Anton Paar

HTK 1200N

PDF Parts for HTK 1200N

The PDF parts for HTK 1200N allow you to set up the HTK 1200N chamber for Pair Distribution Function (PDF) measurements. The total X-ray scattering technique and PDF analysis can be used at high temperatures without compromising data quality.

The intelligent solution for in-situ PDF analysis!

Non-ambient PDF measurements

Total X-ray scattering and PDF analysis are a powerful combination to study both crystalline and non-crystalline materials. The technique is of growing interest as it can be used to probe the local atomic structure in amorphous or nanocrystalline materials and even liquids. This can be useful either as a complementary method to standard XRD analysis or also as a technique to investigate samples where XRD would give little or no information.

Recent developments have led to an increase in the use of standard laboratory diffractometers for PDF analyses, reducing the reliance on visits to large-scale research facilities (e.g. synchrotrons) and opening up the technology for new user groups. The PDF parts for HTK 1200N now allow you to include temperature as a variable, further extending the capabilities of those in-house PDF measurements.

Fast and easy modification of HTK 1200N

The PDF parts are added to the X-ray window cavities of HTK 1200N, replacing the standard window foils. An anti-scatter slit is included on the incident side and a beamstop is added on the diffracted side.

In addition, the lower part of the incident X-ray window is replaced by a nickel foil so that the anti-scatter slit blocks scattering from the incident window foil. The PDF parts are intended to be used with the capillary extension for HTK 1200N. Converting the standard in-situ XRD setup to an in-situ PDF setup is easy to do and takes only a few minutes.

Optimal data quality

The combination of the anti-scatter slit and beamstop ensures that no signal from the direct beam or window foils is observed in the measured data. This guarantees that the data obtained is of sufficient quality to perform PDF analyses at temperatures of up to 1000 °C. It is therefore possible to collect high-quality PDF data in the comfort of your own lab.

Applications

In-situ investigation of the local structural order in samples which are:

- Crystalline
- Amorphous
- Nanocrystalline or nanostructured
- Liquid

Features and benefits

- Brings non-ambient PDF measurements to your home laboratory
- Temperature range from room temperature to 1000 °C
- Highest data quality: no signal from HTK 1200N chamber parts observed in the measured data
- Quick and straightforward modification of the HTK 1200N for PDF measurements

Technical specifications	
Temperature range	RT to 1000 °C
Inaccessible region	0 to 2° 2theta
Anti-scatter slit material	Nickel
Beamstop material	Nickel alloy

Collaboration: Developed in collaboration with Malvern Panalytical.

Your distributor:

www.anton-paar.com

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