



IGA SORP CORE

DYNAMIC VAPOR SORPTION ANALYZER

**A COMPACT, AUTOMATED ANALYZER
FOR ESSENTIAL DVS PERFORMANCE**

Engineered to deliver the performance that matters, the **IGA Asorp Core** gives laboratories dependable DVS capability without the cost or complexity of a full research grade system.

The **IGA Asorp Core** is a compact, automated dynamic vapor sorption system designed for effortless routine measurements. It makes high-quality data accessible without complexity. Built on the same engineering principles as our flagship systems, it focuses on the essentials needed to generate results you can trust. Its robust design and intuitive software deliver fast, reliable performance and set a new standard for entry-level DVS.



- ▶ **Designed for essential water sorption studies**
- ▶ **Delivers superior stability from 15 to 40 °C** unmatched in entry-level DVS
- ▶ **Measures temperature and humidity directly at the sample** for true environmental accuracy
- ▶ **Sub-microgram balance resolution** for confident detection of small sorption events
- ▶ **Hisorp software streamlines workflows** with guided methods, automatic reporting, and integrated analyses
- ▶ **Built for long term reliability and backed by a 3-year warranty**

MEASUREMENT TYPES

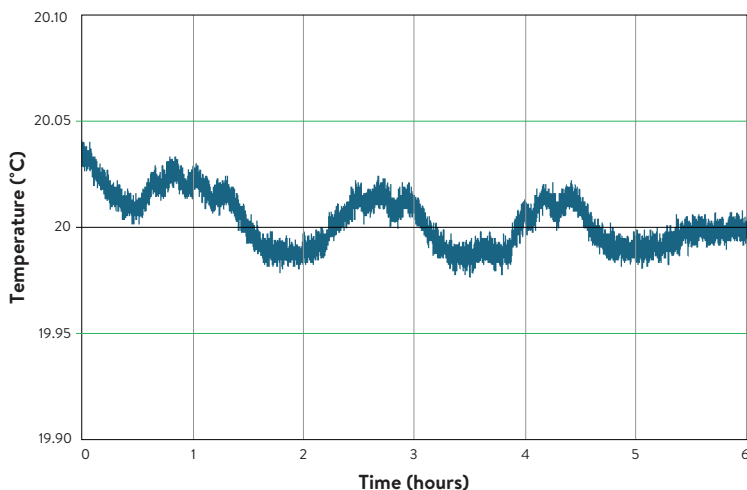
- ▶ Isotherm and kinetics analysis
- ▶ Moisture content determination
- ▶ Hydrophobicity, product stability and shelf life
- ▶ Water activity determination
- ▶ Cyclic/lifetime studies
- ▶ Hydrate analysis
- ▶ Permeation and diffusion studies
- ▶ Glass transition and amorphous content studies
- ▶ Drying and dehydration

APPLICATIONS

- ▶ Porous materials
- ▶ Pharmaceuticals and biotech
- ▶ Food products and consumables
- ▶ Polymers
- ▶ Packaging materials
- ▶ Personal care and cosmetic products
- ▶ Building and construction materials
- ▶ Natural materials
- ▶ Energy and environment

KEY FEATURES

PREMIUM TEMPERATURE STABILITY IN AN ENTRY-LEVEL SYSTEM



Whereas other entry-level DVS systems compromise on temperature stability, the IGAsorp Core offers premium-grade thermal control across its **15 to 40 °C operating range**.

An advanced thermostat, the **iSSB**, is used for regulating measurement chamber temperature.

Developed by Hiden Isochema, the iSSB thermostat provides rapid and precise temperature adjustments, for heating and cooling.

Unmatched sample temperature stability of ± 0.05 °C.

TRUE ENVIRONMENTAL CONTROL – CONDITIONS MEASURED WHERE THEY MATTER

Environmental control is only meaningful when measured at the sample – not somewhere upstream.

The IGAsorp Core places both temperature and humidity sensors within 10 mm of the sample, ensuring reported conditions reflect the actual sample environment.

With a humidity range of **0 - 98% RH**, **programmable gas flow 100 - 500 mL/min**, and **control stability of 0.01% RH**, the Core gives users precise, reproducible environmental control.



