MARKES international

L-0083 (100124-5)

Micro-Chamber/Thermal Extractor

Specification sheet

Covering: The four-chamber Micro-Chamber/Thermal Extractor (M-CTE250I).

The four-chamber Micro-Chamber/Thermal Extractor™ (μ-CTE™) is a versatile, compact unit with four small cylindrical chambers that enables the sampling of chemicals released from products or materials at temperatures up to 250°C.

1. System features

- **The system contains four inert-coated stainless steel microchambers** that allow surface or bulk emissions to be tested from up to four samples simultaneously.
- **A precision gas manifold** maintains a constant air/gas flow through each sample chamber.
- **No pump or mass flow controller** is required and near-ambient pressures are maintained in each test chamber.
- **Ambient or elevated temperatures** (up to 250°C) can be used for sampling.
- **Total test time** (equilibration and vapour sampling), for all four samples, is normally between 15 and 30 min.
- **A conditioned sorbent-packed tube** is attached to each microchamber and a controlled flow of air/gas is passed through all chambers simultaneously.
- **Sampled sorbent tubes** are then loaded into a thermal desorption instrument (*e.g.* UNITY™) and analysed by TD–GC–MS.
- **A toggle valve option** is available that enables flows to individual chambers to be shut-off.

2. System specification

2.1 Dimensions and weight

- Height: 41.5 cm (16.3″).
- Width: 16 cm (6.3″).
- Depth: 52 cm (20.5″).
- Weight: 15 kg (33 lb).

2.2 Microchamber dimensions

- Internal diameter: 6.4 cm.
- Depth: 3.6 cm.
- Available volume for bulk emissions testing: 114 cm^3.
- Air volume above sample for surface emissions testing: 7.4 cm^3.
- Exposed sample surface area for surface emissions testing: 24.63 cm^2.

2.3 Flow range (quoted for air or nitrogen)

- High: 50–500 mL/min through each chamber.
- Low: 10–70 mL/min through each chamber.

2.4 Gas specifications

- Gas types: clean air or nitrogen. Also compatible with helium, but flow rate range will vary.
- Gas pressure: 10–60 psig (0.69–4.15 bar).

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2.5 Gas velocity at sample surface

- ~0.5 cm/s at 50 mL/min.
- ~5.0 cm/s at 500 mL/min.

2.6 Operational temperature range

- Ambient to 250°C.
- Settable in 1°C increments.

2.7 Ambient operating conditions

- Temperature: 15°C to 30°C.
- Relative humidity: 5 to 95% RH (non-condensing).

2.8 Power requirements

- 100–240 V, 50/60 Hz, 650 W maximum.

2.9 Safety and regulatory approvals

- The instrument is designed and manufactured under a quality system registered to ISO 9001.
- The instrument complies with the essential requirements of the following applicable European and North American Directives, and carries the CE/UKCA marks:
  - Low Voltage Directive 2014/35/EU.
  - EMC Directive 2014/30/EU.
  - ROHS Directive 2015/863/EU
- The instrument conforms to the following product safety standards:
  - IEC 61010-1:2010/AMD1:2016.
  - IEC 61010-2-010/EN 61010-2-010:2014.
  - Canada: CSA C22.2 No.61010-1-12:2012.
  - USA: ANSI/UL 61010-1:2012.
- The instrument conforms to the following regulation on electromagnetic compatibility (EMC):
  - IEC 61326-1:2012/EN 61326-1:2013.

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