

**OT3 SPME GCMS allows for rapid triage of suspected chemical warfare agent containing samples**

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Chemical warfare agents can be detected at low concentration in environmental samples.

Current methods of sample analysis for chemical warfare agents require an extraction (or dissolution) with a non-polar solvent such as dichloromethane (DCM). For suspect samples of unknown origin the sample can be interrogated by using a SPME sample of the headspace.

Environmental samples usually contain a complex sample matrix. If the agent is of low concentration it may be hidden by the matrix. The agent may also be masked by the presence of compounds which co-elute, but are of a much higher concentration.

Here we show how all the “classical” chemical warfare agents can be analysed by SPME headspace sampling from various matrices. We also compare the results obtained from traditional liquid extraction of these matrices. Sample matrix manipulation can also lead to better detection of bound agents; the addition of water to soil samples liberates the bound agent allowing access and hence sampling by SPME.