

Anton Paar's MHC-trans chamber is designed for powder X-ray diffraction measurements in transmission geometry at controlled temperature and humidity conditions.

## Non-ambient attachment for XRD

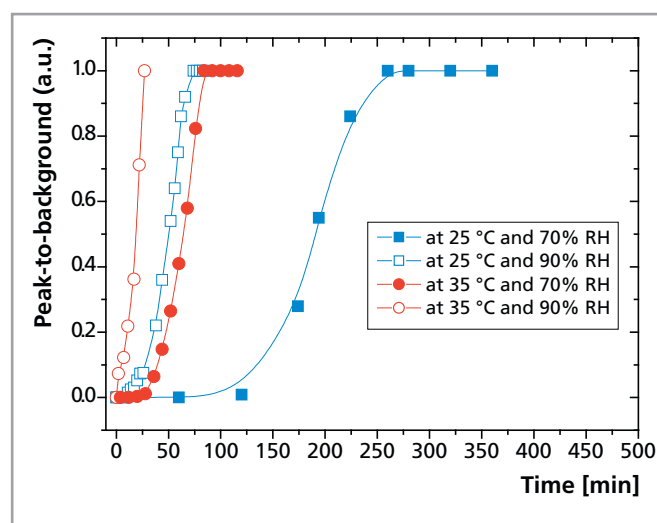
# MHC-trans – multi-sample humidity chamber

### Benefits

- Humidity experiments with full automatically combined control of temperature and humidity
- High temperature uniformity over the entire sample volume due to environmental heating
- Transmission geometry (flat plate) is ideal for materials with large unit cells (excellent low-angle performance)
- Accurate measurement of temperature and relative humidity
- Built-in sample changer for 8 samples
- Easy handling and exchange of samples

### Application example

The graph below highlights the effect of temperature and relative humidity on the crystallization speed of amorphous salbutamol sulfate, here shown as a peak-to-background ratio as a function of time.



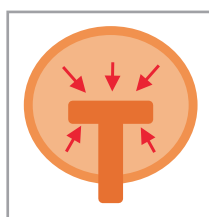
Systematic study of the crystallization process of spray-dried salbutamol sulfate at variable temperature-relative humidity conditions.

Ref.: Application note 'Automatic condensation-free combined temperature-humidity control for XRD studies' available on [www.panalytical.com](http://www.panalytical.com)

# MHC-trans chamber

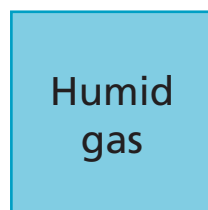
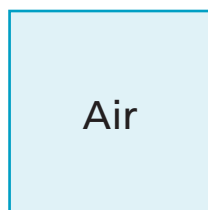


## Features

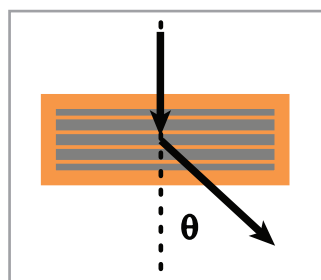


Environmental heater

- 10°C to +150°C (dry nitrogen)
- Heat-up time to 150 °C: 25 min
- Cool-down time to -10 °C: 65 min
- Humid air/nitrogen**
- 5 to 95 % RH (10 - 60°C)
- 5 to 70 % RH (10 - 80°C)

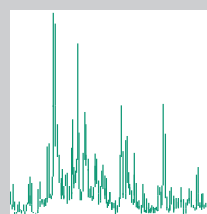


Atmospheres

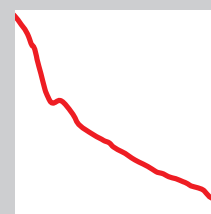


Flat plate transmission geometry.  
Kapton or polysulfone foils.

## Applications



Powder XRD



Small-angle X-ray scattering)\*

\*Application developed by PANalytical

## Conclusion

The MHC-trans chamber is an ideal choice for the *in situ* X-ray diffraction studies of pharmaceuticals and other X-ray-transparent materials at variable temperature and humidity with high sample throughput thanks to the built-in sample changer.