MICROBALANCE STABILITY YOU CAN SEE IN THE DATA

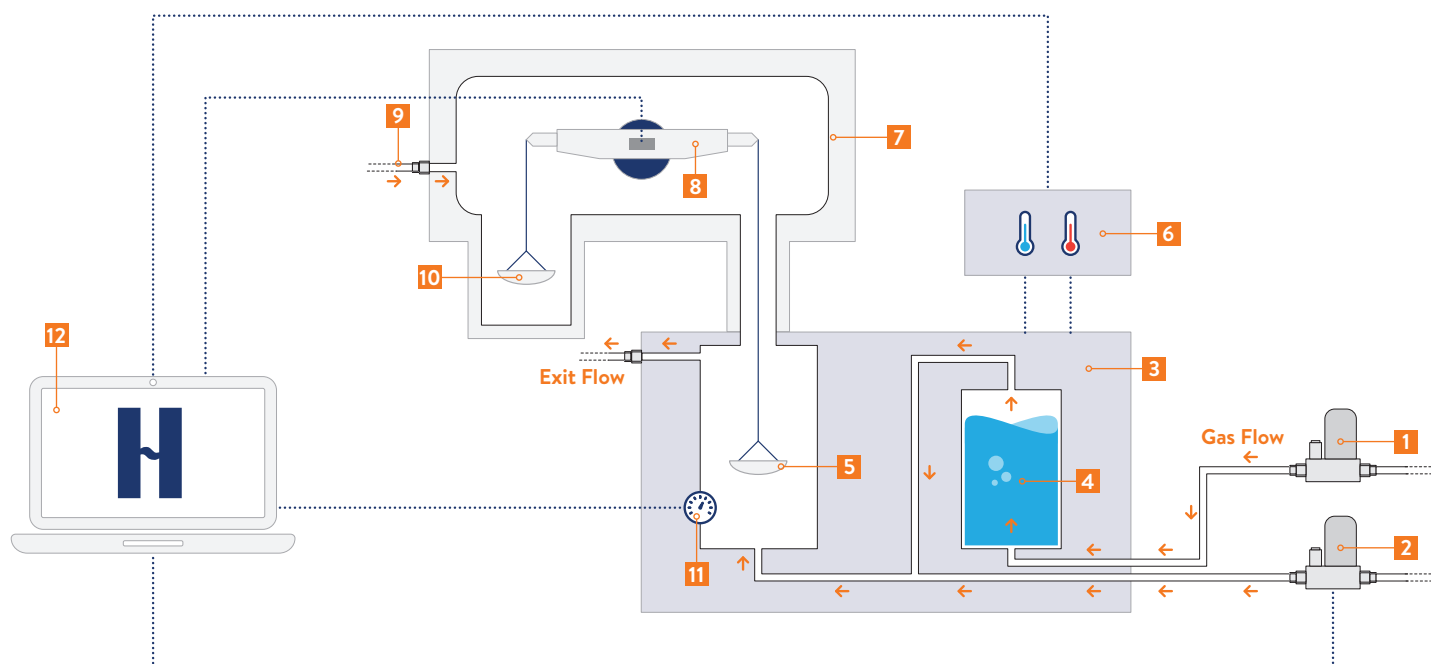
At the heart of the IGAsorp Core is **Hiden Isochema's proven microbalance technology**, delivering best in class performance for an entry-level system.

The IGAsorp Core's independent balance thermostat ensures long-term baseline stability, enabling confident measurement of **sub-microgram sorption events**.

Low-mass and high-mass balance options are available.



HOW IT WORKS



Mass Flow Controllers (MFCs)

- 1 MFC (Wet)
- 2 MFC (Dry)

Sample Chamber

- 3 Thermostated chamber
- 4 Humidity generator
- 5 Sample
- 6 iSSB thermostat

Balance

- 7 Balance chamber
- 8 Hidden Isochema microbalance
- 9 Balance purge
- 10 Counterweight

Software and Control

- 11 Sensors (Temperature, RH)
- 12 Instrument control powered by onboard firmware and HIsorp software

ACCESSORIES

IGAsorp Core offers a choice of **specialized sample holders**, including holders for powders and liquids as well as the **permeation membrane cell** for accurate measurement of **moisture vapor transmission rates (MVTR)**. This flexibility ensures the system adapts to a wide range of materials and workflows.



Conformance test kits are also available, providing a simple, traceable way to verify instrument performance. Integrated software workflows guide users through each step and automatically generate validation reports for confident, audit ready operation.

HISORP. USER-FRIENDLY, VERSATILE SORPTION SOFTWARE.

GUIDED WORKFLOWS & EFFORTLESS OPERATION

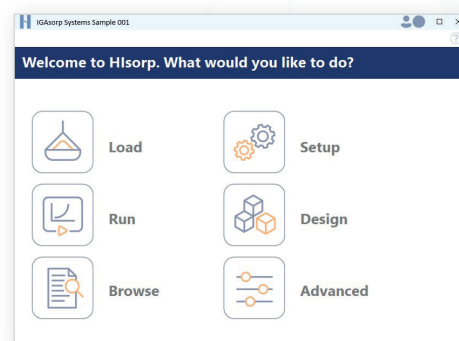
With guided workflows and ready to go method templates, starting a measurement is simple – load the sample, choose the method, and press Start.

Data processing, visualization and export are included in the same unified environment too – no additional tools required.

