

Safety of toys —

Part 3: Migration of certain elements

The European Standard EN 71-3:1994, with the incorporation of amendment A1:2000, has the status of a British Standard

Committees responsible for this British Standard

The preparation of this British Standard was entrusted to Technical Committee SW/15, Safety of toys, upon which the following bodies were represented:

Association of Consulting Scientists
Association of Public Analysts
British Apparel and Textile Confederation
British Association of Toy Retailers
British Coatings Federation Ltd.
British Colour Makers' Association
British Importers' Confederation
British Paediatric Association
British Plastics Federation
British Retail Consortium
British Toy and Hobby Association
British Toy Importers' and Distributors' Association
British Toymakers' Guild
Child Accident Prevention Trust
Consumer Policy Committee of BSI
Consumers' Association
Department of Health
Department of Trade and Industry (Consumer Safety Unit, CA Division)
Department of Trade and Industry (Laboratory of the Government Chemist)
Institute of Trading Standards Administration
Mail Order Traders' Association
Paper Federation of Great Britain
Royal Society for the Prevention of Accidents

This British Standard, having been prepared under the direction of the Consumer Products and Services Sector Board, was published under the authority of the Standards Board and comes into effect on 15 June 1995

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National foreword

This British Standard has been prepared by Technical Committee SW/15 and is the English language version of EN 71-3:1994 *Safety of toys — Part 3: Migration of certain elements*, including amendment A1:2000 and Corrigendum July 2002, published by the European Committee for Standardization (CEN). This part of BS EN 71 supersedes BS 5665-3:1989, which is withdrawn.

Cross-references

The British Standards which implement international or European publications referred to in this document may be found in the BSI Standards Catalogue under the section entitled “International Standards Correspondence Index”, or by using the “Find” facility of the BSI Standards Electronic Catalogue.

Additional information. When marking or specifying a product the manufacturer may mark or specify by reference to either the European Standard or the British Standard¹⁾.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations. In particular the attention of users is drawn to the Toys (Safety) Regulations 1989 (SI 1275).

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, the EN title page, pages 2 to 19 and a back cover.

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English version

Safety of toys — Part 3: Migration of certain elements

(includes amendment A1:2000)

Securite des jouets —
Partie 3: Migration de certains elements
(inclut l'amendement A1:2000)

Sicherheit von Spielzeug —
Teil 3: Migration bestimmter Elemente
(enthält Änderung A1:2000)

This European Standard was approved by CEN on 1994-12-13. Amendment A1 was approved by CEN on 2000-03-11. CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart 36, B-1050 Brussels

Foreword

This European Standard was prepared by CEN/TC 52, Safety of toys, of which the Secretariat is held by DS.

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

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 June 1995, and conflicting national standards shall be withdrawn at the latest by June 1995.

This standard constitutes the third part of the European Standard on *Safety of toys*.

This part should be read in conjunction with part 1.

This standard specifies requirements and test methods for the migration of the elements antimony, arsenic, barium, cadmium, chromium, lead, mercury and selenium from toy material.

This standard contains 4 annexes.

- Annex A (normative) *deleted*.
- Annex B (normative) Sieve requirements.
- Annex C (informative) Preparation and analysis of test portions.
- Annex D (informative) Background and rationale for the requirements and test methods.

This standard is the result of the revision of EN 71-3:1988.

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.

Foreword to amendment A1

This amendment EN 71-3:1994/A1:2000 to EN 71-3:1994 has been prepared by Technical Committee CEN/TC 52, Safety of toys, the Secretariat of which is held by DS.

This amendment to the European Standard EN 71-3:1994 shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by October 2000, and conflicting national standards shall be withdrawn at the latest by October 2000.

This amendment to the European Standard EN 71-3:1994 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).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this standard.

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.

Introduction

This European Standard for safety of toys consists of the following parts.

- *Part 1: Mechanical and physical properties;*
- *Part 2: Flammability;*
- *Part 3: Migration of certain elements;*
- *Part 4: Experimental sets for chemistry and related activities;*
- *Part 5: Chemical toys (sets) other than experimental sets;*
- *Part 6: Graphical symbol for age warning labelling.*

This standard is part 3 of the European Standard on safety of toys, EN 71.

