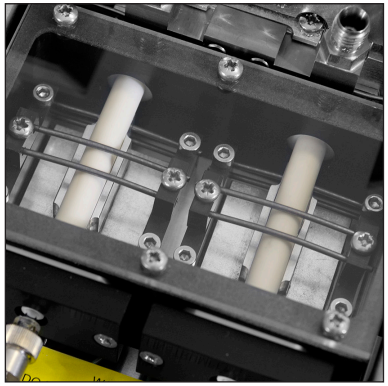
MARKES international

TT24-7xr

Advanced thermal desorber for continuous on-line environmental monitoring of trace-level organic vapours

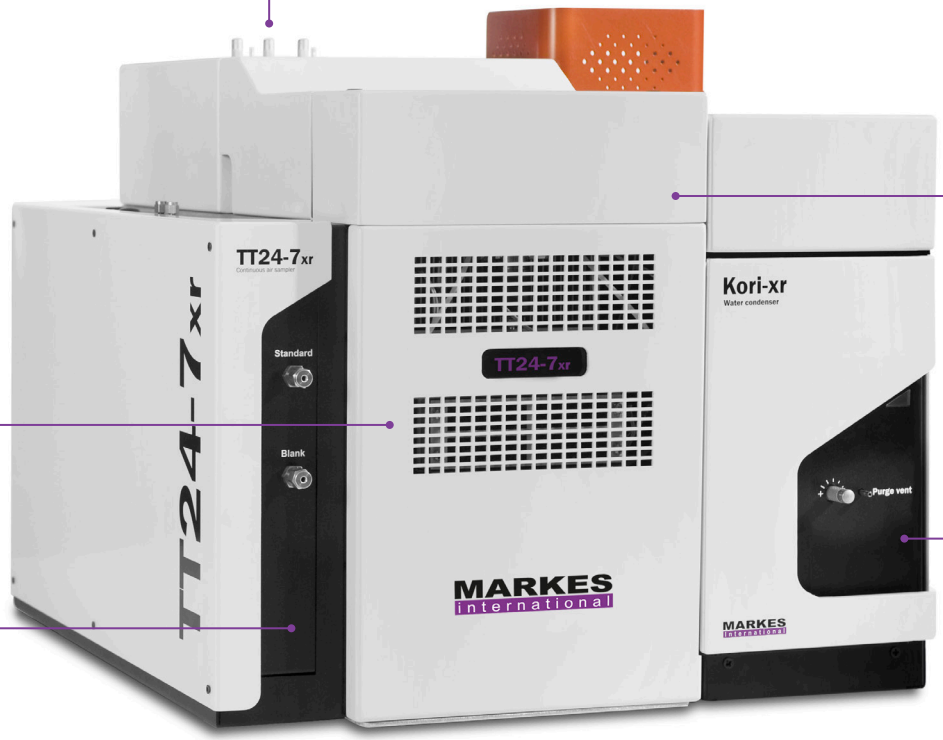


THE QUEEN'S AWARDS FOR ENTERPRISE: INTERNATIONAL TRADE 2015

TT24-7xr™

Introducing the new TT24-7xr – an advanced, method-compliant thermal desorption (TD) system for continuous low-flow environmental monitoring of trace-level volatile and semi-volatile organic compounds (VOCs and SVOCs) by GC–MS.

The innovative dual-trap design enables 100% data capture, while unattended monitoring (ideal for mobile and unstaffed laboratories) is aided by cryogen-free operation and remote control of several systems from a single location.



Platform-neutral

The short, heated transfer line allows the TT24-7xr to be installed on all major makes of GC and GC–MS.

Unparalleled analyte and concentration range

The inert, uniformly heated flow path ensures compatibility with C_2–C_{40}, including reactive species... from percent to sub-ppt concentrations.

Trouble-free sampling of humid air

The new Kori-xr water management module enables simultaneous sampling of C_2 and polar VOCs, including monoterpenes.

Improved laboratory efficiency

Automated, unattended stream selection facilitates easy sequencing between the samples, blank and calibration standard channels at user-defined frequencies.

Precision of quantitative analyses

An optional internal standard accessory enables gas-phase internal standards to be introduced onto either focusing trap.

