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Interested committees:

Title: Draft BS ISO 8124-5 Safety of toys. Part 5: Determination of total concentration of certain elements in toys.

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Introduction

This draft standard is based on national and international discussions. Your comments on this draft are invited and will assist in the preparation of the consequent standard.

For international standards, comments will be reviewed by the relevant UK national committee before sending the consensus UK vote and comments to the international committee, which will then decide appropriate action. If the international standard is approved, it is usual for the text to be published as a British Standard.

For national standards, comments will be reviewed by the relevant UK national committee and the resulting standards published as a British Standard.

UK Vote

Please indicate whether you consider the UK should submit a negative (with supporting technical reasons) or positive vote on this draft. Please indicate if you are aware of any reason why this draft standard should not be published as a British Standard.

Submission of Comments

- **Annotated drafts are not acceptable and will be rejected.**
- All comments should be submitted online at <https://standardsdevelopment.bsigroup.com/>. You will need to register in order to comment.

Template for comments and secretariat observations

Date: xx/xx/20xx	Document: ISO/DIS xxxx
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1	2	(3)	4	5	(6)	7
MB	Clause No./ Subclause No./Annex (e.g. 3.1)	Paragraph/ Figure/Table/Note	Type of comment	Comment (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
	3.1	Definition 1	ed	Definition is ambiguous and needs clarifying.	Amend to read '...so that the mains connector to which no connection...'	
	6.4	Paragraph 2	te	The use of the UV photometer as an alternative cannot be supported as serious problems have been encountered in its use in the UK.	Delete reference to UV photometer.	



DRAFT International Standard

ISO/DIS 8124-5

Safety of toys —

Part 5: Determination of total concentration of certain elements in toys

Sécurité des jouets —

*Partie 5: Détermination de la concentration totale de certains
éléments dans les jouets*

ICS: 97.200.50

ISO/TC 181

Secretariat: **DS**

Voting begins on:
2025-01-20

Voting terminates on:
2025-04-14

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Contents

Page

Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	2
4 Principle	3
5 Reagents and apparatus	3
5.1 Reagents	3
5.2 Apparatus	4
6 Selection and composition of test portions	5
6.1 Selection of test portions	5
6.2 Composition of test portions	5
7 Preparation of test portions	5
7.1 Overview	5
7.2 Coatings of paint, varnish, lacquer, printing ink, polymer and similar coatings	6
7.3 Polymeric and similar materials, including laminates, whether textile-reinforced or not, but excluding other textiles	6
7.4 Paper, paperboard and cardboard	6
7.5 Natural or synthetic textiles	6
7.6 Other materials, whether mass-coloured or not	6
7.7 Materials intended to leave a trace	7
7.8 Pliable modelling materials, including modelling clays, and gels	7
7.9 Paints, including finger paints, varnishes, lacquers, and similar materials, in solid or liquid form	7
7.9.1 Materials in solid form	7
7.9.2 Materials in liquid form	7
7.10 Metallic materials whether or not partly coated	7
8 Digestion of test portions	8
8.1 Overview	8
8.2 Microwave digestion	8
8.2.1 Non-metallic materials	8
8.2.2 Metallic materials, whether or not partly coated	8
8.2.3 Microwave digestion conditions	9
8.2.4 Cooling and dilution	9
8.3 Hot plate and hot block digestion	9
8.3.1 Non-metallic materials	9
8.3.2 Metallic materials whether or not partly coated	10
9 Elemental analysis	10
9.1 Methods of Analysis	10
9.2 Method detection limit	10
10 Expression of results	11
11 Test report	11
Annex A (informative) Background and rationale	13
Annex B (informative) Screening determination of certain elements of antimony, arsenic, barium, cadmium, chromium, lead, mercury and selenium in plastic toys – Energy dispersive X-ray fluorescence spectrometry	17
Bibliography	22

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 181, *Safety of toys*.

This second edition cancels and replaces the first edition (ISO 8124-5:2015), which has been technically revised.

The main changes are as follows:

- The choice of digestion mixtures has been changed from being based on the final quantification instruments (ICP-MS or ICP-OES) to being based on the type of test part/sample material. A new digestion mixture (1:9 mixture of hydrochloric acid and nitric acid) is introduced to replace the reverse aqua regia mixture.
- An EDXRF method for screening the contents of eight elements in plastic materials in toys is given as an informative annex.

A list of all parts in the ISO 8124 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

See [A.1](#) (use and applicability).

This document defines a method for the determination of the total concentration of certain elements in toy materials and can be used to decide whether there is a need to undertake migration testing in accordance with the method specified in ISO 8124-3, *Migration of certain elements* or other equivalent standards, e.g. EN 71-3 or ASTM F963. A material can be considered to conform to the requirements of ISO 8124-3:2020/Amd 1:2023 if the total concentration results are below the soluble limits as prescribed in ISO 8124-3:2020/Amd 1:2023, Table 1. If the soluble limits in ISO 8124-3:2020/Amd 1:2023, Table 1 are exceeded, migration testing in accordance with ISO 8124-3:2020/Amd 1:2023 will be required to determine compliance with ISO 8124-3:2020/Amd 1:2023. A screening determination method for the eight elements in plastics using the analytical technique of energy dispersive X-ray fluorescence (EDXRF) spectrometry is provided as an option to quickly determine whether the screened part or section of a product would require to be quantitatively analyzed by the digestion method described in this document.

In addition, decisions can be also taken, within the scope of this document, on the compliance of the material with any regulatory requirements that impose restrictions on the total concentration of certain elements.

Where legal conformity requires migration testing, this document can only be used to non-quantitatively confirm compliance with regulatory limits.

Users of this document are reminded that it has been developed only for the eight elements listed in [Table 1](#). The use of this method for other elements must be validated by the user.

Safety of toys —

Part 5:

Determination of total concentration of certain elements in toys

1 Scope

1.1 This document specifies methods of sampling and analysis of the total concentration of the elements antimony, arsenic, barium, cadmium, chromium, lead, mercury, and selenium from toy materials and from parts of toys.

NOTE Other elements can be determined by this method provided adequate analytical performance is demonstrated. Manufacturers are encouraged to apply the test methods of this document and the limits from ISO 8124-3 to raw materials used in the manufacture of toys to give increased certainty of conformity to the requirements of ISO 8124-3.

1.2 Digestion methods for the elements mentioned in [1.1](#) are specified for the following types of toy materials:

- coatings of paint, varnish, lacquer, printing ink, polymer, and similar coatings;
- polymeric and similar materials, including laminates, whether textile-reinforced or not, but excluding other textiles;
- paper, paperboard, and cardboard;
- natural or synthetic textiles;
- metallic materials whether coated or not;
- other materials, whether mass-coloured or not (e.g. wood, fibreboard, hardboard, bone, and leather);
- materials intended to leave a trace (e.g. the graphite materials in pencils and liquid ink in pens);
- pliable modelling materials, including modelling clays and gels;
- paints to be used as such in the toy, including finger paints, varnishes, lacquers, and similar materials in solid or liquid form;
- packaging materials that form part of the toy or have intended play value (see [A.2.1](#), packaging).

NOTE Digestion methods for glass, ceramic, and other siliceous materials or fluorinated polymers or fluorinated polymer coatings are not described, and these types of materials are outside the scope of this document (see [A.1](#), use and applicability).

1.3 Screening determination (without the need for sample preparation and digestion) of the elements mentioned in [1.1](#) are specified for plastics using EDXRF spectrometry (See [Annex B](#)).

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.