The requirements of this standard are based on bioavailability resulting from the use of toys and should not as an objective exceed the below mentioned levels per day:

- 0,2 µg for antimony;
- 0,1 µg for arsenic;
- 25,0 µg for barium;
- 0,6 µg for cadmium;
- 0,3 µg for chromium;
- 0,7 µg for lead;
- 0,5 µg for mercury;
- 5,0 µg for selenium.

For the interpretation of these figures it has been necessary to identify an upper limit for the ingestion of toy material. Very limited data have been available for identifying this upper limit. As a working hypothesis, a summed average daily intake for the various toy materials has been gauged at the currently accepted figure of 8 mg/day, being aware that in certain individual cases this figure might be exceeded.

Combining the daily intake with the bioavailability figures listed above, limits are obtained for various toxic elements in microgram per gram (milligram per kilogram) and are detailed in Table 1. The figures obtained have been adjusted to minimize childrens' exposure to toxic elements and to ensure analytical feasibility taking into account limits achievable under current manufacturing conditions. (See Annex D.)

1 Scope

This part of this European Standard specifies requirements and test methods for the migration of the elements antimony, arsenic, barium, cadmium, chromium, lead, mercury and selenium from toy materials and from parts of toys except materials not accessible (see part 1 of this standard).

Packaging materials are not included unless they are part of the toy or have intended play value. (See Annex D.)

When appropriate, the toy is subjected to relevant tests, specified in part 1 of this standard, before the accessibility is considered.

Requirements are included for the migration from the following toy materials:

- coatings of paints, varnishes, lacquers, printing inks, polymers and similar coatings (see 8.1);
- polymeric and similar materials, including laminates, whether textile reinforced or not, but excluding other textiles (see 8.2);
- paper and paper board (see 8.3);
- textiles, whether natural or synthetic (see 8.4);
- glass/ceramic/metallic materials (see 8.5);
- other materials whether mass coloured or not (e.g. wood, fibre board, hard board, bone and leather) (see 8.6);
- materials intended to leave a trace (e.g. the graphite materials in pencils and liquid ink in pens) (see 8.7);
- pliable modelling materials, including modelling clays, and gels (see 8.8);
- paints, varnishes, lacquers, glazing powders and similar materials in solid or in liquid form appearing | as such in the toy (see 8.9).

Toys and parts of toys which, due to their accessibility, function, mass, size or other characteristics, obviously exclude any hazard due to sucking, licking or swallowing, bearing in mind the normal and foreseeable behaviour of children, are not covered by this part of EN 71.

NOTE For the purposes of this standard, the following criteria are considered appropriate in the categorization of sucking, licking or swallowing:

- all intended food/oral contact toys, cosmetic toys and writing instruments categorized as toys;
- toys intended for children up to 6 years of age, i.e. all accessible parts and components where there is a probability that those parts or components may come into contact with the mouth. (See Annex D.)

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

EN 71-1, *Safety of toys — Part 1: Mechanical and physical properties*.

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

3 Definitions

For the purposes of this standard the following definitions apply.

3.1

base material

material upon which coatings may be formed or deposited

3.2

coating

all layers of material formed or deposited on the base material or toy and includes paints, varnishes, lacquers, inks, polymers or other substances of a similar nature, whether they contain metallic particles or not, of a similar nature no matter how it has been applied to the toy and which can be removed by scraping with a sharp blade

3.3

detection limit of a method

three times the standard deviation of the blank value

3.4

other materials, whether mass coloured or not

materials such as wood, leather and other porous substances which may absorb colouring matter without forming a coating

3.5

paper and paper board

a maximum mass per unit area of 400 g/m² is the limit for treating material under this category

above this mass per unit area the substance is treated as “other material” and may be fibre board or hard board, etc.

3.6

scraping

mechanical removal of coatings down to the base material

3.7

toy material

all the accessible materials present in toys