

IGASORP DELIVERS FOR POLYMERS

HIDEN
ISOHEMA

Why DVS is Essential for Polymers

DVS reveals how polymers respond to humidity and organic vapors, enabling scientists to predict compatibility, durability, and performance under real-world conditions. By replicating environmental stresses, DVS also uncovers unwanted behaviors, such as swelling and degradation. These are insights that guide material design, packaging innovation, and product reliability.

Critical Use Cases

- ▶ **Isotherms:** Track water/organic uptake vs humidity or pressure; reveal hysteresis or swelling
- ▶ **Diffusion & Permeability:** Derive transport rates and diffusion coefficients for barrier design
- ▶ **Stability & Weathering Testing:** Assess performance under temperature/ humidity cycling

IGAsorp: Rethink DVS. Unlock Better Outcomes

Key IGAsorp Features

COMPREHENSIVE CONTROL

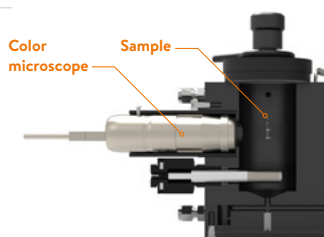
- ▶ Simulate end-use and stress conditions
- ▶ Wide temperature and humidity range (up to 85 °C and 98% RH)
- ▶ Organic vapor sorption for material compatibility tests

VERSATILITY

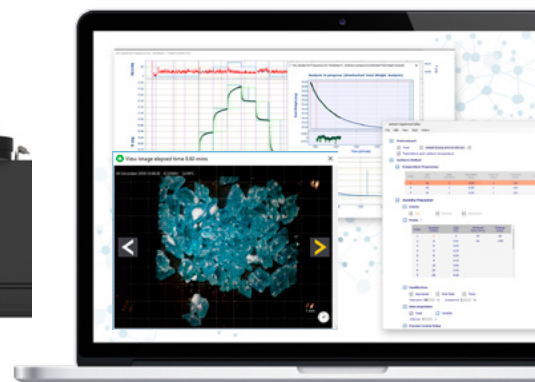
- ▶ Flexible sample containers for milligram-scale films to larger sheets
- ▶ Dedicated permeation cell for transport studies

PRECISION INSIGHTS

- ▶ **Built-in kinetic modelling tools** for accurate diffusion coefficient calculation
- ▶ **Optional color video microscope** enables direct observation of sample behavior

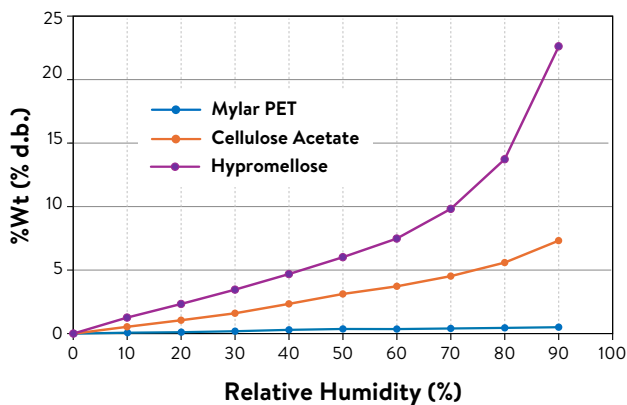


IGAsorp empowers engineers to design more functional polymers, and deliver materials that perform reliably in the real world



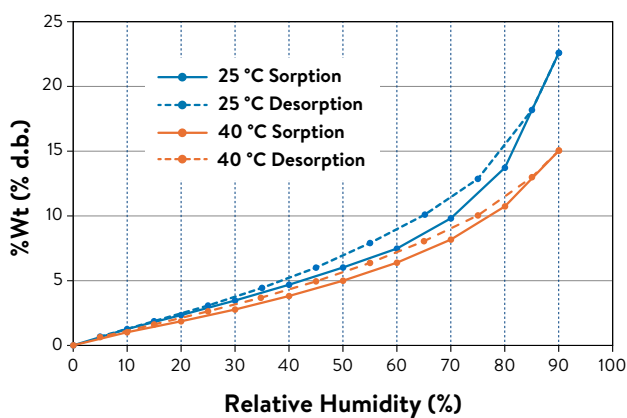
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EXAMPLE DATA

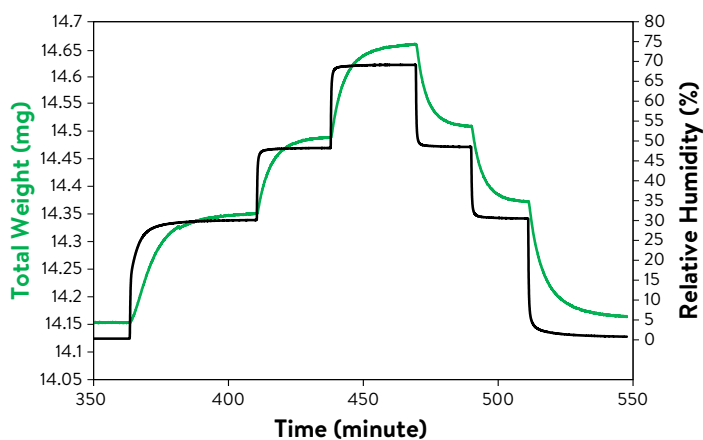


Water sorption isotherms measured at 25 °C for three functional polymers.

Polymer	Typical Applications
Polyethylene terephthalate (PET)	Packaging / barrier material
Cellulose Acetate (CA)	Membranes, optical films, structural components
Hypromellose (HPMC)	Controlled release drug formulations



Temperature dependence of water sorption of Hypromellose (HPMC).



Kinetics data for 0.1 mm thickness cellulose acetate film at 25 °C following RH steps during sorption and desorption.

Permeation Membrane Cell

The IGAsorp offers a choice of specialized sample holders, including the permeation membrane cell for accurate measurement of moisture vapor transmission rates (MVTR).

MVTRs measured through a polymer film. **H1** is the humidity within the cell, whilst **H2** is the external humidity.

