

Tuesday 11:45am Room S502a Session 8800-1000

Field Use of SPME and other Sample Preparation Methods With a Portable GC-MS System – A Guide for Emergency and Early Response Personnel

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Abstract.

The Homeland Security issues have renewed the need for quality assessments of unknown materials in the field. Although simple screening methods are useful in some cases, the mass hysteria that can be caused from false positive results is quite undesirable. Confirmatory analysis rather than screening tests is a preferred approach.

Likewise, Emergency Response Teams are faced with a number of unknowns from fuel spills to toxic waste, clandestine drug labs to abandoned drums of pesticides. Soil remediation work near and around underground fuel tanks is yet another example of where on-site, confirmatory analysis is preferred.

We have found several techniques to be quite useful with the CT-1128 Portable GC.MSD system, which was based on the full-range HP/Agilent 5973N MSD. Among these include a variety of Solid-Phase Micro Extraction (SPME) methods for use with soil and other solid samples, clear and cloudy water samples, and air samples. Results from SPME methods analyzed on the CT-1128 will be presented from actual field and simulated field situations. A discussion of the advantages and disadvantages of the SPME methods in the field will be presented, as well as a comparison to other classical sample preparation methods.