
**Pulp, paper and board — Determination of
7 specified polychlorinated biphenyls (PCB)**

*Pâtes, papiers et cartons — Détermination de 7 polychlorobiphényles
(PCB) spécifiés*



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Foreword

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International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 15318 was prepared by the European Committee for Standardization (CEN) in collaboration with ISO Technical Committee TC 6, *Paper, board for pulp*, Subcommittee SC 5, *Test methods and quality specifications for pulp*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

Throughout the text of this standard, read "...this European Standard..." to mean "...this International Standard...".

Annexes A, B and C form a normative part of this International Standard.

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Foreword

The text of EN ISO 15318:1999 has been prepared by Technical Committee CEN/TC 172 "Pulp, paper and board", the secretariat of which is held by DIN, in collaboration with Technical Committee ISO/TC 6 "Paper, board and pulps".

This European Standard supersedes ENV 1798:1995.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by March 2000, and conflicting national standards shall be withdrawn at the latest by March 2000.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

With regard to ENV 1798:1995-07 the following changes have been made:

- a) extension of the scope to "pulp";
- b) addition of detailed information on "precision";
- c) transformation from a European Prestandard (ENV) to a European Standard (EN);
- d) editorial updating.

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Introduction

CEN/TC 172 has decided to publish this test method as a European Standard (EN) because the validation of the test method on the level of the existing limit for PCB (2 ppm) was until now impossible due to the fact that there was no reference material with this level of PCB and all samples tested have a PCB content on the level of the detection limit (about 5 µg/kg of the congeners).

Prior to discontinuance of its use in 1971 a commercial PCB had been an ingredient in carbonless copy paper. The presence of these copy papers in waste paper can lead to contamination of recycled pulp, paper and board products with PCB.

The PCB contaminant has the same congener pattern as the PCB used earlier in carbonless copy papers and this identifies the source of PCB contamination.

In this method, seven specified PCB congeners (numbers 18, 28, 52, 101, 138, 153 and 180) are determined individually. Because the source of the PCB contamination can be identified from the congener pattern, the total PCB content of the paper may be estimated from these seven congeners.

For routine analyses, the spiking procedure of 5.10.5 and 7.4.4 may be omitted, provided that the result obtained from the analysis is less than 50 % of any present limit. This will require modification of clause 8 to take account of these changes. The use of this modification shall be stated in the test report. In the event of any dispute the full method shall be used.

Warning:

The use of this European Standard may involve hazardous materials, operations and equipment. It does not address all the safety problems associated with its use. It is the responsibility of the user of this European Standard to establish appropriate safety and health practices and determine the applicability of safety regulations prior to use.

1 Scope

This European Standard gives guidance on a test method which permits the determination of seven specified PCBs in pulp, paper and board. Annex A gives a procedure for estimating the total content of PCB from the congener content.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN ISO 186

Paper and board - Sampling to determine average quality (ISO 186 : 1994)

EN 27213

Pulps – Sampling for testing (ISO 7213 : 1981)

3 Principle

The test material is extracted with boiling ethanolic or methanolic potassium hydroxide solution. An aliquot of the extract is mixed with water and subjected to liquid-solid partitioning on a disposable C₁₈ solid phase extraction cartridge followed by elution with hexane or ISO-octane.