

Reference Material

BAM-P202

Polystyrene (PS)

Data sheet

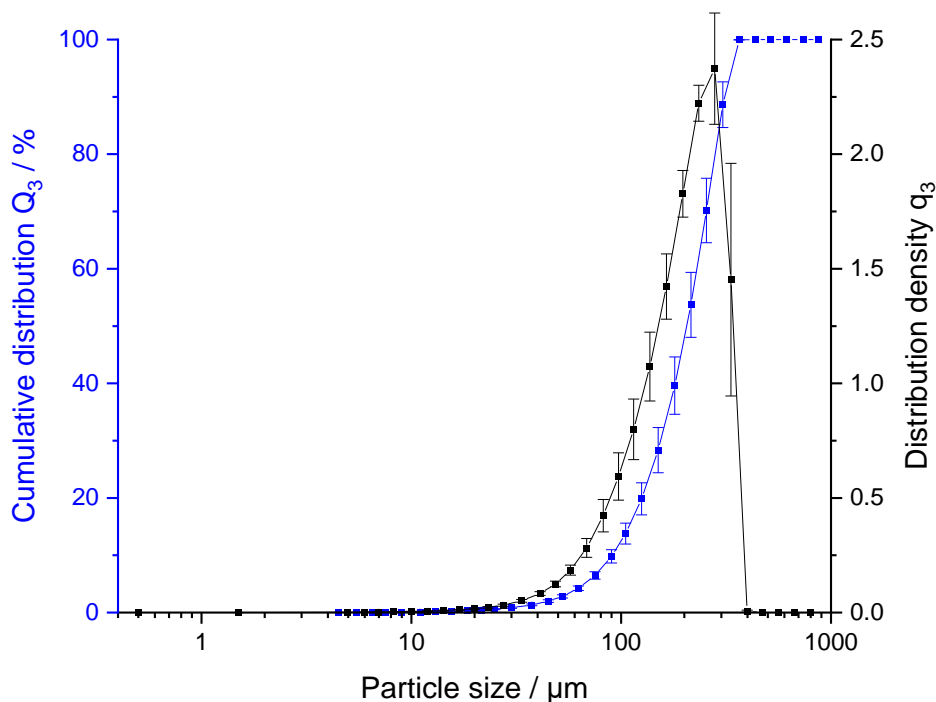
Particle size distribution

Particle size distribution	Particle size ¹ D in μm	Twofold standard deviation ² $2 \cdot s$ in μm	Expanded uncertainty ³ U in μm
D10	91	9	13
D50	206	27	29
D90	311	28	28

¹ Mean value of 10 measurements with 1 g BAM-P202 by laser diffraction under dry dispersion (HELOS/BR + RODOS/L + ASPIROS, Sympatec, Germany, ISO 13320:2009 certified).

² Twofold value of standard deviation of the accepted data set mean.

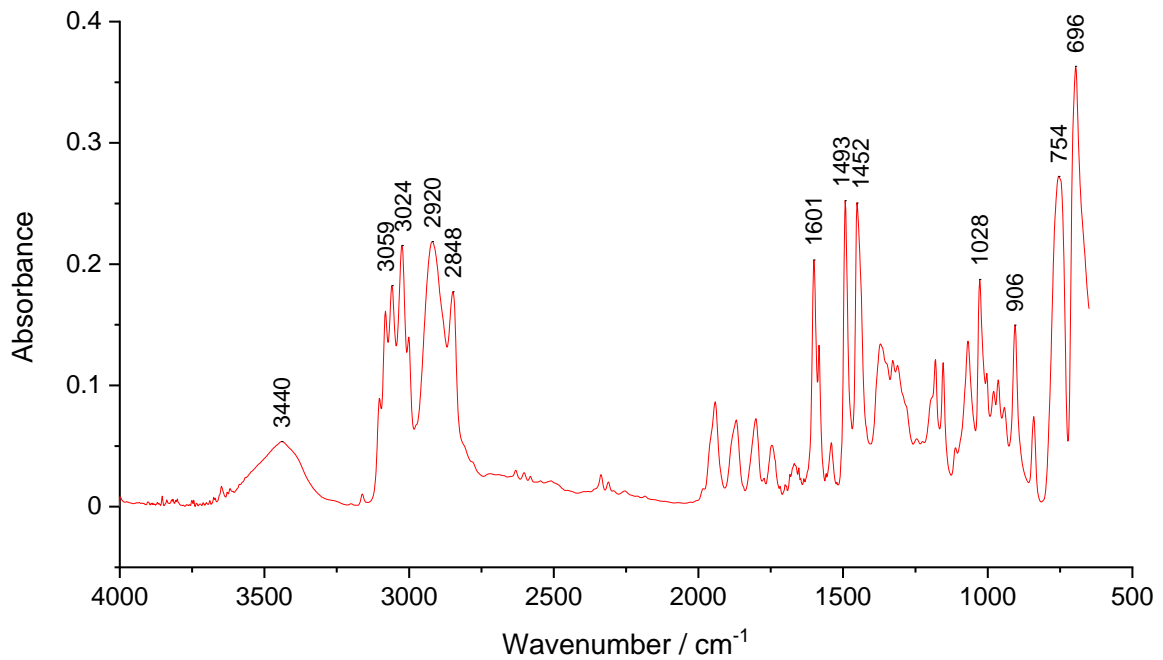
³ Estimated expanded uncertainty $U = k \cdot u_c$ with a coverage factor $k = 2$, corresponding to a level of confidence of approximately 95%, calculated according to ISO Guide 35. The combined uncertainty u_c includes the standard uncertainty due to characterization, the contribution of variation between bottles and the long-term stability contribution.



