

## Magnetic solid-phase extraction of aromatic amines using hybride nanopaticles

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**Abstract.** *Magnetic solid-phase extraction based on iron oxide nanoparticles (MNPs) has received increased attention over the past few years<sup>1</sup> because of its simplicity and its easy and rapid isolation of analytes from samples using a magnetic field<sup>1</sup>. A major general advantage of “surfmers” for magnetite nanoparticles (MNP) functionalization is the excellent stability of coatings based on chemisorption. This particular structure offer regions of different polarity for solubilization while keeping intact their structure during solute elution, this is du to the multiple retention mechanisms provided by these amphiphilic molecules (e.g., dispersion, hydrogen bonding, polar, ionic, etc.)<sup>1</sup>. In this work, we have shown the great extraction capabilities exhibited by the hitherto unexplored combination of magnetic nanoparticles and oligomeric micelles. The proficiency of these sorbents to expand the usually restricted range of extractable polarity from log  $K_{ow}$  values above 4 up to highly hydrophilic negative values has been proved by the extraction of 19 aromatic amines in textiles, prior to their determination by LC-MS/MS. Extraction took 5 min and absolute recoveries for 17 aromatic amines.*

**Keywords:** Magnetite, Oligomeric Micelles, Extraction, Aromatic Amines, Liquid Chromatography.