

English Version

Pulp, paper and paperboard - Determination of anthraquinone in extracts from pulp, paper and paperboard

Pâte, papier et carton - Détermination d'anthraquinone dans des extraits de pâte, papier et carton

Faserstoff, Papier und Karton - Bestimmung von Anthrachinon in Faserstoff-, Papier- und Kartonextraten

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European foreword

This document (CEN/TS 17630:2021) has been prepared by Technical Committee CEN/TC 172 “Pulp, paper and board”, the secretariat of which is held by DIN.

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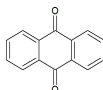
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1 Scope

This document specifies an analytical test method for the determination of anthraquinone (see Table 1) in water and 95 % ethanol extracts of pulp, paper and board materials and articles intended to come into contact with foodstuffs using a gas chromatograph coupled to a mass spectrometer (GC-MS). Moreover, acetone extracts of modified polyphenylene oxide (MPPO) that, according to EN 14338, can be used as a simulant to assess the possible transfer/migration of substances from paper and board into dry, non-fatty foodstuffs can be analysed with the method presented here.

This method can be applied to determine anthraquinone in concentrations ranging from 2 µg/l to 40 µg/l in the water and solvent extracts, corresponding to 0,05 mg/kg to 1 mg/kg pulp, paper and board or, respectively, 0,1 µg/dm² to 2 µg/dm² in the case of migration tests with MPPO. The measurement range can be lowered by enriching anthraquinone from the water and solvent extracts.

Table 1 — Anthraquinone

Name	Abbreviation	Formula	CAS N°	Structure
Anthraquinone	AQ	C ₁₄ H ₈ O ₂	84-65-1	

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 645, *Paper and board intended to come into contact with foodstuffs — Preparation of a cold water extract*

EN 647, *Paper and board intended to come into contact with foodstuffs — Preparation of a hot water extract*

EN 14338, *Paper and board intended to come into contact with foodstuffs — Conditions for determination of migration from paper and board using modified polyphenylene oxide (MPPO) as a simulant*

EN 15519, *Paper and board intended to come into contact with foodstuffs — Preparation of an organic solvent extract*

EN 27213, *Pulps — Sampling for testing (ISO 7213)*

EN ISO 186, *Paper and board — Sampling to determine average quality (ISO 186)*

EN ISO 536, *Paper and board — Determination of grammage (ISO 536)*

EN ISO 638, *Paper, board and pulps — Determination of dry matter content — Oven-drying method (ISO 638)*

ISO 3696, *Water for analytical laboratory use — Specification and test methods*