

ICS

English version

**Packaging - Requirements for measuring and verifying the four heavy metals and other dangerous substances present in packaging and their release into the environment - Part 1:
Requirements for measuring and verifying the four heavy metals present in packaging**

Emballage - Exigences pour la mesure et la vérification des quatre métaux lourds et autres substances dangereuses présents dans l'emballage et leur cession dans l'environnement - Partie 1: Exigences pour la mesure et la vérification des quatre métaux lourds présents dans l'emballage

Verpackung - Anforderungen zur Messung und Feststellung der vier Schwermetalle und andere gefährlichen Substanzen in Verpackungen und deren Freisetzung in die Umwelt - Teil 1: Anforderungen zur Messung und Feststellung der vier Schwermetalle in Verpackungen

This CEN Report was approved by CEN on 16 June 1999. It has been drawn up by the Technical Committee CEN/TC 261.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Foreword

This document has been prepared by CEN /TC 261, "Packaging".

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

This document has to be implemented at national level, either by publication of an identical text or by endorsement, by **month year**, and conflicting national standards have to be withdrawn by **month year**.

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

Introduction

This document is a CEN Report for "the measurement and verifying of heavy metals present in packaging and their release to the environment".

The European Commission gave a mandate to CEN for promoting the preparation of European Standards and CEN reports in order to support the application of the Directive 94/62/EC of 20 December 1994, in particular "the requirements for measuring and verifying heavy metals and other dangerous substances, present in packaging, and their release into the environment".

The Ad-Hoc Group, in charge of the task by a resolution of CEN TC 261 SC4, has set as a priority in the first part of the report the four heavy metals mentioned in Article 11 of the Directive : Lead, Cadmium, Chromium (VI), Mercury, for two reasons :

- To release as early as possible, guidelines for assessing compliance with the Directive for these four metals (cf. Chapter 8).
- Other dangerous substances as mentioned in the mandate are the subject of the part two of the CEN Report.

Have been considered for the development of this work :

- the existing European or national legislation (Directives)
- the CONEG legislation as a source of information
- the CEN standardisation on waste CEN/TC 292.
- the OECD environment monograph series.

To better identify and control the main sources of contamination by heavy metals, an extensive enquiry involved the European industry operating on this market and their associations, from raw materials and constituents to finished products (chapter 7). It results in the proposal of an efficient tool for the industry to assume compliance, i.e. a procedure limiting the need for individual packaging testing in favour of an "up-stream" assessment more in line with the quality assurance system. It is developed in chapter 8 and covers both packaging and its components; the provided guideline includes minimisation according to art. 9 and annex II, the relevant test methods for measuring being expressed in chapters 9 and 10.

The main conclusions of the report (chapter 11), are the identification of only a few needs for intentional use of heavy metal's compounds in packaging, a preferable "up-stream" approach for assuming compliance, including minimisation, and a need for developing standardised methods.

1 Scope

This part 1 of the report is related to the four heavy metals specified in Art. 11 of the Directive : lead, cadmium, chromium (VI) and mercury. A second part of this CEN-report is related to the need to assess other dangerous substances present in packaging.

2 Normative references

This CEN Report 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 CEN Report only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 45001 : (1989), *General criteria for the operation of testing laboratories*.

EN ISO 8402 : (1995), *Quality management and quality assurance – Vocabulary*.

ISO 3534.1 : (1993), *Statistics - vocabulary and symbols part 1 : probability and general statistical terms*.

ISO Guide 30 : (1992) *Terms and definitions used in connection with reference materials*.

ISO 10012-1 : (1992), *Quality assurance requirements for measuring equipment - Part 1 : metrological confirmation system for measuring equipment*.

ASTM D 4057 : (1995), *Standard practice for manual sampling of petroleum and petroleum products*.

3 Terms and definitions

For the purposes of this CEN Report, the following definitions apply:

3.1

packaging component

any part of packaging that can be separated by hand or by using simple physical means

3.2

packaging constituent

the smallest part from which packaging or its components are made and which cannot be separated by hand or by using simple physical means

NOTE The comprehensive application of the definitions with examples is given in 8.1.2.

4 The European packaging market at present

According to statistics, recently published by PIRA, the value of packaging materials used in Western Europe is estimated at USD 95.8 billion (1994). The estimated amount by weight is 64.8 million tonnes (Annex B, Tables 2.4 and 2.5).

The proportion, by value, of consumer packaging (and probably of the whole market) that goes to the food and beverage market is about 70 %. The quality requirements for the majority of materials used in this part of the market has for many years been in accordance with the Food Contact legislation. This legislation specifies limits for the migration of constituents in packaging materials into packaged food products and a large number of standardised test methods are developed in support of this legislation.