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Review of use of keepers in solvent evaporation procedure during the environmental sample analysis of some organic pollutants

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Highlights

- There are many different evaporation techniques used in the analysis of environmental pollutants.
- Keepers solvents are often used to decrease analyte losses during the solvent evaporation.
- The outlook on the criteria for the proper keeper selection was presented.
- The overview of the different keeper's functions in analytical procedure was shown.

Abstract

Evaporation of solvent is one of the important processes in analytical procedure, which has influence on analyte recovery. During evaporation the losses of more volatile compounds are observed either in traditional methods (Kuderna-Danish apparatus, rotary evaporator, under stream of ambient gas) or in modern methods, where additional agents like centrifugal force, gas vortex and others are used. To prevent the loss of analytes by evaporation, an additional solvent, named the keeper, is usually added to the extract. Many solvents of different properties are used for this purpose – they have in common the relative high boiling points. An overview of the keeper's usage in some organic pollutants analysis is presented.

Criteria for choosing the proper keeper solvent is discussed, based on the literature. Also described are the additional purposes where the keepers can be used in analytical methods.