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Safety of toys - Part 7: Finger paints - Requirements and test methods

Sicherheit von Spielzeug - Teil 7: Fingermalfarben - Anforderungen und Prüfverfahren

Sécurité des jouets - Partie 7: Peintures au doigt - Exigences et méthodes d'essai

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Safety of toys - Part 7: Finger paints - Requirements and test methods

Sécurité des jouets - Partie 7: Peintures au doigt -
Exigences et méthodes d'essai

Sicherheit von Spielzeug - Teil 7: Fingermalfarben -
Anforderungen und Prüfverfahren

This European Standard was approved by CEN on 31 August 2017 and includes Amendment 2 approved by CEN on 9 January 2018.

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European foreword

This document (EN 71-7:2014+A2:2018) 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of an identical text or by endorsement, at the latest by August 2018 and conflicting national standards shall be withdrawn at the latest by August 2018.

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

This document supersedes A2 EN 71-7:2014+A1:2017. A2

This document includes Amendment 1 approved by CEN on 2017-08-31.

This document includes Amendment 2 approved by CEN on 2018-01-09.

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

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EN 71, *Safety of toys*, consists of the following parts: <http://standards.iteh.ai/sist/af680c18-1e86-4002-afb3-2b06c357359c/sist-en-71-7-2014a2-2018>

- *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*

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A1 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/TR 15371 (all parts), *Safety of toys – Interpretations*. **A1**

This part 7 of the EN 71 series is intended to be read in conjunction with EN 71, part 1.

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

According to the CEN-CENELEC Internal Regulations, the national standards organizations 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, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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Introduction

This European Standard contains requirements which are intended to reduce the risks to children when *finger paints* are used as intended or in a foreseeable way, bearing in mind the behaviour of children. It is intended to complete the essential safety requirements of Directive 2009/48/EC by providing special requirements for *finger paints*.

It is recognized that *finger paints* when compared to other toy products present different risks because of the intended use by fingers or hands and the age of the child. For example, prolonged skin contact or possible ingestion of paint material cannot be ruled out. Therefore, the safety requirements outlined in other parts of EN 71 needed to be expanded upon for *finger paints*. In order to address the risks associated with the use of *finger paints* by children, this part of EN 71 contains requirements relating to preservatives as well as other ingredients that may be used in the manufacture of *finger paints* and requirements relating to impurities, migration of certain elements and other attributes.

Chemical Abstract Service Registry Number (CAS), European Inventory of Existing Chemical Substances Number (EINECS) or Colour Index Number given in the tables are provided for information purposes only.

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EN 71-7:2014+A2:2018 (E)**1 Scope**

This part of EN 71 specifies requirements for the substances and materials used in *finger paints* and applies to *finger paints* only.

Additional requirements are specified for markings, labelling and containers.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable 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 71-3, *Safety of toys - Part 3: Migration of certain elements*

EN 71-12, *Safety of toys - Part 12: N-Nitrosamines and N-nitrosatable substances*

EN ISO 787-9, *General methods of test for pigments and extenders - Part 9: Determination of pH value of aqueous suspension (ISO 787-9)*

3 Terms and definitions

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

**3.1
finger paint**
aqueous semi-solid or liquid, coloured mixture specially designed for children to apply directly to suitable surfaces with the fingers and hands

**3.2
colourant**
pigment or dyestuff

Note 1 to entry: For definitions of pigment and dyestuff, see EN ISO 4618.

**3.3
extender**
material in granular or powder form, insoluble in the medium and used to modify or influence certain physical properties

[SOURCE: EN ISO 4618:2006, 2.98]

**3.4
humectant**
substance that delays the drying process

**3.5
binding agent**
water soluble or miscible, non-volatile component that binds the paint to the surface to which it has been applied

**3.6
preservative**
substance that prevents the growth of undesirable micro-organisms

3.7**surfactant**

surface active substance

3.8**embittering agent**

substance that gives the product a bitter taste

4 Requirements

NOTE The requirements of this standard apply to *finger paints* in the form used by the child. In the case of powdered *finger paints* (for example to which water might be added before use) the requirements apply to the *finger paint* prepared according to the manufacturer's instructions.

4.1 General

Finger paints shall not contain dangerous substances or mixtures in amounts which can harm the health of children using them.

NOTE 1 For more information, see Directive 1999/45/EC [2] and Regulation No. (EC) 1272/2008 [1].

