**IA BREATH ANALYZER FOR H2 AND CH4 ANALYSIS**

## Why a patient needs a breath test?

This test is carried out to check whether the patient can properly absorb a specific sugar, in some cases the body is unable to digest sugars like a lactose or fructose. The test measures a breakdown product of the sugar (hydrogen and Methane – as a gas) in the breath. If the sugar is not properly absorbed, it is fermented by bacteria in the bowel, and hydrogen/methane is produced as a by-product. Under normal circumstances there is no/very little hydrogen and methane in your breath. This will remain unaltered if the sugar is absorbed in the intestine.

## What does the test involve?

There is some preparation required before the test. This preparation involves stopping certain medication and fasting. Before sampling, the patient needs to drink a sugar-heavy beverage, after drinking the solutions, the patient has to blow the exhalate using a straw inside a tube. The patient needs to repeat the same procedure for the next three hours.

## How our breath analyzer works?

Ingeniería Analítica have developed an instrument that make all the analytical pre-treatment, sample injection and analysis automatically. The analyzer has a customized PAL autosampler for the sample pre-treatment linked to an Agilent MicroGC 990 with our own interface. The laboratory technician only must load the labeled tubes inside the instrument carrousel and start the sequence. The robot will take the tube, will read the code Bar 1D/2D and will inject the sample inside the MicroGC automatically. In less than 3 minutes the MicroGC will report the Hydrogen, methane, and carbon dioxide (control analyte), the result could be reported to LIMS

## Features

- Cycle time: Less than 3 minutes/tube
- Calibration range:
    - Hydrogen: 5 ppm to 200 ppm
    - Methane: 5 ppm to 50 ppm
    - Carbon Dioxide: 1,5% to 7,0 %
- Capacity: until 720 tubes
- Tubes: Compatible with 12 ml breath sampling Exetainer® tubes
- Calibration: Automatic or Manual
- LIMS connection: Available on demand.
- Reproducibility ≤ 2,5% RSD
- Gas requirements: Argon and Helium

**Specifications:**

| | **IABREATH0001** | **IABREATH0002** | **IABREATH0003** | **IABREATH0004** |
|---|---|---|---|---|
| Tubes Capacity | 576 | 720 | 576 | 720 |
| Calibration | Manual | Manual | Automatic | Automatic |
| Cycle time | 3 minutes | | | |
| Analites | H2, CH4, CO2 | | | |
| RSD | 2,5% (H2,CH4) 1,5% (CO2) | | | |
| Gas Requeriments | Argon and Helium | | | |
| Gas Pressure | 550 ±10 kPa (80 ±1.5 psi) | | | |
| Tubes | 12 ml breath sampling Exetainer® tubes | | | |
| Bare codes | Compatible with 1D and 2D bare codes | | | |
| Operational Temperature | 0 to 50 ºC | | | |
| Operational Humidity | 5 to 95 % (without condensates) | | | |
| Dimensions (WxDxH) | 190 mm x 80 mm x 80 mm | | | |
| Weight | 60 Kg | 65 Kg | 60 Kg | 65 Kg |
| Power | 90-240Vac 50/60Hz | | | |

**H2S Analysis Option:**

We've developed and Up-grade system that combine the detection of H2, CH4 and CO2 with the analysis of H2S in the same sample. The analysis of H2S it's important for the intestinal microbiota study in applications like the precise evolution of small intestinal bacterial overgrowth (SIBO). This analyzer version includes an specific channel for the H2S analysis

**Specifications:**

| | **IABREATH0005** | **IABREATH0006** | **IABREATH0007** | **IABREATH0008** |
|---|---|---|---|---|
| Tubes Capacity | 576 | 720 | 576 | 720 |
| Calibration | Manual | Manual | Automatic | Automatic |
| Cycle time | 3 minutes | | | |
| Analites | H2, CH4, H2S, CO2 | | | |
| RSD | 2,5% (H2,CH4, H2S) 1,5% (CO2) | | | |
| Gas Requeriments | Argon and Helium | | | |
| Gas Pressure | 550 ±10 kPa (80 ±1.5 psi) | | | |
| Tubes | 12 ml breath sampling Exetainer® tubes | | | |
| Bare codes | Compatible with 1D and 2D bare codes | | | |
| Operational Temperature | 0 to 50 ºC | | | |
| Operational Humidity | 5 to 95 % (without condensates) | | | |
| Dimensions (WxDxH) | 190 mm x 80 mm x 80 mm | | | |
| Weight | 60 Kg | 65 Kg | 60 Kg | 65 Kg |
| Power | 90-240Vac 50/60Hz | | | |