

Dear customer, please enjoy reading our actual newsletter !

Frontier Laboratories' Europe Newsletter 01/2018



Featured Product

Frontier Laboratories is offering a broad range of innovative products around Analytical Pyrolyzer or μ -Reactor to increase the performance and flexibility of your PY-GC/MS system.

[In this newsletter \(click\): Vent-Free Adapter](#)

Vent-free GC/MS Adapter is a simple and useful interface used for GC/MS analysis, and allows switching of a GC separation columns while the MS detector is in operation by connecting a highly deactivated capillary tube (id 0.15 mm, length 50 cm or 70 cm) between the separation column and the MS detector. Changing columns takes only a few minutes.

Features:

- It allows fast switching of a separation column and/or an EGA tube without venting the MS detector
- The VF tube is rugged and inert and will not absorb polar species when in use which saves time and increases productivity.
- Vent-free GC/MS Adapter is easily installed by users.



Emerging Application: Qualitative and Quantitative Determination of Micro-Plastic in Environment and Food

Frontier Lab is leading supplier of analytical pyrolyzer for Micro Plastic determination in Europe !

Microplastics are of raising concern, particularly small particles $< 1000 \mu\text{m}$ due to increasing bioavailability, unknown fate, unknown contents in the environment and unknown ecological effects.

The visual identification as plastics is not reliable for plastic particles $< 200 \mu\text{m}$.

Particle related analysis like FT-IR or RAMAN have drawbacks when analyzing very small particles because analysis time increases substantially with decreasing particle size together with increase of spectroscopic interferences. Also, black rubbers can't be analyzed by FT-IR.

A particle independent but mass related method is Pyrolysis GC/MS, particularly for small, "invisible" MP particles & trace analysis. Py-GC/MS is independent of any (time consuming) preselection. Simultaneous detection, identification and quantification of different representative polymer types is feasible and Mass related data (e.g. $\mu\text{g}/\text{kg}$) for individual polymers can be obtained.

Researchers found MPs (see links below) and reported quantitative (ppb and

below) and qualitative MP determination in various matrices like water, fish and salt . Please follow the links below:

[MP in Fleur de Sel \(in German\)](#)

[MP in Fleur de Sel \(in English\)](#)

[Simultaneous determination of MPs in fish](#)

[Micro plastic in seafood](#)



New Technical Notes Available !

The applicability of your GC/MS system greatly expands using Frontier Lab's pyrolyzer and μ -Reactors. We always look for new applications and transfer these into easy-to-read technical notes. Currently, we have more than 100 technical notes downloadable for you in our searchable database - and it is growing continuously. Recently, some new technical notes have been added:

1. PYA3-024E : Determination of red phosphorus in phenol resin
2. **PYA3-025E : Analysis of polyvinyl alcohol contaminated by a small amount of polymer using heart-cut (HC) EGA-GC/MS**
3. PYA3-023E : Outdoor exposure tests of 6,6-nylon cable ties – usefulness of evolved gas analysis (EGA)-MS

[click here to download technical notes](#)



New Literature Available !

Our customers and collaboration partners are successfully working with Frontier Lab Pyrolyzer and μ -Reactors in Research and Development. Please find a brand new publication below:

Non-isothermal pyrolysis properties of Laminaria japonica (T.U. Han et al., J. Anal. App. Pyrol. 130 (2018) 277–284)

- many more publications are available !

[click here to download publications](#)

IMPRESSUM

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