DATA SECURITY & ACCESS CONTROL

Hlsorp is fully compliant with the **US FDA's 21 CFR Part 11**, with data security, user management and audit trail features.

Role-based access also ensures consistency in regulated or multi-user laboratories.



ACCELERATED ACCURACY WITH IGA METHOD

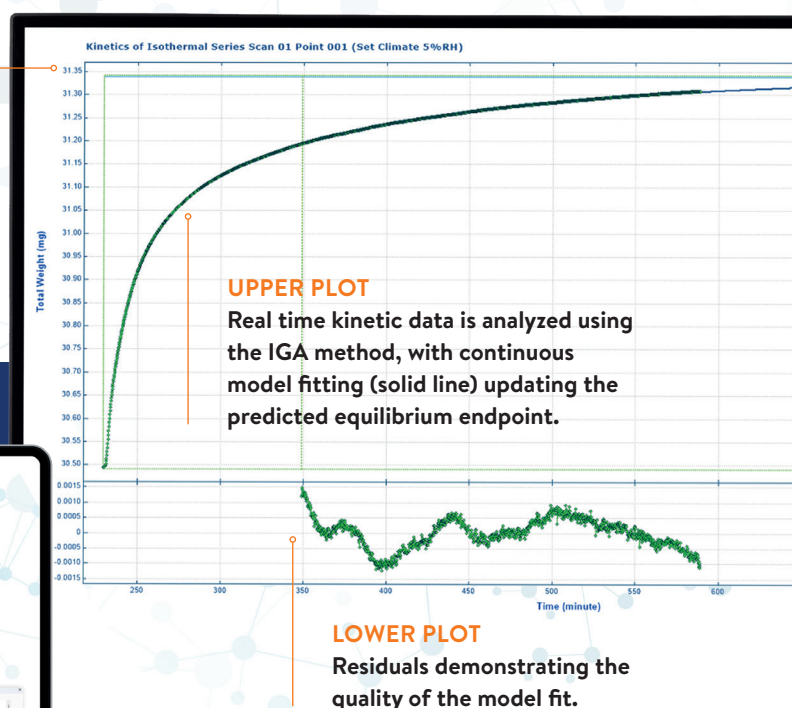
The **IGAsorp Core** applies the **unique IGA method** to capture both kinetics and equilibria with exceptional accuracy. Optimized equilibrium detection shortens experiment times while maintaining consistency.

Real-time modeling of weight-time data predicts equilibrium and applies objective criteria automatically, ensuring reliable, repeatable results.

In this example, after around 6 hours of data collection, the IGA method predicts the equilibrium uptake and advances the experiment, avoiding the full 9 hour wait required for natural equilibration.

Hlsorp software display showing plots of acquired kinetics data and the measured isotherm for microcrystalline cellulose.

Each plot updates in real time as the experiment progresses



Isotherm
experiment
editor

IGASORP CORE

TECHNICAL SPECIFICATIONS

TEMPERATURE

Isothermal measurement chamber with advanced iSSB thermostat

Temperature control range	15 - 40 °C
Sample temperature stability	± 0.05 °C
Temperature resolution	0.01 °C
Location of sample temperature measurement	< 10 mm from sample

HUMIDITY

RH control range	0 - 98% RH for 15 - 40 °C
RH performance	± 0.5% RH (based on factory conformance testing at standard conditions)
RH resolution	0.01% RH
RH control stability	± 0.01% RH
Location of sample RH measurement	< 10 mm from sample
Gas flow rate	100 - 500 mL/min (programmable)
Carrier gas	Dry air, nitrogen or helium

WEIGHT

LOW-MASS BALANCE

Capacity	1 g
Weighing range	200 mg
Resolution	0.01 µg
Balance noise	< 0.25 µg RMS over 24 hours

GENERAL

Reservoir capacity	150 mL
Dimensions	48 (w) x 55 (d) x 70 (h) cm
Electrical	110 - 240 V a.c. 50/60 Hz, 500 W
Computer interface	USB/RS232

HIGH-MASS BALANCE

Capacity	5 g
Weighing range	200 or 1000 mg
Resolution	0.1 µg
Balance noise	< 2.5 µg RMS over 24 hours

OPTIONS

Various sizes and geometries of sample holders
Dedicated membrane permeation cell
21 CFR software upgrade
IQ/OQ and preventative maintenance packages

It is Hidden Isochema's policy to continually improve product performance and therefore specifications are subject to change.



SUPPORT

- ▶ Hidden Isochema offers unrivalled technical support free of charge for the lifetime of every instrument
- ▶ Telephone and email access to our team of highly qualified engineers with a guaranteed response time within 24 hours
- ▶ Global network of trained engineers
- ▶ 3 year warranty as standard
- ▶ A range of service contracts and extended warranty options available

CONTACT US

If you have any questions about **IGAsorp Core** or any of Hidden Isochema's products or services, please get in touch.

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