

Revision of DIN EN 1811:2023-04 Determination of nickel release

TÜV Rheinland LGA Products - Information

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After intensive work in various committees, the revision of DIN EN 1811 in version 2023-04 has now been published.

"DIN EN 1811:2023-04 Reference test method for release of nickel from all post assemblies which are inserted into pierced parts of the human body and articles intended to come into direct and prolonged contact with the skin;

This standard applies not only to jewelry and watch straps, but also to other metal products that come into direct and prolonged contact with the skin, such as metal parts of clothing and shoes, mobile phones or belt buckles.

The draft, which has only been slightly amended, has been available since November 2021 and is to be applied in the final version with the current publication without further transition periods.

Many of the changes published in the draft have already been implemented in practice and have been taken into account by customers when performing tests.

The standard does not apply to the testing of spectacles, where nickel resistance is determined according to DIN EN 16128:2016-02.

CHANGES IN THE MEASUREMENT OF THE SURFACE IN CONTACT WITH THE SKIN

Investigations have shown that inner surfaces, e.g. of twisted ropes (jewellery), contribute to the exposure. With this in mind, it has been decided to include the projected or unrolled surface in the calculation of surfaces in the future. This means that internal surfaces will no longer be taken into account.

As a result, for example, when testing watch straps that are hollow on the inside or made of braided material (mesh straps, see picture on the right), the surface area used to calculate nickel release is significantly smaller and the measured value ($\mu\text{g}/\text{cm}^2/\text{week}$) is larger.

For watch straps, for example, this can lead to differences of a factor of 3-5, in extreme cases (articles made of twisted or braided fine wire) up to a factor of about 20.



The same applies to other jewellery with open, internal surfaces, e.g. rings with stones in settings, knot-like or braided jewellery.

In summary, the situation is such that no action is required for products that contain no or little amount of nickel ("nickel-free electroplating") and thus release nickel in undetectable quantities. In the case of products that release measurable levels of nickel according to the currently applicable standard, there may be a need for action.

TESTING OF WATCHES

The sampling and disassembly of watches and watch straps is more clearly described in the updated standard. It is now made clear, for example, that internal parts which are difficult to access (e.g. bars in watch straps) are no longer removed or covered with varnish. These parts thus contribute to the nickel release.

This can lead to different, mostly higher findings than according to the currently valid standard.

ACTION NOTES

Due to the changes in the calculation of the surface area for products with internal surfaces, there is a risk that the release of nickel under the new version of the standard will be calculated at significantly higher levels. Re-testing appears to be appropriate if nickel was detected in relevant quantities below the limit when measured according to the now no longer valid standard.

Examples of products where these changes may occur are watch bands, mesh watch bands, braided watch bands, and twisted, knitted, braided, rope-like materials made from single strands.

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/>.

Further technical information can be obtained from:

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