PRODUCT DATASHEET

CO_2 and Hydrogen Storage Core Test System

Caprock permeability, breakthrough pressure and cyclic gas injection in cores

Product page





Close-up: titanium tri-axial holder and gas booster

OVERVIEW

The Tech Inc. CO_2 and Hydrogen Storage Core Test System answers the questions a CO_2 or hydrogen storage project must settle in the lab: how tight is the caprock, at what pressure will gas break through it, how much permeability changes when CO_2 reacts with brine and rock, and what happens to the reservoir rock when hydrogen is injected and withdrawn again and again. The system combines a high-pressure core holder, gas and brine pumps, pulse-decay permeability and a cycling controller.

TYPICAL DESIGN DATA

Pore pressure	To about 350 bar
Confining pressure	To about 700 bar
Temperature	To about 150 °C
Codes and standards	Pressure parts designed with a safety factor on burst; hydrogen safety to ISO/TR 15916 guidance
Permeability range	Pulse decay into the nanodarcy range
Wetted materials	Titanium or C-276 for wet CO_2 and brine; hydrogen-compatible seals
Safety	Hydrogen detection, venting and interlocks for hydrogen service

MODELS AND CAPACITIES

- **TI-GSP-200** – about 200 bar
- **TI-GSP-350** – about 350 bar
- **TI-GSP-CAP** – caprock module
- **TI-GSP-H2** – hydrogen cycling version

Indicative pore-pressure rating.

ORDERING CODE

Example **TI-GSP-350-C-T**: **350** pore pressure, bar; **C** gas: C CO_2, H hydrogen, B both; **T** material: T titanium, C C-276.

SCOPE OF SUPPLY

Included: factory acceptance test with a written report; drawings for approval, material certificates and manual. **Options:** effluent sampling for brine chemistry; acoustic or resistivity monitoring; gas-adsorption isotherm analyser; x-ray-transparent holder; annual service.

KEY ADVANTAGES

- **Tight rock** – pulse decay into nanodarcy
- **Cycling** – repeated injection and withdrawal
- **Real gases** – wet CO_2 and hydrogen at pressure
- **Safe** – hydrogen detection and venting

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

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