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AN EVALUATION OF THE METHODS UTILIZED FOR THE RECOVERY OF IGNITABLE LIQUIDS FROM SUSPECTS’ HANDS

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A literature review revealed that there is currently no set protocol for hand sampling during an arson investigation, although the results have the potential to be a key piece of corroborative evidence; therefore, the requirement for an effective sampling technique is easily recognisable. Four commonly used sampling techniques were analysed against a previously unused technique. The techniques analysed were Solid Phase Micro Extraction (SPME) fibres, activated charcoal, swabbing and glass beads; with the alternative method being the use of silly putty, a polydimethylsiloxane (PDMS) variation. Results were compared by identifying which methods recovered key components benzene, toluene, p-xylene and 1,3,5-trimethylbenzene (TMB). The results concluded that the PDMS putty method, for recovering ignitable liquids from hands, is superior to most other investigated techniques based on the response achieved for this technique and the number of volatile components present on the resulting chromatogram. However, the newly introduced technique did not match the capabilities achieved for SPME fibres for ignitable liquid recovery; causing SPME fibres to be identified as the most effective method, from those assessed. Future work could include the placing of hands inside a nylon bag along with a suspended SPME fibre to allow recovery from hands in this format.

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Please send completed forms and address any questions to: Neil Lamont at n.a.lamont@staffs.ac.uk