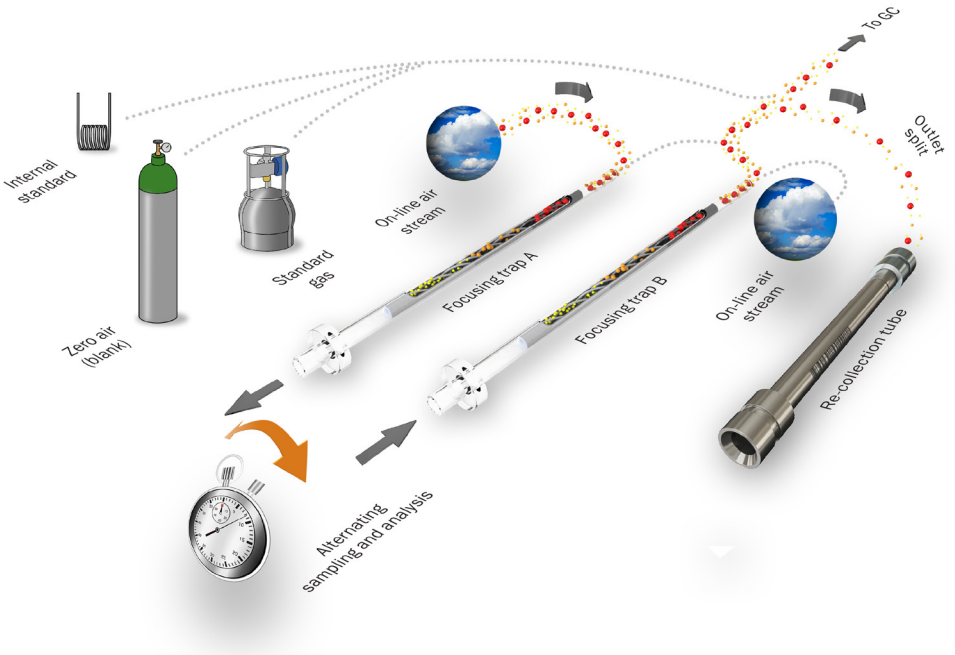
Powerful options for method-compliant on-line monitoring

Continuous on-line monitoring

The TT24-7xr achieves continuous on-line monitoring through the use of two cold traps working in tandem.

The sample is first collected onto Trap A. The sample flow is then switched to Trap B, while Trap A is desorbed and the compounds analysed.

This alternating sampling/desorption process is also applied to the standard/blank, and is repeated until the end of the analytical sequence.



Two focusing traps working in tandem provide complete data-capture for on-line sampling of air using the TT24-7xr. At the time-point illustrated, sampling is taking place onto Trap A, while Trap B is being desorbed (with a portion of the flow to the GC being directed to a re-collection tube).

Off-line analysis

In addition to on-line monitoring, sorbent tube analysis can be carried out on the TT24-7xr, making it suitable for a variety of air-monitoring scenarios.

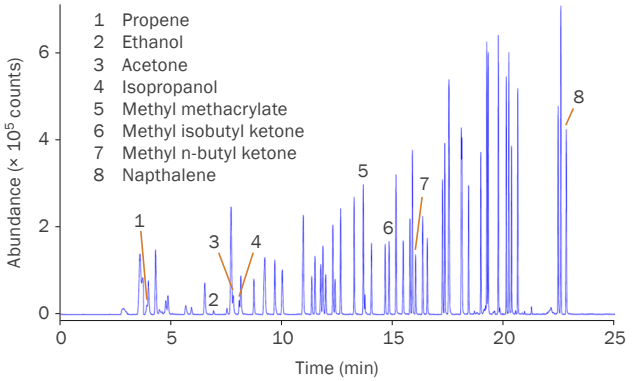
Re-collection and method validation

The ability to perform tube analysis facilitates the quantitative recovery and re-collection of on-line samples for repeat analysis, enabling easier analyte and method validation.

Effective water management

When analysing humid air, the moisture must be removed before the gas flow reaches the GC column and detector, to avoid poor chromatography. However, some polar species and ultra-volatiles can be lost when using typical water-management methods such as a Nafion™ dryer or trap dry-purge.

The cryogen-free Kori-xr™ module addresses this problem by removing water from humid air prior to analyte focusing – allowing high-sensitivity analysis of polar species, oxygenates and monoterpenes, as well as all other typical VOCs.



Use of the Kori-xr module with TT24-7xr provides excellent results for the analysis of a 100% RH, 65-component TO-15 standard containing polar and non-polar analytes.

Kori-xr was developed in collaboration with the National Centre for Atmospheric Science (NCAS) at the University of York. It was co-funded by the UK's innovation agency (Innovate UK), the Natural Environment Research Council (NERC) and the Welsh Government under the Knowledge Transfer Partnership program.

Markes International – The TD experts

World-leading instruments and unmatched expertise in VOC and SVOC monitoring

Markes International has for 20 years been at the forefront of innovation for enhancing the measurement of trace-level VOCs and SVOCs by thermal desorption–gas chromatography. Our suite of instruments for thermal desorption sets the benchmark for quality and reliability:

TD100-xr™
High-throughput 100-tube automated thermal desorber.

UNITY-xr™
Single-tube thermal desorber featuring sample re-collection of all split flows.

UNITY–Air Server-xr™
Versatile on-line VOC monitoring system.

ULTRA-xr™
High-throughput 100-tube autosampler for UNITY-xr.

CIA *Advantage*-xr™
Cryogen-free automated canister autosampler and pre-concentrator.

TC-20™ & TC-20 TAG™
Cost-effective systems for off-line multi-tube conditioning and dry-purging.

Micro-Chamber/Thermal Extractor™
Unique sampling device for emissions of VOCs and SVOCs from products and materials.

Since 1997
20 YEARS
ANNIVERSARY

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