of the most recent chromatographic techniques used in the modern era of science and technology. It is a revolutionary separation technique. The first suggestion of supercritical fluid chromatography (SFC) was put forward in 1958 demonstrated the first experiments on capillary SFC in 1982 and the first commercial capillary column SFC instrument was introduced in 1985.<sup>[1]</sup> Supercritical Fluid Chromatography may be defined as a technique that separate components of a compound or mixture by using a mobile phase (supercritical fluid) which is above and relatively close to its critical temperature and