

Enhanced Spot Preparation for Liquid Extractive Sampling and Analysis

Disclosure Number

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Technology Summary

Preparation of dried sample spots on planar media is becoming a popular sample storage, preparation, shipping and analysis medium. In liquid extractive sampling of such prepared spots, fast, reproducible and efficient reconstitution of the desired analyte is required to make direct analysis analytically viable. Designed sample spot preparation involving additives to the sample solution or on the surface, or the use of surfaces with particular chemical and physical characteristics could be used to provide samples with the desired reconstitution properties. Preparation of dried sample spots should keep all current advantages of samples prepared as dried spots. The enhanced spot preparation necessarily will provide molecular dispersion of the analyte within the matrix/surface in a manner that prevents analyte agglomeration, self-crystallization or other chemical or physical associations that would prevent the rapid dissolution/reconstitution into solution by the solvents required for the analysis at hand. The chemical matrices, additives or surface that provide these reconstitution properties must not contribute undue complications in the subsequent chemical analysis of the reconstituted sample. If mass spectrometry is the analysis methods one would prefer that gas phase ion signals from the chemical materials or surfaces used would be minimal and not contribute to ionization suppression of the analyte or contribute ionic signals that are potentially isobaric with species of interest.

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