

Пробирки XRD

Описание

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XRD tubes | Mark tubes

Mark tubes and accessories

Mark tubes are used for the X-ray fine structure analysis of monocrystals, powder compounds and liquid crystals. Thanks to minimal absorption through the glass, the extremely thin-walled capillaries make it possible to analyze the smallest of samples sealed in a gas- and moisture-proof environment. Measurements according to the Debye-Scherrer method or general SAXS (small angle x-ray scattering) and WAXS (wide angle x-ray scattering) measurements can be carried out using our Mark tubes. Due to the extremely low wall thickness of only approx. 10 μm , Mark tubes are particularly suited to high-precision measurements. The wide funnel at the upper end means samples are also easily filled into tubes with the smallest diameters.

Here you will find the designs we offer as standard [➔](#)



Double funnel Mark tubes

These special Mark tubes, made from borosilicate glass 3.3, are particularly suited to flow measurements. The measuring range in the center of the capillaries has a wall thickness of only approx. 20 μm . The sides, however, are made from a thicker material, making it easier to assemble in a liquid circulation system. Thin tubes have proven to be effective for adapting these capillaries. The tubes are secured in the funnels on both sides using a liquid Teflon (PTFE).

Absorption coefficients

We produce Mark tubes in various types of glass with different linear absorption coefficients to ensure there is a suitable sample tube for almost any application. Production processes meet the highest of quality standards and can be adapted to the special requirements of users.



Material	Linear absorption coefficient (cm ⁻¹)
Pyrex	0.0001
Quartz	0.0002
Silica	0.0003
Alumina	0.0004
Flint	0.0005

Accessories for Mark tubes

Our product range also includes a micro hand torch, along with zirconium blades and holder, for the melting and cutting of the Mark tube tips. Both products can be found under Accessories & Tools.

SPECIAL

We have already manufactured special customer-specific solutions for this product group. Further examples of special products can be found under the respective product category or under Special Solutions.

Mark tubes with perforated bottom

Laser-perforated Mark tubes allow the sedimentation of a sample within the tube. This is achieved by filling glass wool into the perforated section. A flow can be generated inside the Mark tube which creates a concentration of particles in the measuring range. This highly simplifies the examination of the sample.



Capillaries with Luer connector for inline measurement

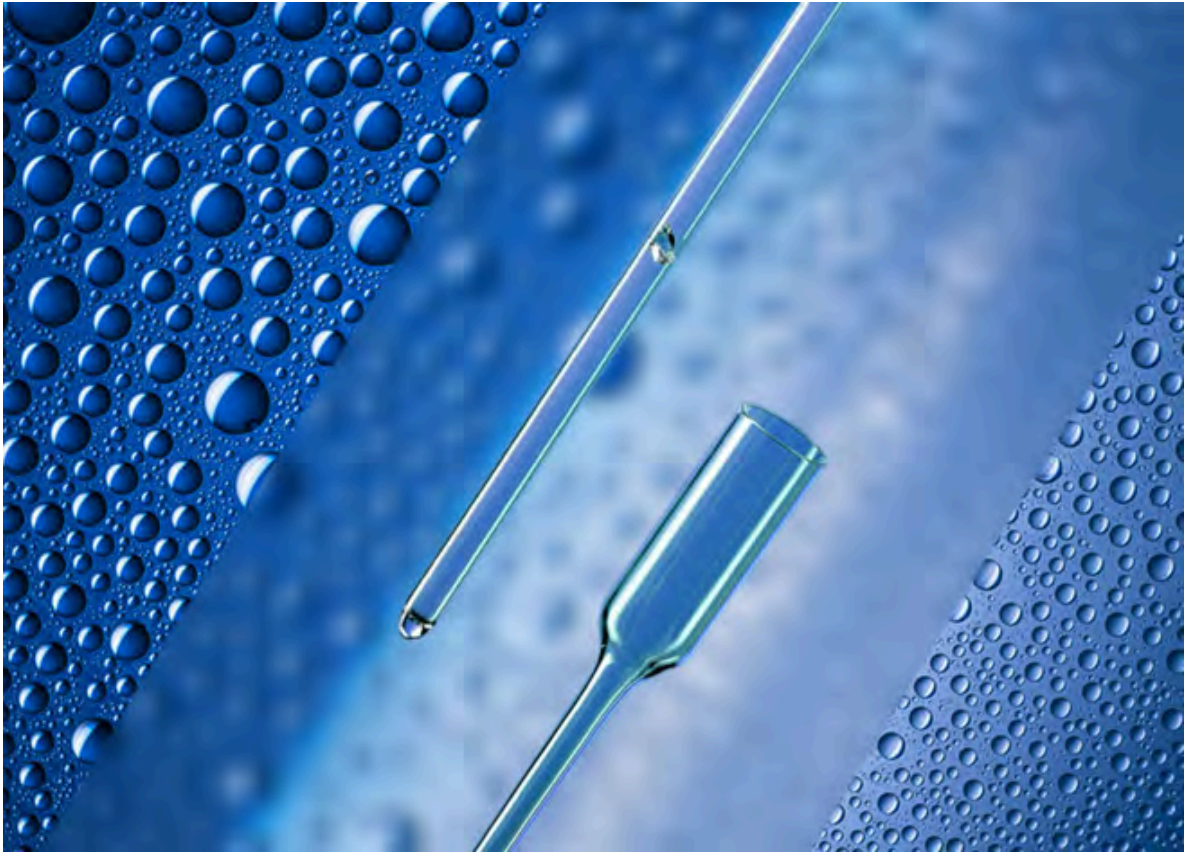
This glass capillary was developed with a Luer connector for quick and simple connection to a pumping system. The capillary is flushed with the sample to be analyzed, which is collected again afterwards. The thin-walled part of the capillary has a wall-thickness of just a few micrometers for a

minimal impact on the measurements. Different diameters are possible. The Luer-lock connector consists of inert PP (polypropylene).



XRD capillaries/Mark tubes with hydrophobic inner surface

The inner surface of these Mark tubes has been coated with siloxane, completely covering the surface and thus considerably increasing the contact angle for samples dissolved in water. This can help to fill and remove critical or costly samples from the tubes for further use.



Special capillaries for X-ray testing

As an alternative to Mark tubes, we also offer very thin-walled capillaries in borosilicate glass 3.3 which have been developed in collaboration with the University of Paderborn. These capillaries with a wall thickness of only 50 μm are available as Mark tubes with larger diameters (outer diameter between 2.1 and 5.2 mm) and in any length of your choice. The thin-walled capillaries boast an evenly distributed wall thickness and low weight.

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