

Bundesanstalt für Materialforschung und -prüfung (BAM)

Certified Reference Material

BAM-U030
Pentachlorophenol in wood

Certified Values

| Measurand | Mass fraction ¹⁾ in mg/kg | Uncertainty ²⁾ in mg/kg |
|-------------------|---|---------------------------------------|
| Pentachlorophenol | 7.17 | 0.80 |

¹⁾ Unweighted mean value of 7 laboratory means.
²⁾ Estimated expanded uncertainty U with a coverage factor of $k = 2$, corresponding to a level of confidence of approx. 95 %, as defined in the Guide to the expression of uncertainty in measurement, (GUM, ISO/IEC Guide 98-3:2008) [1].

This certificate is valid for a period of 24 months starting with the dispatch of the reference material from BAM.

Date of dispatch:

Sample No.:

The minimum sample size for one determination is 5 g. The pentachlorophenol (PCP) mass fraction is related to sample intake (not to dry mass). The water content is (6.95 ± 0.05) % and remains stable if the material is handled as indicated below.

Instructions for use

BAM-U030 is explicitly meant only to be used in analytical laboratories. The intended purpose of reference material BAM-U030 is the verification of analytical procedures equivalent to CEN/TR 14823 [2] for the determination of the PCP content in wood by gas chromatography with mass selective or electron capture detection.

It is strongly recommended to handle and dispose of the reference material in accordance with the guidelines for analytical wood samples legally in force at the site of end use and disposal.

Material description

Reference material BAM-U030 was obtained using North American pine wood industrially treated with PCP and untreated European Beech wood. Both woods were separately milled and sieved. The fractions from 0.25 - 1 mm were blended, homogenised and subdivided. Units of 40 g were filled in amber glass bottles with screw caps equipped with PTFE-inserts and sealed with shrinking foil. The material is stored at BAM at -20 °C until dispatch. Details on the preparation and characterisation procedures are specified in the certification report.

Transport and Storage

BAM-U030 can be shipped at ambient temperature. Upon receipt the material must be stored at -20 °C in its original bottle. Before taking a subsample the bottle must have reached ambient temperature. Thereafter, the bottle must be closed tightly and stored at -20 °C. The stability of the reference material is not affected by short periods of handling at ambient temperature during transport and use.

Metrological Traceability

The certified PCP content refers to the extractable amount according to [2] and is conventional to this extent. In order to ensure traceability of the extractable content as defined above, certified PCP calibration standards were employed as well as C-13-labelled PCP as internal standard.

Participating Laboratories

| | |
|--|-----------------------------|
| Pfleiderer Deutschland GmbH | Arnsberg, Germany |
| M&S Umweltprojekt GmbH | Bad Muskau, Germany |
| Bundesanstalt für Materialforschung und -prüfung (BAM) | Berlin, Germany |
| Lobbe Entsorgung West GmbH | Iserlohn, Germany |
| Wood Technology Institute | Poznan, Poland |
| Dr. Marx GmbH | Spiesen-Elversberg, Germany |
| SGS-Analytik GmbH | Spremberg, Germany |
| Wessling GmbH | Weiterstadt, Germany |
| Nano GmbH | Weitnau, Germany |

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Certification Report

A detailed technical report describing the analytical procedures and the treatment of the analytical data used to certify BAM-U030 is available on request or can be downloaded from the BAM website (www.bam.de).

Literature

- [1] ISO/IEC Guide 98-3:2008. Uncertainty of measurement - Part 3: Guide to the expression of uncertainty in measurement (GUM:1995) ISO, Geneva, Switzerland.
- [2] CEN/TR 14823 (2003): Durability of wood and wood-based products – Quantitative determination of pentachlorophenol in wood – Gas chromatographic method.

Accepted as BAM-CRM on 08.12.2021

Bundesanstalt für Materialforschung und -prüfung (BAM)

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BAM holds an accreditation as a reference material producer according to ISO 17034. This accreditation is valid only for the scope as specified in the certificate D-RM-11075-01-00.

DAkkS is a signatory of the multilateral agreement (MLA) between EA, ILAC and IAF for mutual acceptance.

