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# "Efficient derivatization of methylphosphonic and aminoethylsulfonic acids related to nerve agents simultaneously in soils using trimethyloxonium tetrafluoroborate for their enhanced, qualitative detection and identification by EI-GC-MS and GC-FPD"

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## Highlights

- TMO efficiently methylates phosphonic and sulfonic acids in various soils.
- The derivatives are rapidly and unambiguously detected by EI-GCMS and GC-FPD.
- The methyl esters can be conveniently identified via NIST library matching.
- The methylation is mild and robust, taking place at ambient temperature.

## Abstract

Trimethyloxonium tetrafluoroborate ($TMO{\cdot}BF_4$) has been used in the simultaneous derivatization of phosphonic and 2-aminoethylsulfonic acids related to nerve agents in different soils for their enhanced detection and identification by electron