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**Varnost igrač - 2. del: Vnetljivost**

Safety of toys - Part 2: Flammability

Sicherheit von Spielzeug - Teil 2: Entflammbarkeit

Sécurité des jouets - Partie 2: Inflammabilité

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## Safety of toys - Part 2: Flammability

Sécurité des jouets - Partie 2: Inflammabilité

Sicherheit von Spielzeug - Teil 2: Entflammbarkeit

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 52.

If this draft becomes a European Standard, 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.

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EUROPEAN COMMITTEE FOR STANDARDIZATION  
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EUROPÄISCHES KOMITEE FÜR NORMUNG

**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

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## European foreword

This document (prEN 71-2:2019) has been prepared by Technical Committee CEN/TC 52 “Safety of toys”, the secretariat of which is held by DS.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 71-2:2011+A1:2014.

Annex B provides details of significant technical changes between this European Standard and the previous edition.

This document has been prepared under mandate M/445 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.

This document constitutes the second part of the series on safety of toys and is read in conjunction with Part 1.

This document 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 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, cosmetic kits and gustative games*
- *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*, and
- CEN Technical Report CEN/TR 15371 (all parts), *Safety of toys — Interpretations*
- CEN Technical Report CEN/TR 16918: *Safety of toys - Children's mouthing behaviour in contact with toys*
- CEN Technical Report CEN ISO/TR 8124-8:2016: *Safety of toys – Age determination guidelines*

NOTE 2 Words in italics are defined in Clause 3 (Terms and definitions). Additional information on the background and rationale for various requirements is given in Annex A.

NOTE 3 Different legal requirements may exist in non-EU countries.

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## Introduction

This document aims at reducing as far as possible those hazards which are not evident to users; it does not cover inherent hazards that are obvious to children or the persons in charge of them. Assuming that the toys are used in the intended manner, they should not present any further hazard to children for whom they are intended (according to the Directive 2009/48/EC “intended for use by” means that a parent or supervisor shall reasonably be able to assume by virtue of the functions, dimensions and characteristics of a toy that it is intended for use by children of the stated age group). Allowance should also be made for foreseeable use, bearing in mind the behaviour of children who do not generally share the same degree of care as the average adult user.

As a general rule, toys are designed and manufactured for particular ages of children. Their characteristics are related to the age and stage of development of the children, and their use presupposes certain aptitudes.

Accidents are frequently due to a toy either being given to a child for whom it is not intended, or being used for a purpose other than that for which it was designed. Great care should therefore be taken when choosing a toy; account should be taken of the mental and physical development of the child who will be using it.

The requirements of this document do not release parents or carers from their responsibility of watching over the child while he or she is playing.

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## 1 Scope

This document specifies the categories of flammable materials which are prohibited in all toys, and requirements concerning *flammability* of certain toys when they are subjected to a small source of ignition.

The test methods described in Clause 5 are used for the purposes of determining the *flammability* of toys under the particular test conditions specified. The test results thus obtained are not considered as providing an overall indication of the potential fire hazard of toys or materials when subjected to other sources of ignition.

This document includes general requirements relating to all toys and specific requirements and methods of test relating to the following toys, which are considered as being those presenting the greatest hazard:

- toys to be worn on the head: beards, moustaches, wigs, etc. made from *hair*, pile or *material with similar features*; masks; hoods, head-dresses, etc.; flowing elements of toys to be worn on the head, but excluding paper novelty hats of the type usually supplied in party crackers;
- toy *disguise costumes* and toys intended to be worn by a child in play;
- toys intended to be entered by a child;
- *soft-filled toys*.

NOTE Additional requirements for *flammability* of electric toys are specified in EN 62115:2005.

## 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 ISO 2431:2011, *Paints and varnishes - Determination of flow time by use of flow cups (ISO 2431:2011)*

EN ISO 6941:2003, *Textile fabrics - Burning behaviour - Measurement of flame spread properties of vertically oriented specimens (ISO 6941:2003)*

## 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia. available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

### 3.1

#### **flammability**

ability of a material or a product to burn with a flame under specified test conditions

### 3.2

#### **flaming debris**

material that becomes detached from the sample during the test procedure and continues to flame as it falls

**prEN 71-2:2019 (E)****3.3****hair**

slender flexible fibres intended to represent human or animal hair

**3.4****soft-filled toy**

toy, clothed or unclothed, with soft body surfaces and filled with soft material, readily allowing compression of the main part of the toy with the hand

**3.5****surface flash**

rapid spread of flame over the surface of a material without ignition of its base structure at the same time

**3.6****molten drips**

falling droplets of molten material

**3.7****flammable liquid**

liquid having a flash point  $\geq 23$  °C and  $\leq 60$  °C

[SOURCE REGULATION (EC) No 1272/2008]

**3.8****highly flammable liquid**

liquid having a flash point  $< 23$  °C and initial boiling point  $> 35$  °C

[SOURCE REGULATION (EC) No 1272/2008] <https://standards.iteh.ai/catalog/standards/sist/5b19fbfc-ba0b-4d6d-903b-dd4ad0346c6d/sist-en-71-2-2021>

