µ-CTE™ Chamber Calibration Tool

Instruction for use

PRODUCT REFERENCE:

µ-CTE Chamber Calibration Tool   M-CHCT-250

1.   Introduction

The µ-CTE chamber calibration tool (part no. M-CHCT-250) enables the performance and reproducibility of the individual sampling chambers of the micro-chamber/ thermal extractor™ (µ-CTE™) to be compared, both on one system and between systems.

2.   Components

The tool is designed for use with the µ-CTE-250™ (part nos. M-CTE250I and M-CTE250TI). It comprises three components:

- Four PTFE sample blocks, each with three wells.

- One block lifting handle.

- Four inert-coated blanking screws.

The following tool is also required, but not supplied with the µ-CTE chamber calibration tool.

The components of the µ-CTE chamber calibration tool.

- A crosshead screwdriver, to insert and remove the inert-coated blanking screws.

3.   Preparation

3.1   Cleaning

Shortly before use, the components of the calibration tool must be cleaned and dried.

Recommended procedure:

[1]   Wipe down the PTFE sample block(s), blanking screw(s) and lifting handle with methanol and a lint-free cloth.

[2]   Leave to air-dry.

If the tool is not being used immediately, store in a clean environment.

3.2   Conditioning

Once cleaned, the sample block(s) should be conditioned, as follows:

[1] Remove one of the sampling pots from the μ-CTE.

[2] Lower the sample block into the sampling pot and place it back in the μ-CTE.

NOTES The blocks are designed to be a tight fit, and a little force may be required to seat them in a sampling pot. After the first use, this should be significantly easier.

[3] Insert the blanking screw into the middle hole of the sample block.

[4] Tighten the blanking screw using a crosshead screwdriver, then close the corresponding lid of the μ-CTE.

[5] Condition the calibration tool for 30 min at 150°C, followed by cooling for 45 min. The flow of carrier gas should be clean (*e.g.* oxygen-free nitrogen or helium of 5N grade, ideally with a hydrocarbon filter in the gas line), and set to 100 mL/min.

NOTES The maximum operating temperature of the PTFE sample blocks is 210°C.

[6] Allow the system to cool to ambient temperature.

3.3 Equilibration

After conditioning, the calibration tool should be equilibrated for 1 hour under the conditions (flow rate, temperature, relative humidity *etc.*) intended for real samples.

4. Injection of standard

After equilibration, the standard should be injected, as follows:

[1] Attach sorbent tube(s) to the chamber outlet(s).

[2] Using a syringe (or pipette), inject the standard mix into each of the three sample block wells. A typical volume is a few μL.

NOTES When adding the standard, ensure that the tip of the syringe (or pipette) touches the base of the well, and that no standard is left on the syringe needle.

[3] Close each chamber lid before moving to the next.

[4] Carry out the sampling and TD–GC–MS procedures in the same way as for real samples.

Step [2]: Standard injection.

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5. Tool removal and storage

After the sampling procedure is complete, the calibration tool should be removed and stored, as follows:

[1] Allow the system to cool to room temperature.

[2] Remove the blanking screw and insert the block lifting handle.

[3] Gently pull the block out.

[4] Clean the tool components.

[5] Store the tool components in a clean, dry environment.

Step [3]: Removal of sample block.

CAUTION Do not handle the block while it is still hot.

6. Contact details

For technical support, please contact your supplier in the first instance. If they are unable to resolve your query, please contact Markes International's service department:

E: support@markes.com
T: +44 (0)1443 230935
W: www.markes.com

For an instructional product video, please visit: chem.markes.com/Calibration

Scan the code to watch the video