IGA-003-MC
BINARY GAS SORPTION ANALYZER

Hiden Isochema announces the launch of the

IGA-003-MC gravimetric sorption analyzer for binary gas mixtures.

KEY FEATURES

- Unique IMB method used to measure binary gas adsorption isotherms
- Single component and binary data can be determined in one experiment
- Only a few grams of sample required
- Precise control of pressure, composition and temperature conditions
- Fully automated operation, including integrated mass flow and MS calibration routines

For more information please contact our sales and application team via info@hidenisochema.com

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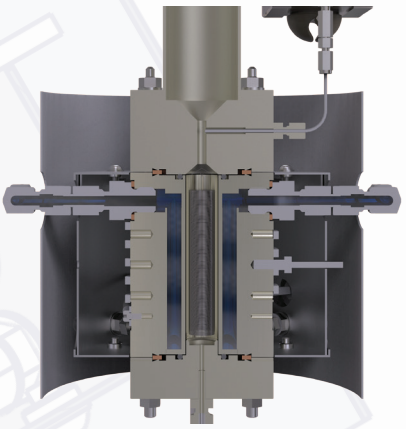
The **IGA-003-MC** is a turnkey system for binary gas sorption, featuring a gravimetric analyzer, coupled mass spectrometer, and an optimized gas delivery and sampling system

Binary Gas Sorption

Measuring multicomponent gas sorption equilibria is essential to characterize and assess adsorbents for applications such as N_2 and O_2 production from air, natural gas upgrading, and H_2 purification. Both partial adsorbed quantities and selectivities, as a function of gas molar fraction, are required to accurately model such separation and purification processes. Traditional multicomponent methods are often time-consuming and require large samples, but fast and accurate measurements, on only a few grams of material, are now possible using Hiden Isochema's newly developed Integral Mass Balance (IMB) method.

The IMB Method

A controlled mixed gas flow is combined with in situ gravimetric measurement and outlet gas composition analysis using a mass spectrometer (MS). The gas mixture flows over a sample, suspended from the IGA microbalance, in a dedicated reactor with optimized flow path and MS sampling port. Inlet flow rate and outlet gas composition analysis are combined with in-situ gravimetric data to calculate the partial adsorbed quantities, as a function of gas molar fraction. Total adsorbed quantities, meanwhile, are determined directly from the measured weight change. Full time-dependent data is recorded and analyzed to ensure steady state conditions are achieved at each step of the measurement. Both partial adsorbed quantities and selectivities can be rapidly and accurately measured at different temperatures, pressures and compositions.



The IMB method is unique to Hiden Isochema's IGA-003-MC binary gas sorption analyzer

IGA Series

IGA-001

High accuracy gravimetric analyzer, for precise characterization of gas sorption equilibria and kinetics

IGA-002

Single component gas and vapor sorption analyzer for high resolution isotherm, kinetic and diffusion measurements

IGA-003

Gravimetric gas sorption analyzer with combined pressure and flow control plus integrated TGA-MS option

IGA-100

Advanced gas and vapor sorption analyzer, combining all IGA-002 and IGA-003 features

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