



ISO 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*

Second edition
2026-08



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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 or sample material. A new digestion mixture (1:9 mixture of hydrochloric acid and nitric acid) has been introduced to replace the reverse aqua regia mixture.
- An energy dispersive X-ray fluorescence (EDXRF) method for screening the contents of eight elements in plastic materials in toys has been included as an informative annex.
- Certain elements of additional information contained in Annex A have been integrated into the main body of the text (e.g. Scope, 7.4).

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

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This document specifies a method for the determination of the total concentration of certain elements in toy materials. It can be used to decide whether there is a need to undertake migration testing in accordance with the method specified in ISO 8124-3 or other equivalent standards, e.g. EN 71-3 or ASTM F963.

NOTE 1 A material can be considered to conform to the requirements of ISO 8124-3 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 is required for the determination of conformity.

This document presents a screening determination method for eight elements in plastics using the analytical technique of energy dispersive X-ray fluorescence (EDXRF) spectrometry as an option for quickly determining whether the screened part or section of a product requires quantitative analysis using the digestion method.

This document can be used when taking decisions on the conformity of material with regulatory requirements that impose restrictions on the total concentration of certain elements.

NOTE 2 Where legal conformity requires migration testing, this document can only be used to non-quantitatively confirm compliance with regulatory limits.

This document has been developed only for the eight elements listed in [Table 1](#). The method specified in this document can be used for other elements 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.

For further information on the background and rationale behind this document, see [Clause A.1](#).