**3.9****extremely flammable liquid**

liquid having a flash point  $< 23$  °C and initial boiling point  $\leq 35$  °C

[SOURCE REGULATION (EC) No 1272/2008]

**3.10****flammable gas**

gas or gas mixture having a flammable range with air at 20 °C and a standard pressure of 101,3 kPa

[SOURCE REGULATION (EC) No 1272/2008]

**3.11****chemical toy**

toy intended for the direct handling of chemical substances and mixtures and which is used in a manner appropriate to a given age-group and under the supervision of an adult

**3.12****material with similar features to hair**

material having the ability to flow like *hair*, to hang closely to the head and continue to move on its own after the head is rotated then stopped

**3.13****moulded head mask**

mask that is moulded to the contours of the head or face

**3.14****disguise costume**

costume and components, intended to be worn by children to facilitate imaginative play where the child pretends to be a character, for example, a cowboy, a superhero, a princess, a monster etc

Note 1 to entry: costumes and garments for children under 12 months are not regarded as toy disguise costumes since such children are unable to engage in character role play

**3.15****highly flammable solid**

material with similar behaviour in fire as celluloid (cellulose nitrate), i.e. ignites instantaneously in brief contact with a flame and proceeds to burn very rapidly

Note 1 to entry: further information is provided in A.3

**3.16****hem**

folded over flap of fabric secured to itself usually by sewing and sometimes using a fusible tape to provide a neat finish to an edge, e.g. bottom edge of trousers and skirts

**4 Requirements****4.1 General requirements**

The following materials shall not be present in toys:

- celluloid (cellulose nitrate), except when used in varnish, paint or glue, or in balls of the type used for table tennis or similar games, and
- *highly flammable solids* (see A.3).

Specific materials to which the test flame is applied in order to check compliance of the toy with requirements in 4.2 to 4.5 are considered to comply with the above requirements if the toy meets its appropriate requirements in 4.2 to 4.5:

- materials with a piled surface which produce *surface flash* when a flame is applied to the tested material under the conditions described in 5.5 (test for soft-filled toys) Piled surfaces showing no momentary area of flame over the area of the piled surface remote from the test flame are considered to meet this requirement.

In addition, toys shall not contain *flammable gases*, *extremely flammable liquids*, *highly flammable liquids*, *flammable liquids* and flammable gels except as provided for below:

- *flammable liquids* and flammable gels supplied in sealed containers having a maximum volume of 15 ml per container;
- *highly flammable liquids* and *flammable liquids* being entirely retained within a porous material in capillary channels of writing instruments;
- *flammable liquids* with a viscosity greater than  $260 \times 10^{-6} \text{ m}^2/\text{s}$  corresponding to a flow time of more than 38 s when determined in accordance with EN ISO 2431:2011 using cup No. 6;

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- *highly flammable liquids* contained in chemical toys, and in olfactory board games, cosmetic kits and gustative games, as defined in 2009/48/EC.

## 4.2 Toys to be worn on the head (see A.4)

### 4.2.1 General

The requirements of 4.2 apply to:

- beards, moustaches, wigs, made from *hair*, pile or *material with similar features*,
- moulded and fabric masks,
- hoods, head-dresses, etc.,
- flowing elements of toys to be worn on the head,

but not to paper novelty hats of the type usually supplied in party crackers (see A.4).

When a product incorporates several features, for example a hat with an attached mask and *hair*, each part shall be tested separately to the applicable clause relevant to that particular part of the toy.

Attachments made from elastic or string which, for example, are used for the purpose of securing a mask, hat, etc. on the head shall not be tested.

### 4.2.2 Beards, moustaches, wigs, etc., made from hair, pile or material with similar features (e.g. free-hanging ribbons, paper, cloth strands or other flowing elements), which protrude 50 mm or more from the surface of the toy

When tested according to 5.2 (test relating to beards, moustaches, wigs, etc., made from hair, pile or material with similar features), the duration of flaming shall not be more than 2 s after the removal of the test flame.

In addition, if ignition occurs, the maximum burnt length of *hair*, pile, or *material with similar features* shall not be:

- more than 50 % of the greatest initial length, when the initial length was 150 mm or more, or
- more than 75 % of the greatest initial length, when the initial length was less than 150 mm.

When determining whether materials are required to be tested under 4.2.2, the distance by which the material protrudes shall be measured without applying tension to the protruding part, e.g. curly *hair* is not straightened. Plaits or braided *hair* shall be fully released and combed, where possible, before testing.

Upward protruding items such as vertical feathers on a headdress are not to be considered under this clause.

### 4.2.3 Beards, moustaches, wigs, etc., made from hair, pile or material with similar features (e.g. free-hanging ribbons, paper, cloth strands or other flowing elements), which protrude less than 50 mm from the surface of the toy

Wigs, etc. made from *hair*, pile or *material with similar features* which protrude 5 mm or less from the surface of the toy are regarded as head-dresses and are covered by 4.2.5.

When tested in accordance with 5.3 (test relating to beards, moustaches, wigs, etc., made from hair, pile or material with similar features), the duration of flaming shall not be more than 2 s after the removal of the test flame, and the maximum distance between the upper edge of the burnt area and the point of application of the test flame shall not be more than 70 mm.