INTRODUCTION TO HIGH-CAPACITY SORPTIVE EXTRACTION



WHAT IS IT?

Sorptive extraction is a technique for getting VOCs and SVOCs from a sample into a GC–MS.



compounds, which are then desorbed by heating

under non-equilibrium conditions)

and liquids (headspace and immersive)

KEY APPLICATIONS



Aroma/flavour compounds in foods and beverages



Pollutants in soil and water



Biomarkers in clinical samples



Metabolites in biological samples





International)

TYPICAL WORKFLOW

The workflow for sorptive extraction depends on whether the sorptive phase is immobilised on a probe or stir-bar.



FORWARD-FLUSH OR BACKFLUSH TRAPPING?



HOW SORPTIVE EXTRACTION WORKS

Sorptive extraction uses a polymeric sorbent immobilised on an inert metal probe or a glass-encapsulated stir-bar.





Sorbent thickness: \sim 0.8 mm (probe form) 0.5 or 1 mm (stir-bar form)

WHAT CAN IT BE USED FOR?



ADVANTAGES & DISADVANTAGES

Sorptive extraction is a versatile technique with a range of benefits, enhanced further by the use of backflush trapping.









Glass-encapsulated stir bars are fragile and easily fractured



Samples containing abundant polar solvents (e.g. ethanol) need careful optimisation



PDMS can give low recoveries for highly volatile and polar species



EG-Silicone Polyacrylate can result in increased water retention



Some systems

require liquid

cryogen for

focusing

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Stir-bars are difficult to remove from cloudy samples

To learn more about automating high-capacity sorptive extraction using Markes' Centri® multi-mode sampling and preconcentration platform, visit chem.markes.com/Centri-Platform