
SAMPLING FOR LEAD AND MERCURY USING GHOST WIPES™

TECHNICAL NOTE

Dr Terry Cooney, Executive Director

Background

'The NZ Guidelines for Remediation of Clandestine Methamphetamine Laboratory Sites' was published by the Ministry of Health in 2010. Among other things, it provides guidelines about acceptable levels of lead and mercury *after decontamination* in a property that has been used for manufacture of the drug.

<https://www.health.govt.nz/system/files/documents/publications/guidelines-remediation-clangestine-meth-lab-sites.pdf>

Whether for this or other reasons, samplers sometimes wish to collect samples from properties for analysis of lead and mercury. Typically this is done using a Ghost Wipe™ which is then submitted to the laboratory for analysis. This Technical Note provides guidelines about how to collect a sample, and how to interpret the results following analysis.

Sampling

The sampling procedure for Lead and Mercury on flat surfaces is described in the NIOSH 9100 Standard, from the National Institute of Occupational Safety & Health in the USA. This is the same organization who have published the NIOSH 9111 Standard used for methamphetamine sampling and analysis.

<https://www.cdc.gov/niosh/docs/2003-154/pdfs/9100.pdf>

The method is based on wiping a 100 cm² (10 cm x 10 cm square area) with an appropriate wipe such as Ghost Wipes™, ashless filter paper or cotton gauze material with dimensions of 5 cm x 5cm up to 7.5 cm x 7.5 cm.

Analytica provides Lead and Mercury sampling kits which are consistent with NIOSH 9100.

Sampling equipment: A single wetted Ghost Wipe™ is supplied in a sealed screw cap sample container. Additional items include a pair of latex gloves and a 10 cm x 10 cm sampling template.

Sampling procedure: Select an appropriate sampling location, and place the sampling template on the surface. Remove the Ghost Wipe™ from its sample container and wipe the 10 cm x 10 cm area defined by the template, following the NIOSH 9100 method. Place the Ghost Wipe™ back into the sample container, and clearly label it with the sample identification. Please also record the sample identification on the analysis request form (chain of custody (COC)) document. The sample can then be sent to the laboratory for analysis.

Analysis

The analysis method used by Analytica is based on the NIOSH 7303 standard, and uses ICP-MS equipment.

<https://www.cdc.gov/niosh/docs/2003-154/pdfs/7303.pdf>

Composite analysis is not able to be carried out on wipes – they are extracted and analysed individually.

Interpreting Results

'The NZ Guidelines for Remediation of Clandestine Methamphetamine Laboratory Sites (2010)' do provide some guidelines for interpreting results (Section 4, Table 3). Please note that these guidelines relate to levels that are acceptable *after* remediation.

- Lead - 2 µg/100cm²
- Mercury - 35 µg/100cm²

Please be aware that lead and mercury can arise from sources other than a methamphetamine manufacturing process. For example, if lead based paints have been used in the property this may give rise to elevated lead levels in a wipe sample.

<end>