

3rd GENERATION OF AN EXCLUSIVE DEVICE DESIGNED FOR BARRELS MONITORING

Patent pending !

TCA-Test[®]
D → 3

Témoignage de
Contamination
Atmosphérique
Dynamique

Background :

Available since 2012, LEC continuously improves its device for the dynamic sampling of the inner barrel in order to check the presence of HaloAnosoles.

In March 2017, we were able to launch the third generation of sampling cartridges which had put under patent.

Those new and exclusive cartridges contain PDMS⁽¹⁾ as a trapping material which not only improves the levels of detection for HaloAnisoles , but also allows at least the detection of their precursors HaloPhenols.

Dynamic sampling applied to the inner of the barrels :

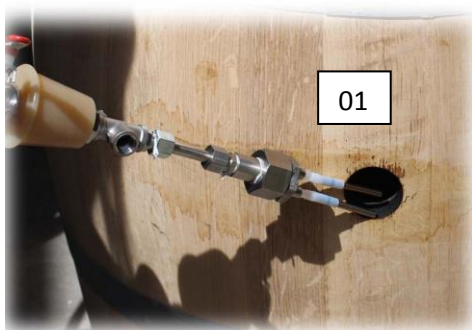


01

Operating the TCAtestD^R (D for dynamic) relies on well established sampling protocols for monitoring VOCs⁽²⁾ in the ambient air. To search and quantify solvent traces in air, it is necessary to pump a controlled volume of gas through cartridges packed with specific sorbents. Cartridges are intended to be analyzed later in a laboratory, many of those sampling methods had been already standardized (see EPA for example).

TCAtestD^R required a sampling unit developed and assembled by LEC (see picture in the right).

2 Cartridges are introduced inside the barrel after being fitted on the head of a sampling stick (01) :



01



03

02

A specified volume of air will be sucked through the 2 cartridges thanks to a strong vacuum pump (02). This task is monitored by a programmable logic controller (03) and can be done in few minutes.



The cartridges are then recovered and sent to the lab to be analyzed on 2 separate instruments for safety reason.

The twin cartridges are designed to enable a cumulative sampling of 10 barrels without any loss of information.



Specifications and advantages of this system :

Summary of the analytical specifications of the 3rd generation of TCAtest^D^R :

Short Name	Full Name	Family	CAS #	Detection Limits & quantification range
TCA	2,4,6-trichloroanisole	Halo-Anisole	87-40-1	From 0,1 ng/L to 3,0 ng/L of container
TeCA	2,3,4,6-tétrachloroanisole		938-22-7	From 0,1 ng/L to 3,0 ng/L of container
TBA	2,4,6-tribromoanisole		607-99-8	From 0,3 ng/L to 3,0 ng/L of container
TCP	2,4,6-trichlorophenol	Halo-Phenol	88-06-2	From 1ng/L to 30 ng/L of container
TeCP	2,3,4,6-tétrachlorophenol		58-90-3	From 3ng/L to 30 ng/L of container
TBP	2,4,6-tribromophenol		118-79-8	From 3ng/L to 30 ng/L of container

NEW!

This has many advantages :

- The sampling operation is extremely fast and totally safe for the barrel.
- **The 3rd generation of cartridges now allows the detection of HaloPhenols precursors** that might be converted into HaloAnisoles by moistures inside a new barrel during weeks of storage or shipment.
- The yield of trapping is very high for the HaloAnisoles/Phenols in opposition to a classic water test.
- Because the cartridges are directly Thermally-desorbed on to the analytical instrument, the sensitivity is extremely high compared to need for trace detection (sub ppt level) required for water test.



We can also provide another device based on passive sampling which requires no specific equipment and can follow the barrels during long time shipment.

If you wish to obtain more information about this device, don't hesitate to ask LEC.

- (1) : PolyDiMéthylSiloxane.
- (2) : Volatil Organic Compounds.