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# Safety of toys —

## Part 3: Migration of certain elements

*Sécurité des jouets —*

*Partie 3: Migration de certains éléments*



Reference number  
ISO 8124-3:2020(E)

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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](http://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](http://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 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](http://www.iso.org/iso/foreword.html).

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

This third edition cancels and replaces the second edition (ISO 8124-3:2010), which has been technically revised. It also incorporates the Amendments ISO 8124-3:2010/Amd.1:2014 and ISO 8124-3:2010/Amd.2:2018. The main changes to the previous edition are as follows:

- two detailed dewaxing methods have been introduced to replace the original one;
- an ICP-OES method for determination of the elements is given in [Annex C](#) as informative content.

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](http://www.iso.org/members.html).

## Introduction

The requirements of this document are based on the bioavailability of certain elements resulting from the use of toys, which should not, as an objective, exceed the following levels per day:

- 0,2 µg for antimony;
- 0,1 µg for arsenic;
- 25,0 µg for barium;
- 0,6 µg for cadmium;
- 0,3 µg for chromium;
- 0,7 µg for lead;
- 0,5 µg for mercury;
- 5,0 µg for selenium.

For the interpretation of these values, it has been necessary to identify an upper limit for the ingestion of toy material. Very limited data have been available for identifying this upper limit. As a working hypothesis, a summed average daily intake of the various toy materials has been gauged at the currently accepted value of 8 mg/d, in the knowledge that in certain individual cases these values might be exceeded.

By combining the daily intake with the bioavailability values listed above, limits have been obtained for various toxic elements in micrograms per gram of toy material (milligrams per kilogram) and are detailed in [Table 1](#). The values obtained have been adjusted to minimize children's exposure to toxic elements in toys and to ensure analytical feasibility, taking into account limits achievable under current manufacturing conditions (see [Annex D](#)).