Finger paints shall not fulfil the criteria of any of the following hazard classes:

- “acute toxicity” (hazard class 3.1),
- “Skin corrosion/irritation” (hazard class 3.2),
- “Serious eye damage/eye irritation” (hazard class 3.3),
- “Respiratory or skin sensitisation” (hazard class 3.4),
- “Germ cell mutagenicity” (hazard class 3.5),
- “Carcinogenicity” (hazard class 3.6),
- “Reproductive toxicity” (hazard class 3.7),
- “Specific target organ toxicity — single exposure” (hazard class 3.8),
- “Specific target organ toxicity — repeated exposure” (hazard class 3.9),
- “Aspiration hazard” (hazard class 3.10).

NOTE 2 The classification is detailed in Regulation (EC) No. 1272/2008 [1] (Annex I, Part 3: Health Hazards).

4.2 Colourants

4.2.1 Only *colourants* and colouring materials which are not fulfilling the hazard criteria in 4.1 shall be used in *finger paints*.

NOTE A non-exhaustive list of commonly used *colourants*, subject to meeting purity requirements, is given in Annex A consisting of *colourants* falling in one or more of the following categories: *Colourants* permitted for use in food and/or cosmetics and other pigments which meet the general requirements of 4.1.

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4.2.2 *Finger paints* shall not contain azo *colourants* that by cleavage of one or more azo groups can produce the primary aromatic amines listed in Tables 1 and 2 when tested in accordance with the test method specified in Annex D.

4.3 Preservatives

Finger paints shall be preserved using only the *preservatives* listed in Annex B. The determination of preservatives shall be in accordance with the methods approved under EU Cosmetics Legislation, where available (see Directive 82/434/EEC [6], Directive 83/514/EEC [7], Directive 85/490/EEC [8], Directive 93/73/EEC [9], Directive 95/32/EC [10], Directive 96/45/EC [11]). When tested in accordance with these methods, the maximum concentrations specified in the column "maximum allowed concentration" of Table B.1 and the limitations and requirements specified in the column "Limitations and requirements" of Table B.1 shall be observed.

4.4 Migration of certain elements

When tested in accordance with EN 71-3 the concentration of elements shall not exceed the limit values specified in EN 71-3.

4.5 Limits for impurities

4.5.1 Limits for primary aromatic amines

4.5.1.1 The primary aromatic amines listed in Table 1 shall not be determinable when tested in accordance with the test method in Annex D.

Table 1 (Primary aromatic amines)

Primary aromatic amines	CAS number
Benzidine	92-87-5
2-Naphthylamine	91-59-8
4-Chloro-2-methyl-aniline (4-Chloro- <i>o</i> -toluidine)	95-69-2
4-Aminobiphenyl	92-67-1

4.5.1.2 *Finger paints* shall not contain carcinogenic primary aromatic amines (see Table 2 for a non-exhaustive list of relevant substances) in a total amount exceeding 20 mg/kg, with no individual primary aromatic amine exceeding 10 mg/kg, when tested in accordance with Annex D. The limitation does not apply to aromatic aminocarboxylic acids or aminosulfonic acids.

Table 2 — Other carcinogenic primary aromatic amines (non-exhaustive list)

Carcinogenic primary aromatic amine	CAS number
<i>o</i> -Aminoazotoluene (4- <i>o</i> -tolylazo- <i>o</i> -toluidine)	97-56-3
2-Amino-4-nitro-toluene (5-Nitro- <i>o</i> -toluidine)	99-55-8
4-Chloroaniline	106-47-8
2,4-Diaminoanisole	615-05-4
4,4'-Diaminodiphenylmethane (4,4'-Methylenedianiline)	101-77-9
3,3'-Dichlorobenzidine ^a	91-94-1
3,3'-Dimethoxybenzidine	119-90-4
3,3'-Dimethylbenzidine	119-93-7
3,3'-Dimethyl-4,4'-diaminodiphenylmethane	838-88-0
<i>p</i> -Cresidine (6-Methoxy- <i>m</i> -toluidine)	120-71-8
2,2'-Dichloro-4,4'-methylenedianiline (4,4'-Methylene-bis-2-chloroaniline)	101-14-4
4,4'-Oxydianiline	101-80-4
4,4'-Thiodianiline	139-65-1
<i>o</i> -Toluidine	95-53-4
2,4-Xylidine	95-68-1
2,6-Xylidine	87-62-7
4-Amino-3-fluorophenol	399-95-1
6-Amino-2-ethoxynaphthalene	293733-21-8
2-Methoxyaniline (<i>o</i> -anisidine)	90-04-0
4-Aminoazobenzene	60-09-3
4-Methyl- <i>m</i> -phenylenediamine (Toluene-2,4-diamine)	95-80-7
2,4,5-Trimethylaniline	137-17-7
Aniline	62-53-3
^a For certain pigments limit values for 3,3'-Dichlorobenzidine are given Annex A.	

