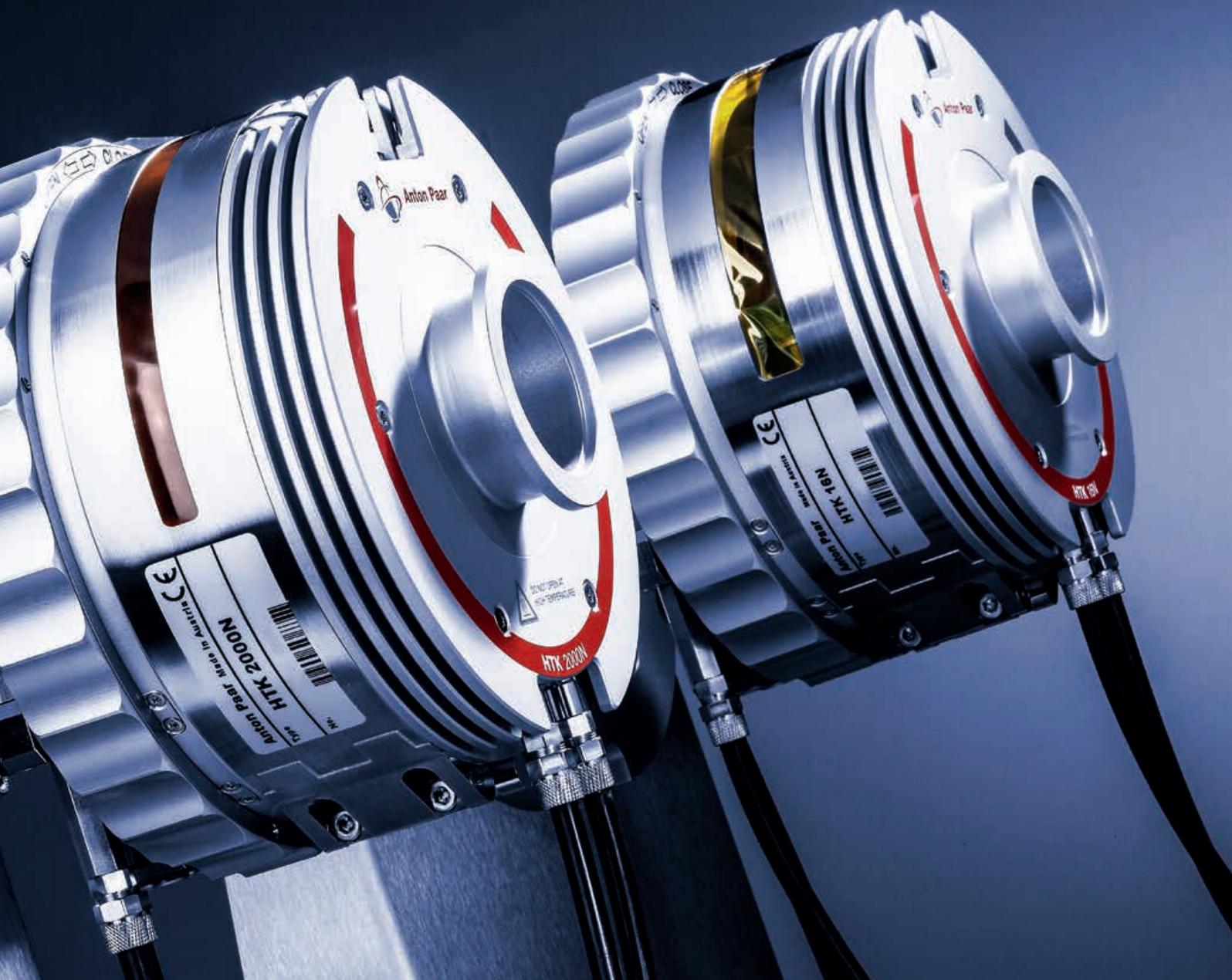




Anton Paar

::: Innovation in Materials Science



HTK 16N/HTK 2000N High-Temperature Chambers

Anton Paar HTK 16N and HTK 2000N are strip-heater chambers for powder XRD at very high temperatures. Depending on the choice of heating strip, samples can be heated up to 1600 °C in air or up to 2300 °C in a vacuum. The unique design of both instruments provides easy sample preparation, excellent temperature control and high position stability of the sample.

Materials research beyond 1500 °C - the hottest chambers on the market

Highest sample temperatures

HTK 16N/HTK 2000N High-Temperature Chambers heat your samples to extremely high temperatures. HTK 16N is designed for operation with a platinum heating strip in oxidizing atmosphere or inert gas up to 1600 °C. HTK 2000N has been optimized for operation with a tungsten strip in a vacuum up to 2300 °C.

Alternative heating strip materials and the choice of different atmospheres allow in-situ investigations of a wide range of materials, from ceramics to metal powders, from refractory materials to cements.

Accurate temperature and stable position

The design of the chambers is optimized for minimum temperature gradients in the sample and for maximum sample position stability.

A thermocouple, spot-welded onto the heating strip, provides reliable and accurate temperature measurement and control under all operating conditions.

The heating strip is pre-stressed to compensate its thermal elongation upon heating, which ensures a very stable sample position over the complete temperature range. Integrated alignment slits allow exact initial positioning of the sample surface and, if necessary, realignment at high temperature.

Easy operation

The sample is applied directly to the heating strip. For easy access to the strip, the front cover of the chamber has a bayonet catch.

Precise height alignment of the sample in the X-ray beam is possible with a PC-controlled alignment stage. A quartz glass window on top of the lid makes it possible to look at the sample during the experiment.

Features and Benefits

- ▶ Direct sample heating up to 1600 °C / 2300 °C
- ▶ Stable sample position due to stable heating strip and compensation of strip expansion
- ▶ Minimized temperature gradients across the sample
- ▶ Heating in vacuum, air or inert gas possible
- ▶ Variable heating strip materials to match the chemistry of the sample
- ▶ Integrated alignment slits for precise sample alignment
- ▶ Suitable for all standard laboratory 2-circle diffractometers



Typical applications

- ▶ Recrystallization and crystallite growth
- ▶ In-situ crystallographic characterization of high-temperature materials
- ▶ Phase transformation studies
- ▶ Structure determination of high-temperature phases
- ▶ Determination of thermal expansion coefficients
- ▶ Investigation of chemical reactions

	HTK 16N	HTK 2000N
Temperature range	25 °C to 1600 °C Pt strip; air, vacuum	25 °C to 2300 °C W strip; vacuum
	25 °C to 1500 °C Ta strip; vacuum	25 °C to 1600 °C Pt strip; air, vacuum
	25 °C to 1500 °C/1300 °C Graphite strip; vacuum/ helium	25 °C to 1500 °C Ta strip; vacuum
Heating strips	Platinum, tantalum, tungsten (HTK 2000N), graphite (HTK 16N) Special materials available on request	
Pressure	≤ 2x10 ⁻⁴ mbar to 0.5 bar rel.	
Gases	Air, He, N ₂	
Scan range	4° to 164° 2Theta	

Your distributor: