

STN	Bezpečnosť hračiek Časť 3: Migrácia určitých prvkov	STN EN 71-3+A2
		94 3094

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola označená vo Vestníku ÚNMS SR č. 01/18

Obsahuje: EN 71-3:2013+A2:2017

Oznámením tejto normy sa ruší
STN EN 71-3+A1 (94 3094) z marca 2015

125724

Úrad pre normalizáciu, metrológiu a skúšobníctvo Slovenskej republiky, 2018

Podľa zákona č. 264/1999 Z. z. o technických požiadavkách na výrobky a o posudzovaní zhody a o zmene a doplnení niektorých zákonov v znení neskorších predpisov sa slovenská technická norma a časti slovenskej technickej normy môžu rozmnôžovať alebo rozširovať len so súhlasom slovenského národného normalizačného orgánu.

**EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM**

EN 71-3:2013+A2

August 2017

ICS 97.200.50

English Version

Safety of toys - Part 3: Migration of certain elements

Sécurité des jouets - Partie 3 : Migration de certains éléments

Sicherheit von Spielzeug - Teil 3: Migration bestimmter Elemente

This European Standard was approved by CEN on 18 August 2014 and includes Amendment 2 approved by CEN on 18 April 2017.

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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents	Page
European foreword.....	5
Introduction	7
1 Scope.....	8
2 Normative references.....	8
3 Terms and definitions	8
4 Requirements	10
4.1 Toy material categories (see H.4)	10
4.2 Specific requirements.....	10
5 Principle	11
6 Reagents and apparatus	12
6.1 Reagents	12
6.2 Apparatus.....	12
7 Sampling and sample preparation.....	12
7.1 Selection of test portions.....	12
7.2 Standards preparation	13
7.3 Sample preparation.....	13
7.4 Migration procedure.....	15
8 Methods of analysis	18
9 Calculation of results	18
9.1 General elements	18
9.2 Chromium (III) and Chromium (VI)	19
9.3 Organic tin	19
10 Test report.....	21
Annex A (informative) Significant technical changes between this European Standard and the previous version	22
Annex B (informative) Method performance.....	24
B.1 Method performance	24
B.2 Use of measurement uncertainty in compliance assessment.....	24
B.3 Information on round robin test	24
Annex C (normative) Sieve requirements	26
Annex D (informative) Preparation and analysis of test portion	27
Annex E (informative) Method of analysis for general elements.....	28
E.1 Principle	28
E.2 Working solutions.....	28
E.2.1 Working solutions ICP-MS	28
E.2.2 Working solutions ICP-OES.....	29

E.3	Procedure	31
E.4	Analysis	31
E.4.1	General	31
E.4.2	Limit of detection and quantification	32
Annex F (informative) Methods of analysis for speciation of Chromium (III) and (VI)		34
F.1	Principle.....	34
F.2	Reagents.....	34
F.3	Apparatus.....	35
F.4	Procedure.....	36
F.5	Analysis	36
F.5.1	General	36
F.5.2	LC-ICP-MS conditions	36
F.5.3	Limit of detection and quantification.....	37
Figure F.1 — Example of chromatogram of 0,6 ppb Chromium (III) and (VI)		38
Annex G (informative) Method of analysis for organic tin (see H.10)		39
G.1	Principle.....	39
G.2	Terms and definitions.....	40
G.3	Reagents.....	40
G.4	Apparatus	43
G.5	Procedure	43
G.5.1	Sample derivatisation	43
G.5.2	Calibration standards	43
G.6	Analysis	44
G.6.1	General	44
G.6.2	Example of GC conditions	46
G.6.3	Example of MS conditions	47
G.6.4	Limit of detection and quantification	47
G.6.5	Example of a GC/MS chromatogram	48
Annex H (informative) Rationale		49
H.1	General	49
H.2	Mouthing behaviour of children (Scope)	49
H.3	Skin contact (Scope)	49
H.4	Toy categories (4.1)	50
H.5	Test portions (7.1, 7.3.3.2, 7.3.3.3, 7.3.3.6)	50
H.6	Size of test pieces (7.3.3.2, 7.3.3.3, 7.3.3.4).....	50
H.7	Textile threads.....	50

H.8	Chromium (VI) migration (7.4).....	50
H.9	Filtration of migration solutions (7.4.2.1, 7.4.2.2, 7.4.3.1, 7.4.3.3, 7.4.3.5).....	51
H.10	Organic tin (9.3).....	51
H.11	pH value.....	51
H.12	De-waxing (see 7.3.2)	52
Annex I (informative) Conformity assessment.....		53
I.1	General.....	53
I.2	Chromium VI.....	53
Annex J (informative) List of other organic tin compounds		54
Annex ZA (informative) Relationship between this European Standard and the Essential Requirements of EU Directive 2009/48/EC		55
Bibliography.....		56

European foreword

This document (EN 71-3:2013+A2:2017) has been prepared by Technical Committee CEN/TC 52 "Safety of toys", the secretariat of which is held by DS.