Average value distribution of 10 measurements by laser diffraction under dry dispersion (HELOS/BR + RODOS/L + ASPIROS, Sympatec, Germany, ISO 13320:2009 certified).

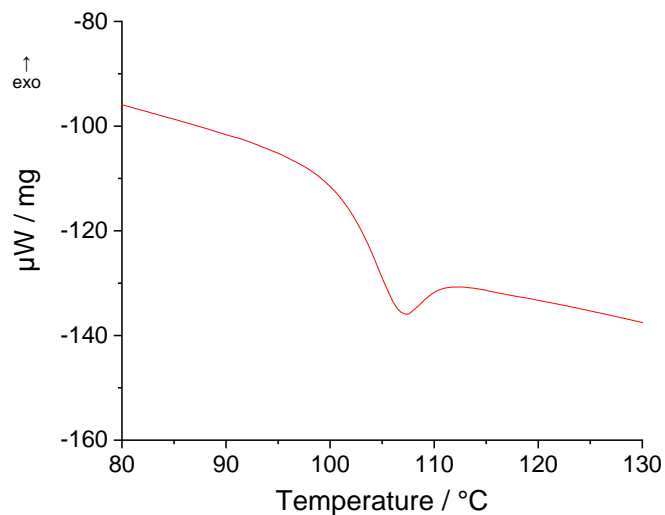
Following additional values and information are provided.

Transmission – Fourier-transform infrared spectroscopy



Average value spectrum of 6 measurements of BAM-P202 embedded in KBr pill by Transmission – Fourier transform infrared spectroscopy (Nicolet Nexus 6700 FTIR spectrometer, Thermo Scientific, USA).

Differential scanning calorimetry (DSC)



T_g* in °C	Standard deviation s in °C	Rel. standard deviation s in %
104.68	0.14	0.14

Average value spectrum of 3 measurements of BAM-P202 by Differential scanning calorimetry (DSC 7020, Seiko, THASS, Germany, last calibration date: 26th of March 2019) with a constant heating rate of 10 °C/minute and estimated glass transition temperature T_g.

End of Validity

This certificate is valid for two years after dispatch, provided the reference material is stored under the recommended conditions.

Date of dispatch:

Material Description

The reference material BAM-P202 consists of PS powder and is delivered in an amber glass bottle with metal lid. The seal in the metal lid is made of silicone and polytetrafluorethylene. The bottled mass is 1000 ± 40 mg.

Recommended Use

BAM-P202 is developed as a reference material close to reality for the validation of sampling, sample preparation and detection of microplastics. It can be used either for the evaluation of effects in the field of ecotoxicology or human toxicology, pollutant transport and agglomeration behaviour related to microplastics.

Transport, Storage and Handling

BAM-P202 can be transported at ambient temperature. The material should be stored in a dark, dry and cool (5 ± 3 °C) environment in its original tightly closed bottle. BAM cannot be held responsible for changes that happen during storage of the material at the customer's premises, especially of opened bottles. There are no special safety regulations to be followed.

Accepted as a BAM-RM on August, 2021

Bundesanstalt für Materialforschung und -prüfung (BAM)

(Dienstsiegel/
Dienststempel)

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6.6 Physical and chemical analysis of polymers

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