

# BELSORP-HP

High pressure gas sorption measurement

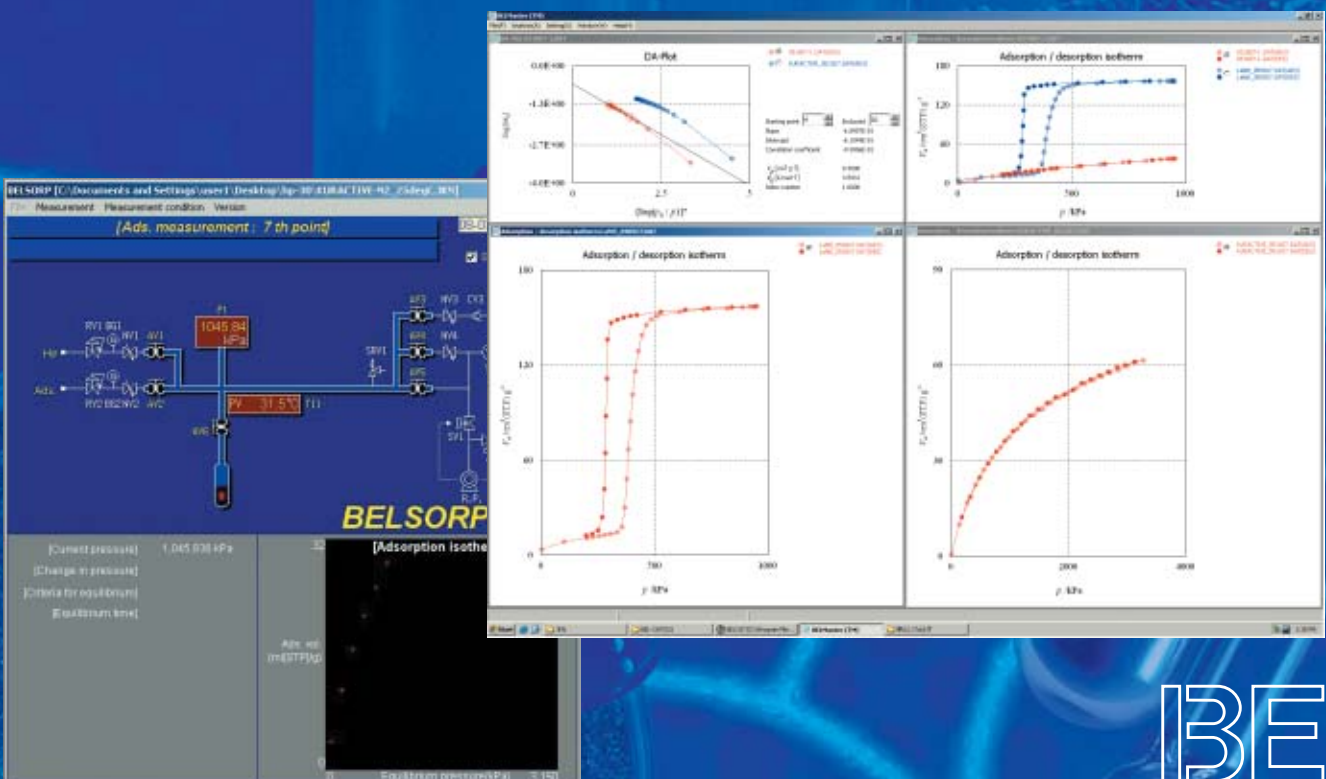


**High pressure gas sorption measurement (13.5MPa Max.)**

**Compact design**

**H<sub>2</sub> storage (PCT-curve)**

The importance of high pressure adsorption measurement is growing in various industries, hydrogen or methane storage, pressure swing adsorption (PSA), CO<sub>2</sub> absorption into hypolymer, etc. But the instruments for measuring high pressure gas sorption are large-size, expensive and hard to use. The BELSORP-HP is a small foot print bench-top type instrument. Also low price and easy to operate. Over years of our experience in adsorption science results in its technology. The BELSORP-HP would provide the useful information with the researchers in both research and industrial fields.



## FEATURES

- **High pressure adsorption measurement up to 13.5MPa**  
High accurate pressure transducers enable gas sorption measurement with high accuracy.
- **Compact bench-top type**
- **Easy to use**  
Just with simple operation and parameter setting, adsorption measurement can be performed automatically. Displayed valve status, pressure values and a real-time isotherm on the screen, the measurement progress can be checked easily.
- **A variety of measurement/pretreatment temperature control systems from 77K to 400°C**

|                            |  |
|----------------------------|--|
| Heater                     | : For temperature range 50 ~ 400°C.  |
| LN <sub>2</sub> controller | : For temperature 77K(LN <sub>2</sub> ) and 87K(Ar). Liquid coolant level can be controlled. |
| Water bath                 | : For temperature range -10 ~ 70°C*.   |
| BEL-thermo™                | : Peltier temperature controller (10 ~ 50°C). Compact and affordable system.                 |

\*Temperature range depends on the refrigerated/heating circulator provided at the customer's site.

- **BELSim™- Analysis software**  
BELSim is powerful analysis software. Various analytic approaches are available with just simple operations.
- **BELDyna™ - Adsorption rate analysis software**  
Adsorption rate is an important factor which indicates the dynamic behavior of adsorption. BELDyna™ can create the graph of concentration changes against time. In addition to that, the pore diffusion coefficient and mass transfer coefficient (LDF) can be obtained. These values are useful for kinetic study of adsorption.
- **JIS H7201 compliant**

## SPECIFICATIONS

|                                   |  |  |
|-----------------------------------|--|--|
| Measurement principle             | Volumetric adsorption method   |  |
| Adsorptive                        | N <sub>2</sub> , Ar, O <sub>2</sub> , CO, H <sub>2</sub> , CO <sub>2</sub> , CH <sub>4</sub> and other non-corrosive gas   |  |
| Analysis / pretreatment port      | 1  |  |
| Pressure transducer               | Range : Select one among F.S. 1, 1.5, 2, 3.5, 13.5MPa<br>(133kPa for low pressure measurement can be added)<br>Accuracy : 0.08%F.S.  |  |
| Measurement pressure range        | 85% of pressure transducer F.S.  |  |
| Temperature range                 | -10~ 400°C   |  |
| Measurement software              | Adsorption / desorption isotherm measurement and adsorption kinetic.   |  |
| Analysis software<br>(BELMaster™) | Adsorption / desorption isotherm<br>BET method<br>Langmuir method<br>Horvath-Kawazoe method<br>Saito-Foly method<br>Micropore volume by DA method<br>Isosteric heat of adsorption (Clausius-Clapeyron equation)<br>(Option : BELDyna™ - Adsorption rate analysis software) |  |
| Physical                          | W600xD300xH600 mm, 60 kg   |  |
| Utility                           | Gas  | He: pres. 0.2 bar (Gauge) (joint: 1/8" Swagelok)<br>Air for pneumatic valve: pres. 4~5 bar (Gauge) (joint: quick connect for 1/4" plastic (teflon) tube) |
|                                   | Power  | AC100 ~ 120, 200 ~ 240V/ 500W  |

- A personal computer, an oil vacuum pump and a refrigerated/heating circulator (when water bath is selected) would be provided at the customer's side.
- Due to our policy of continuous product improvement, the specifications and the information are subject to change without notice.



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SORPTION INSTRUMENTS



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