

# CRM BAM - PM - 121

Certified Reference Material (Porous Glass Beads I)

Method: Mercury Intrusion

High pressure range

**CRM BAM-PM-121**  
**Material: Porous glass beads I**

Certified properties:

- A) Pressure-volume curve between 0.1 MPa and 400 MPa
- B) Diameter-volume curve between 3.7 nm and 14708 nm
- C) Pore volume at selected intrusion pressure points as well as values for the pore diameter (see Table 1)

Table 1 Single values of certified properties

Property	Unit	$\bar{\bar{X}}$	s
Pore volume at 100 MPa	mm <sup>3</sup> ·g <sup>-1</sup>	621,8	12,9
Pore volume at 195 MPa	mm <sup>3</sup> ·g <sup>-1</sup>	621,9	12,9
Pore volume at 200 MPa	mm <sup>3</sup> ·g <sup>-1</sup>	621,9	12,9
Pore volume at 395 MPa	mm <sup>3</sup> ·g <sup>-1</sup>	624,6	13,4
Mean pore width d <sub>50</sub>	nm	15,1	0,2
Most frequent pore width d <sub>p,m</sub>	nm	15,3	0,2

$\bar{\bar{X}}$  average of laboratory averages (certified value)

s standard deviation of laboratory averages

The number of laboratories (outlier free) participating in the interlaboratory tests was 24.

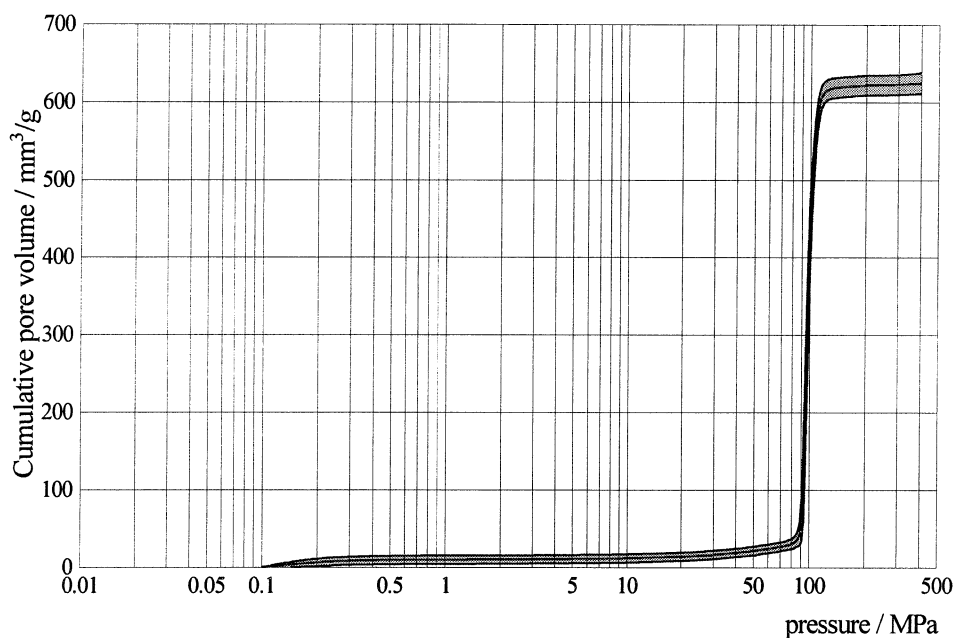
Table 2 Non-certified property

	Unit	Value
Specific surface area*	m <sup>2</sup> ·g <sup>-1</sup>	164,8

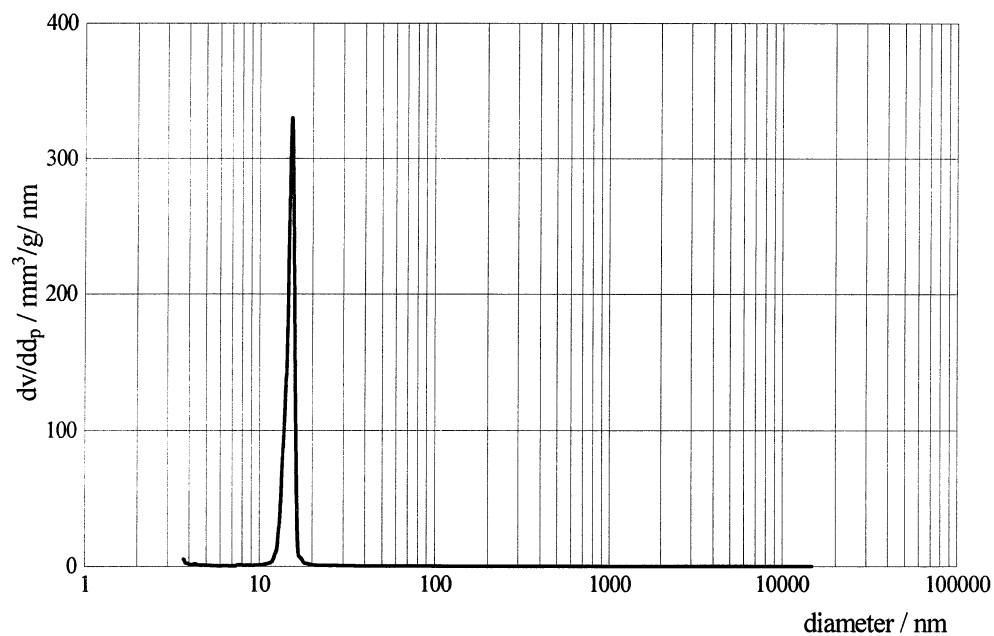
\* only as additional information, given without uncertainty, calculated according to  $A_{sp} = 4 \cdot v / d$  using the certified properties  $V_{200MPa}$  and  $d_{50}$

## Application

The reference material is intended for the calibration and checking of instruments for measurement of pressure / volume curve of solids.



*Certified pressure/volume curve of CRM BAM-PM-121*



*Pore size distribution of CRM BAM-PM-121*

## Data evaluation

The pressure / volume curve must be extracted between 0.1 .... 400 MPa.  
The complete pressure / volume curve had been certified. The certificate contains these data.

## Method

DIN 66 133

Evaluation of interlaboratory test according to BAM / BCR Guidelines including 23 laboratories.

**Information regarding the sample**

Density

Thermal and phase analysis

Particle size distribution

Morphology

**Available unit size**

12 g

**Price**

see price list

**May be obtained from:**

Bundesanstalt für Materialforschung und -prüfung

Division I.1 Inorganic Chemical Analysis; Reference Materials

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