

New ISO method for microbiological testing of toys containing water

TÜV Rheinland LGA Products - Information November 2023

With toys containing water, there is always a risk of microbial contamination during production or use. The reasons for this is the water content in the product, which is essential for microbial growth, ingredients that are food for microbes, constant use (introduction of microorganisms) and use and storage at room temperature.

With this in mind, the Technical Committee *ISO / TC 181, safety of toys*, published an international standard on the microbiological safety of toys (*ISO 8124-12:2023-08; Safety of toys - Part 12: Microbiological safety*) for the first time in August 2023.

AREA OF APPLICATION

Toys containing water that are susceptible to microbial growth after the risk assessment described in the standard has been carried out, for example:

- Soap bubble liquid
- Soft putty
- Finger paints
- Gel pens
- Play slime
- Liquids in ink pads
- Opaque white in watercolor boxes
- Powders and similar substances intended to be mixed with water
- Toys that are also classified as cosmetics or contain a cosmetic
- Depending on the composition of the formula, other water-containing toys

This standard relates to toys containing water and is largely based on the contents of *ASTM F963*, whereby aspects of the previously and still valid *NB-Toys/2021-053* test protocol are also taken into account.

In contrast to the NB-Toys test protocol, the new ISO method essentially results in three changes:

- Carrying out a risk assessment: does the product to be tested fall within the application area of the standard
- Microbiological limit values depending on the age classification
- Additional performance of a preservation load test with a total test duration of 6 weeks

Microbiological testing of toys

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EXCEPTIONS

This does not apply to products for which it can be assumed that the risk of microbial growth in the product is low, for example:

- Products with a low proportion of freely available water (as only this proportion of water in the product is available for microbial growth). The dimension for this is an aw value of < 0.5
- Wax and oil-based products, such as lip balms, pomades and ointments
- Powder (anhydrous or almost anhydrous and non-hygroscopic or moisture-binding)
- Products with an alcohol content of ≥ 200 ml/l by volume
- Products with a pH value of < 3 or > 10
- Products where microbial contamination during foreseeable use is unlikely, such as fiber-based inks in pens.

NOT IN THE AREA OF APPLICATION

The following products are not covered by the scope of this standard:

- Food
- Powdered and pulverized materials of biological origin, such as shrimp eggs, seeds and soil
- Materials that are not accessible to the child during normal use or in the event of reasonably foreseeable misuse (e.g. liquid in teething rings after passing a physical test)
- Toys that do not contain water

ADVICE FOR ACTION

In contrast to the NB-TOYS/2021-053 protocol, the new ISO method not only examines the microbial status of the product directly after opening, but also the behavior of the product due to potential microbial contamination during use (preservation stress test).

The preservation stress test required by the standard for relevant products in particular extends the test time of the product to approx. 6 weeks, which must be taken into account when scheduling tests.

Further information on current legal changes can also be found on our homepage at www.tuv.com or <https://www.tuv.com/regulations-and-standards/en/>

Infobox: You can also find more information about REACH services at <https://www.tuv.com/germany/de/reach.html>

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