

Australian/New Zealand Standard™

Safety of toys

Part 12: Determination of total concentration of certain elements in toys (ISO 8124-5:2015, MOD)



AS/NZS 8124.12:2017

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee CS-018, Safety of Children's Toys. It was approved on behalf of the Council of Standards Australia on 30 May 2017 and by the New Zealand Standards Approval Board on 5 July 2017.

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The following are represented on Committee CS-018:

Australian Chamber of Commerce and Industry
Australian Competition and Consumer Commission
Australian Industry Group
Australian Toy Association
CHOICE
Consumer Affairs Victoria
Consumers' Federation of Australia
Kidsafe
Ministry of Business, Innovation and Employment, New Zealand
National Acoustic Laboratories
National Retail Association
New Zealand Toy Distributors Association
NSW Fair Trading
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This Standard was issued in draft form for comment as DR AS/NZS 8124.12:2016.

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee CS-018, Safety of Children's Toys.

The objective of this Standard is to define a method for the determination of the total concentration of certain elements in toy materials which can be used to decide whether there is a need to undertake migration testing in accordance with the method specified in AS/NZS 8124.3, *Safety of toys Part 3: Migration of certain elements (ISO 8124-3:2010, MOD)*.

This Standard is an adoption with national modifications, and has been reproduced from ISO 8124-5:2015, *Safety of toys, Part 5: Determination of total concentration of certain elements in toys*. The modification is to replace references to an international normative reference with references to a non-identical national Standard as set out below.

As this Standard is reproduced from an International Standard, the following applies:

- (a) In the source text 'this part of ISO 8124' should read 'this Australian/New Zealand Standard'.
- (b) A full point substitutes for a comma when referring to a decimal marker.

References to ISO 8124-1 and ISO 8124-3 shall be replaced by references to the Australian/New Zealand Standard, as follows:

<i>Reference to International Standard</i>		<i>Australian/New Zealand Standard</i>	
ISO		AS/NZS	
8124	Safety of toys	8124	Safety of toys
8124-1	Part 1: Safety aspects related to mechanical and physical properties	8124.1	Part 1: Safety aspects related to mechanical and physical properties (ISO 8124-1:2014, MOD)
8124-3	Part 3: Migration of certain elements	8124.3	Part 3: Migration of certain elements (ISO 8124-3:2010, MOD)

Other normative references listed in Clause 2 have not been adopted as Australian or Australian/New Zealand Standards.

The term 'informative' has been used in this Standard to define the application of the annex to which it applies. An 'informative' annex is only for information and guidance.

AS/NZS 8124 consists of the following parts under the general title, *Safety of toys*:

Part 1: Safety aspects related to mechanical and physical properties (ISO 8124-1:2014, MOD)

Part 2: Flammability (ISO 8124-2:2014, MOD)

Part 3: Migration of certain elements (ISO 8124-3:2010, MOD)

Part 6: Swings, slides and similar activity toys for indoor and outdoor family domestic use (ISO 8124-4:2014, MOD)

Part 9: Organic chemical compounds—Requirements

Part 10: Organic chemical compounds—Sample preparation and extraction

Part 11: Organic chemical compounds—Methods of analysis

SA/SNZ ISO TR 8124 consists of the following part under the same general title:

Part 8: Age determination guidelines

AS 8124 consists of the following parts under the same general title, *Safety of toys*:

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

There are regulated requirements for toys in Australia and New Zealand. Users of this Standard are reminded that such regulations may refer to specific versions of the Standard and may also make variations to the requirements stated in the referenced version. Conformance with this Standard can therefore not be relied on to ensure compliance with the legal requirements for the sale of toys. Suppliers of toys should familiarize themselves with all regulated requirements for toys and ensure compliance with those as well as this Standard.

Regulations for consumer products can be found at—

- (a) For Australia — www.productsafety.gov.au; or
- (b) New Zealand — <http://www.comcom.govt.nz/fair-trading/product-safety-standards/>.

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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 documents 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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT), see the following URL: [Foreword — Supplementary information](#).

The committee responsible for this document is ISO/TC 181, *Safety of toys*.

ISO 8124 consists of the following parts, under the general title *Safety of toys*:

- *Part 1: Safety aspects related to mechanical and physical properties*
- *Part 2: Flammability*
- *Part 3: Migration of certain elements*
- *Part 4: Swings, slides and similar activity toys for indoor and outdoor family domestic use*
- *Part 5: Determination of total concentration of certain elements in toys*
- *Part 6: Certain phthalate esters in toys and children's products*
- *Part 7: Requirements and test methods for finger paints*
- *Part 8: Age determination guidelines*

INTRODUCTION

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

This part of ISO 8124 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 71-3:1994/AC:2002 or ASTM F963-11. A material can be considered to conform to the requirements of ISO 8124-3:2010 if the total concentration results are below the soluble limits as prescribed in ISO 8124-3:2010, Table 1. If the soluble limits in ISO 8124-3:2010, Table 1 are exceeded, migration testing in accordance with ISO 8124-3:2010 will be required to determine compliance with ISO 8124-3:2010.

In addition, decisions can be also taken, within the scope of this part of ISO 8124, 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 part of ISO 8124 can only be used to non-quantitatively confirm compliance with regulatory limits.

Users of this part of ISO 8124 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.

AUSTRALIAN/NEW ZEALAND STANDARD

Safety of toys

Part 12:

Determination of total concentration of certain elements in toys
(ISO 8124-5:2015, MOD)**1 Scope**

1.1 This part of ISO 8124 specifies methods of sampling and digestion prior to 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 part of ISO 8124 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 paints, varnishes, lacquers, printing inks, polymers, 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 part of ISO 8124 (see [A.1](#), use and applicability).

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.

ISO 8124-1, *Safety of toys — Part 1: Safety aspects related to mechanical and physical properties*