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 February 2018, and conflicting national standards shall be withdrawn at the latest by February 2018.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes [A₁] EN 71-3:2013+A1:2014 [A₁].

This document includes Amendment 1 approved by CEN on 2014-08-18.

The start and finish of text introduced or altered by amendment is indicated in the text by tags [A₁] [A₁].

This document includes Amendment 2 approved by CEN on 2017-05-31.

The start and finish of text introduced or altered by amendment is indicated in the text by tags [A₂] [A₂].

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 2009/48/EC.

For relationship with EU Directive 2009/48/EC, see informative Annex ZA, which is an integral part of this document.

The significant changes from the previous edition of this standard are detailed in Annex A.

EN 71, *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 7: Finger paints — Requirements and test methods;*
- *Part 8: Activity toys for domestic use;*
- *Part 9: Organic chemical compounds — Requirements;*
- *Part 10: Organic chemical compounds — Sample preparation and extraction;*
- *Part 11: Organic chemical compounds — Methods of analysis;*
- *Part 12: N-Nitrosamines and N-nitrosatable substances;*

- Part 13: *Olfactory board games, gustative board games, cosmetic kits and gustative kits;*
- Part 14: *Trampolines for domestic use.*

NOTE 1 In addition to the above parts of EN 71, the following guidance documents have been published: CEN Technical Report CEN/TR 15071, *Safety of toys — National translations of warnings and instructions for use in EN 71*, CEN Technical Report CEN/TR 15371, *Safety of toys — Replies to requests for interpretation of EN 71-1, EN 71-2, and EN 71-8* and CEN/TR 15371-2, *Safety of toys — Replies to requests for interpretation of the chemical standards in the EN 71-series*.

NOTE 2 Words in *italics* are defined in Clause 3 (Terms and definitions).

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

The Toy Safety Directive (2009/48/EC) [1] specifies maximum migration limits for three categories of *toy materials*. The limits for the migration of certain elements are expressed in milligram per kilogram *toy material* and are detailed in Table 2. The purpose of the limits is to minimise children's exposure to certain potentially toxic elements.

1 Scope

This European Standard specifies requirements and test methods for the migration of aluminium, antimony, arsenic, barium, boron, cadmium, chromium (III), chromium (VI), cobalt, copper, lead, manganese, mercury, nickel, selenium, strontium, tin, organic tin and zinc from *toy materials* and from parts of toys.

Packaging materials are not considered to be part of the toy unless they have intended play value.

NOTE 1 See guidance document of the European Commission guidance document no. 12 [2] on the application of the Directive on the safety of toys – packaging.

The standard contains requirements for the migration of certain elements from the following categories of *toy materials*:

- Category I: Dry, brittle, powder like or pliable materials;
- Category II: Liquid or sticky materials;
- Category III: Scraped-off materials.

The requirements of this standard do not apply to toys or parts of toys which, due to their accessibility, function, volume or mass, clearly exclude any hazard due to sucking, licking or swallowing or prolonged skin contact when the toy or part of toy is used as intended or in a foreseeable way, bearing in mind the behaviour of children.

NOTE 2 For the purposes of this standard, for the following toys and parts of toys the likelihood of sucking, licking or swallowing toys is considered significant (see H.2 and H.3):

- All toys intended to be put in the mouth or to the mouth, cosmetics toys and writing instruments categorised as toys can be considered to be sucked, licked or swallowed;
- All the accessible parts and components of toys intended for children up to 6 years of age can be considered to come into contact with the mouth. The likelihood of mouth contact with parts of toys intended for older children is not considered significant in most cases (see H.2).

2 Normative references

The following documents, in whole or in part, are referenced in this document and are necessary for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 71-1:2011, *Safety of toys — Part 1: Mechanical and physical properties*

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

koniec náhľadu – text d'alej pokračuje v platenej verzii STN