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

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

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
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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prEN 71-7:2024 (E)**European foreword**

This document (prEN 71-7:2024) 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 71-7:2014+A3:2020.

This document has been prepared under a standardization request addressed to CEN by the European Commission. The Standing Committee of the EFTA States subsequently approves these requests for its Member States

For relationship with EU Legislation, see informative Annex ZA, which is an integral part of this document.

Additional information on the rationale for various requirements is given in Annex F.

The significant technical changes between this document and the previous edition are detailed in Annex G.

This document constitutes the seventh part of the EN 71 series of standards on safety of toys.

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 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*
- *Part 15: Formamide in foam toy materials (content) (under development)*
- *Part 16: Certain chlorinated phosphorus flame retardants (TCEP, TCPP, TDCP) in toy materials (under development)*

- *Part 17: Certain isothiazolinones (MIT, CIT, BIT) in aqueous toy materials* (under development)
- *Part 18: Phenol in aqueous (content) and polymeric (migration) toy materials* (under development)
- *Part 19: Migration of bisphenol A from toy materials* (under development)
- *Part 20: Microbiological safety of toys containing accessible aqueous media* (under development)

It is up to the user of the standard to determine whether or not a toy is included in the scope of several of the above parts of the EN 71 series, and to apply each applicable standard accordingly. Normative references from one part of the EN 71 series to another, are therefore normally not provided in the individual parts.

NOTE 1 In addition to the above parts of EN 71, the following deliverables have been published:

- CEN/TR 15071, *Safety of toys — National translations of warnings and instructions for use in the EN 71 series*,
- CEN/TR 15371 (Parts 1 and 2), *Safety of toys — Interpretations*,
- CEN/TR 16918, *Safety of toys — Children's mouthing behaviour in contact with toys*,
- CEN/TR 17695, *Safety of toys — Mechanical and physical properties — Guidance on categorisation of projectile toys within EN 71-1*,
- CEN/TS 17973, *Safety of toys — Categorization of slime type materials*, and
- CEN ISO/TR 8124-8, *Safety of toys — Part 8: Age determination guidelines*.

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

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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 [23] 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 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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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.

NOTE EN 71-3 and EN 71-12 specify requirements and test methods for finger paints for the migration of certain elements (see F.4) and N-nitrosamines (see F.9).

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 ISO 19396-1:2020, *Paints and varnishes — Determination of pH value — Part 1: pH electrodes with glass membrane (ISO 19396-1:2017)*

3 Terms and definitions

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

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

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

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

Note 1 to entry: In the case of powdered *finger paints*, where water needs to be added before use, the requirements of this document apply to the finger paint prepared according to the instructions for use.

3.2

colourant

colouring material

substance that confers colour to other materials

Note 1 to entry: Colouring materials comprise pigments (3.3) that are insoluble in the application medium as well as dyestuffs (3.4) that are soluble in the application medium.

[SOURCE: EN ISO 4618:2023, 3.57]

3.3

pigment

colourant consisting of particles, insoluble in the application medium (e.g. coating material or plastic)

[SOURCE: EN ISO 4618:2023, 3.193]

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3.4

dyestuff

colourant, soluble in the application medium

[SOURCE: EN ISO 4618:2023, 3.92]

3.5

extender

material in granular or powder form, practically insoluble to somewhat soluble in the application medium and used to modify or influence certain physical properties

Note 1 to entry: Whether a given substance is to be considered as pigment (3.3) or extender depends on its application.

[SOURCE: EN ISO 4618:2023, 3.104, modified – Note 2 to entry has been deleted]

3.6

humectant

substance that delays the drying process

3.7

binding agent

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

3.8

preservative

substance that prevents the growth of undesirable micro-organisms

3.9

surfactant

surface active substance

3.10

embittering agent

substance that gives the product a bitter taste

3.11

booster substance

substance used for increasing the efficacy of *preservatives*

4 Requirements

4.1 General

The requirements of this standard apply to *finger paints* in the form used by the child. In the case of powdered *finger paints* where water needs to be added before use, the requirements apply to the *finger paint* prepared according to the instructions for use.

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 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* 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.

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.

NOTE Combinations with *booster substances* are acceptable (see 4.9).

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 Table B.2 and the limitations and requirements specified in the column “Limitations and requirements” of Table B.1 and Table B.2 shall be observed.

4.4 Limits for impurities

4.4.1 Limits for primary aromatic amines

4.4.1.1 In *finger paints* the primary aromatic amines listed in Table 1 shall be less than the “limit of quantification” 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

4.4.1.2 *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

Carcinogenic primary aromatic amine	CAS number
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 <i>pigments</i> limit values for 3,3'-Dichlorobenzidine are given in Annex A.	

4.4.2 Limits for other impurities

Finger paints shall not contain the impurities specified in Table 3, column 1 above the limits specified in Table 3, 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	Finger paints 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

4.5 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 sensorially 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

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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).

4.6 pH-value

The pH-value of the *finger paint* shall be between 4,0 and 10,0 when tested in accordance with EN ISO 19396-1:2020.

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

4.8 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.

4.9 Booster substances (see F.15)

Only *booster substances* (in combination with *preservatives*) which are not fulfilling the hazard criteria in 4.1 (except for H302, H315, H318, H319, H332, H335) shall be used in *finger paints*.

NOTE Examples of *booster substances* are listed in Annex C, e).

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 [23] or as outer packaging in Regulation EC No. 1272/2008.

5.2.1.1 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.

NOTE H- and P-phrases 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).