

VAPOR SORPTION ANALYZER

metergroup.com/environment/products/vapor-sorption-analyzer/



Moisture Release Curves

Soil water characteristic curves in the dry region don't get any easier

Moisture release curves are your job. Spending countless hours in the lab shouldn't be.

Characterizing soil beyond basic measurements is complicated. Yes, you can assemble a series of complex devices on your own to help understand soil behavior better. But even with a dedicated graduate student at your disposal, the process will still prove difficult. What you need is an automated instrument.

VSA also stands for very simple and highly accurate

If you want to know something about your soil—how it behaves, how much clay there is, or if there are crystalline structures that may expand when water is present, the VAPOR SORPTION ANALYZER (VSA) is your simplest and most accurate option. It automates the entire process of moisture release curve construction in the dry region (-10 to -475 MPa) by accurately measuring simultaneously, at regular intervals, the water potential and the moisture content of a sample. The result is relief from a time-consuming, expensive, and complicated process.

Set up a test, and walk away

With the VSA, it takes about five minutes to set up a test. Simply tell the instrument the humidity levels and times you'd like to use, put the sample into the instrument, and move on to other tasks. The data from your test are automatically recorded and sent to your computer. In just 24 to 48 hours, the VSA generates curves with up to 200 data points (water potential vs. water content) for both adsorption and desorption. Powerful automation adds up to powerful time savings.

Delve deeper into your dry soil analysis

The VSA enables you to study the soil at a particle level, examining its chemical makeup and how the layers of soil imbibe water as it gets wetter or lose water as it gets drier. It's the first instrument to generate both Dynamic Dew Point Isotherm (DDI) and Dynamic Vapor Sorption (DVS) moisture release curves. This means the VSA continuously wets the sample and stops periodically to measure how heavy it is (DDI), or it keeps the sample at a constant humidity, recording how long it takes for the sample to come to equilibrium (DVS).

With so much automation at your fingertips (including both drying and wetting), making moisture release curves can now officially be considered convenient.

Soil moisture release curves—simplified

Simple. Automated. Precise. The VSA saves you time and frustration by eliminating the complexity of custom techniques and automatically generating soil moisture release curves in the dry range. Powerful 'click and read' efficiency makes it easier than ever to draw accurate conclusions about your soil's behavior, its expansibility, its makeup, and its performance as an engineering material.

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Features

- Fast, expansive soil characterization
- Automatic static and dynamic soil water characteristic curves
- Click and read efficiency
- Generates curves with up to 200 data points for both adsorption and desorption
- Works in the dry soil range (-10 to -475 MPa)
- Set up a test in five minutes
- Hold humidity constant with the new static feature

Specifications

Water potential range	-10 to -475 MPa
Accuracy	±1 MPa, or ± 1%
Isotherm methods	Dynamic Dew Point Isotherm (DDI) & static DVS (Dynamic Vapor Sorption)

External gas	Not needed. If external gas is used, no more than 7 PSI.
Water reservoir	20 mL
Temperature control range	15 to 60 °C (sample chamber temperature; sample temperature is measured separately and may vary)
Temperature operating range	15 to 40 °C
Humidity operating range	10-90% non-condensing
Computer interface	USB
Universal power	110 V to 220 V AC 50/60 Hz
Dimensions	W 25.4 cm (10 in.) x L 38.1 cm (15 in.) x H 30.5 cm (12 in.)
Weight	12.7 kg (28 lbs.)
Sample weight range	500-5000 mg
Sample cup volume	10 cc
Weight accuracy	± 0.1 mg

Accessories



Verification Standards (50 Vials)



Stainless Steel Sample Cups/Lids



Desiccant

Support

Have a question or problem? Our support team can help.

We manufacture, test, calibrate, and repair every instrument in house. Our scientists and technicians use the instruments every day in our product testing lab. No matter what your question is, we have someone who can help you answer it.

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Downloads

[VAPOR SORPTION ANALYZER Manual PDF / 4.21 MB](#)

[VAPOR SORPTION ANALYZER Quick Start PDF / 1.33 MB](#)

VSA Firmware Updater 1.49 EXE / 1.28 MB

Related Products



HYPROP 2*

The improved version of the evaporation method in the lab to determine the pF curve and the unsaturated conductivity of soils sets a new benchmark. HYPROP makes highly precise, simultaneous measurements of hydraulic characteristics during the natural desiccation of the soil. Thus, HYPROP delivers data with high resolution in a minimal period of time under natural conditions.

[Learn more](#)

[Get pricing](#)



WP4C

The WP4C measures water potential by determining the relative humidity of the air above a sample in a sealed chamber (conforms to ASTM 6836).

[Learn more](#)

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