PRODUCT DATASHEET

High-Pressure Gas Adsorption Isotherm Analyser for Shale and Coal

Methane and CO_2 storage capacity of shale and coal





DETAIL – SAMPLE AND REFERENCE CELLS IN THE BATH

OVERVIEW

The Tech Inc. High-Pressure Gas Adsorption Isotherm Analyser for Shale and Coal measures how much methane, CO_2 or nitrogen a crushed shale or coal sample holds at reservoir pressure and temperature. Four sample cells and a reference cell sit in a thermostatted bath; gas is expanded step by step from the reference cell and the pressure drop gives the adsorbed amount at each point of the isotherm.

MODELS AND CONFIGURATIONS

- **Four-cell analyser** – parallel isotherms.
- **CO_2 model** – supercritical CO_2 with density correction.
- **Gravimetric option** – magnetic suspension balance for small samples.

TYPICAL DESIGN DATA

Model	TI-HPA-400 series
Cells	4 sample cells plus reference cell
Pressure	Up to about 700 bar (10,000 psi)
Temperature	Ambient to 150 °C
Gases	Methane, CO_2, nitrogen, helium
Sample	Crushed rock, about 50 to 100 g per cell

APPLICATIONS

Shale gas in place, coalbed methane, CO_2 sequestration and enhanced coalbed methane studies, and adsorbent testing for gas storage.

KEY ADVANTAGES

- **Parallel** – four isotherms per run
- **Reservoir conditions** – pressure and temperature to match the field
- **Unattended** – automatic dosing and equilibrium checks
- **Documented** – void volume and real-gas corrections reported

Designed and built by Tech Inc. · **Part of the Davey Group since 1990**

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