4.5.2 Limits for other impurities

Finger paints shall not contain the impurities specified in Table 3, column 1 above the limits specified in column 2 when *colourants* specified in Table 3, column 3 are used, when tested in accordance with Annex E.

Table 3 — Impurities in *finger paints*

Impurity	Limit mg/kg	<i>Finger paints</i> of concern
Polychlorinated biphenyls	2	<i>Finger paints</i> containing <i>colourant</i> products containing chlorine or manufactured in chlorinated solvents
Hexachlorobenzene	5	<i>Finger paints</i> containing <i>colourant</i> products containing chlorine or manufactured in chlorinated solvents
Benzo (a) pyrene	0,05	Only for <i>finger paints</i> containing carbon black

4.6 Taste and smell

Finger paints shall not be sweetened, flavoured or fragranced.

An *embittering agent* in accordance with the following list (see Table 4) shall be added in order to discourage and minimize the ingestion of paint. The bitterness shall stay in the product during product lifetime.

The bitterness should be sensorically detectable in a dilution with water 1:100.

Table 4 — Embittering agents

Embittering agent	CAS number
Naringin	CAS 10236-47-2
denatonium benzoate	CAS 3734-33-6

NOTE The relative bitterness of these substances is approximately 1:3000 (naringin : denatonium benzoate). The following levels have been found suitable: naringin 1 %; denatonium benzoate 0,0004 % (4 mg/kg).

4.7 pH-value

The pH-value of the *finger paint* shall be between 4,0 and 10,0 when tested in accordance with EN ISO 787-9.

4.8 Binding agents, extenders, humectants and surfactants

Only *binding agents*, *extenders*, *humectants* and *surfactants* which are not fulfilling the hazard criteria in 4.1 shall be used in *finger paints*.

NOTE 1 See Annex C for a list of compounds known to be commonly used.

NOTE 2 The classification is detailed in Regulation (EC) No. 1272/2008 [1] (Annex I, Part 3: Health Hazards).

4.9 N-Nitrosamines

When tested in accordance with EN 71-12 the concentration of N-nitrosamines shall not exceed the limit values specified in EN 71-12.

4.10 Containers

The containers used for *finger paints* shall not possess a form, odour, colour, appearance, packaging, labelling, volume or size, such that it is likely that consumers, especially children, will confuse them with foodstuffs and in consequence place them or the *finger paints* in their mouths, or suck or ingest them.

5 Product information

5.1 General

Markings shall be clearly visible, easily legible, indelible, understandable and accurate. All markings shall be in the national language(s) of the country(ies) of sale.

NOTE EN 71-1 contains further marking requirements.

If the container is also the primary packaging all information under 5.2.1 shall also be given on the container. All information shall draw the attention of users or their supervisors to the inherent hazards and risks of harm involved in using the *finger paint* and to the way of avoiding such hazards and risks.

5.2 Marking

5.2.1 Primary packaging

NOTE Primary packaging is referred to as consumer packaging in Directive 2009/48/EC or as outer packaging in Regulation EC No. 1272/2008.

5.2.1.1 Manufacturer's identification

The primary packaging shall bear the name, trade name and/or trade mark and the address of the manufacturer, his authorized representative or the importer.

5.2.1.2 Labelling phrases

The primary packaging shall carry the following warning:

“Warning. Children under 3 years of age should be supervised by adults.”

The word “Warning” may be followed by, e.g. an exclamation mark or other punctuation marks. The word “Warning” may be written in capital letters.

[A1] NOTE H- and P-phrase information specified in Regulation (EC) No. 1272/2008 [1] can be required by certain dangerous substances and dangerous mixtures supplied in the finger paint (e.g. EuH 208 on sensitization). **[A1]**

Finger paints supplied in powder form shall additionally bear the following warning:

[A1] **“Warning. Mix with water in accordance with the instructions before giving to a child. Avoid inhalation of the powder.”** **[A1]**

Finger paints supplied in powder form should bear instructions that indicate how to mix with water and in particular, the correct ratio of water to powder. This information may alternatively be placed in documentation supplied with the toy.

Additionally there shall be information included for *finger paints* supplied as a powder to avoid inhalation of the powder.