Biology, chemistry

FUNCTIONAL MECHANISM AND PROCESS FOR EXTRACTING ORGANIC MOLECULES

An innovative process for extracting non-volatile molecules

Technological advantages

A simple, high-performance process

Direct analysis of organic compounds contained in solid, liquid or gaseous samples

Analysis performed in «one pot», in one or two steps at most

Temperature controls and monitoring, with possibility of programming temperatures with a maximum gradient of approximately 30°C/min

An innovative system

Process for extracting molecules with low volatility and refractory molecules

The reaction chamber can be isolated from the rest of the assembly, making it possible to process the sample (derivatisation, thermochemolysis)

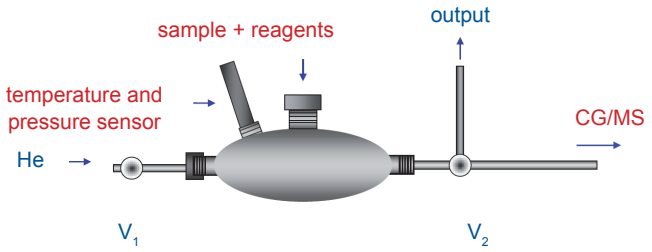
Technical characteristics

Sample volume < 0.5ml

Sample weight: 0.5 to 2g

Ambient temperature raised to 500°C in less than 15s

Temperature lowered from 500°C to 75°C in less than 15s



Schematic diagram

Overview of invention

Organic molecules absorbed by a solid support are extracted either using a solvent together with ultrasound, or directly via thermal desorption.

When high-temperature thermal desorption is used, the molecules are derivatised directly on the solid sample and analysed via chromatography in a gaseous phase.

Potential applications

Space: in situ chemical analysis of trace compounds in extraterrestrial environments such as the surface of Mars

Non-space applications:

- Food industry
- Agronomic industry: soil sample analysis
- Research laboratories: analysis of trace compounds
- Perfume industry

Commercial benefits

A single device and process

Innovative technology

Tested and validated prototype

TRL : 4 (2010)

Patented invention, available under license

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For more inforamtion

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