DTR 1000



The Palas diffusion dryer specifically reduces the moisture content of aqueous aerosols derived from aqueous solutions or suspensions.

It ensures defined and stable conditions in the aerosol system, thereby supporting reproducible measurements, calibrations, and downstream process steps.

Thanks to gentle conditioning, the particle characteristics are largely preserved.

OPERATION PRINCIPLE

The diffusion dryer is typically integrated into the aerosol system downstream of the aerosol generator and is used for the targeted conditioning of humid aerosols.

Residual moisture can influence particle behavior—particularly in sensitive measurement procedures—and lead to increased measurement uncertainties.

Inside the diffusion dryer, the aerosol stream is guided in a controlled manner through a flow element surrounded by a separate chamber containing a desiccant. This maintains a consistently low water vapor concentration within the device.

Due to the concentration gradient, water vapor diffuses from the aerosol into the drying zone, where it is bound. Drying occurs passively, without the addition of heat or moving parts. Since the aerosol does not flow directly through the desiccant, particle loss is minimized.

Benefits

- Stable and controlled humidity conditions in the aerosol system
- Gentle drying without thermal stress
- Minimized particle loss thanks to a low-contact drying principle
- Regenerable desiccant for long-term use
- Seamless integration into existing Palas aerosol systems

DATASHEET

Aerosol outlet connection	8 mm Festo push-in fitting
Aerosol inlet connection	8 mm Festo push-in fitting
Dimensions	Long pillar: 55 cm
Weight	Curb weight: Long pillar: 1,284 kg

Applications

- Conditioning of humid aerosols prior to particle analysis measurements
- Generation of stable calibration aerosols from aqueous reference particle suspensions (e.g., PSL)
- Use in systems for the generation and analysis of condensation aerosols
- Use in research, development, and testing and calibration environments at ambient pressure

Mehr Informationen:
https://www.palas.de/en/product/DTR1000