Für Mensch & Umwelt

As of 25/02/2020

Frequently asked questions

Testing and certification practice for products in contact with drinking water: implementation of the evaluation criteria and the recommendation for attestation of conformity

The following list of frequently asked questions reflects some of the questions received by UBA about the drinking water hygiene regulation documents that followed on from the work done by testing and certification bodies.

German Environment Agency
Section II 3.4
Heinrich-Heine-Str. 12
D-08645 Bad Elster

https://www.umweltbundesamt.de/en

Question 1:

How are conversion factors F_c and thus risk groups assigned to the products?

Answer:

F_c for pipes and hoses are determined based on the inner diameter. If products with different diameters are grouped together for certification, the smallest inner diameter shall be used for testing and evaluation.

With the exception of pure gaskets for pipes, all other products fall into the category of fittings. These are subdivided according to the inner diameter of the pipes to which the products are connected.

Smaller F_c apply for various components of fittings depending on the proportion of surface area in contact with water.

Separate conversion factors F_c apply for containers and tanks. A differentiation is made according to whether the tank is used inside or outside of the drinking water installation.

Question 2:

How must components made of the same materials be combined to determine the risk group?

Answer:

The proportions of surface area of components that come into contact with water and made of the **same base polymer** or the same metallic material must be added together to determine the risk group.

Example: A fitting contains several components made of the polymer POM, which are manufactured from different precursors. The surface area proportion of each individual component is less than ten percent, the total surface area proportion of all POM components is greater than ten percent. As a consequence, the polymer is to be assigned to risk group P1 and an attestation of conformity according to System 1+ is required for each of the components made of this polymer. However, components from the same precursor can be combined for an attestation of conformity (see Question 3).

Question 3:

When can the attestation of conformity for different components made of organic materials be combined?

Answer:

Components of the same material can be combined for a common attestation of conformity if they are made from the **same precursor (specific granulate** from one manufacturer). **In addition**, it must be ensured **that processing conditions specified** by the precursor's manufacturer **are complied with**.

An attestation of conformity of the precursor is sufficient for components of risk group P2.

For components of risk group P1 an attestation of conformity for the respective manufacturer of the component is necessary.

The common attestation of conformity for components (generally combining products or components) can also extend to different purchasers or end-product manufacturers and, if all relevant requirements are fulfilled, even to different colour hues of the precursor (see Question 8/Colourants).

Question 4:

Can an attestation of conformity for a precursor or component also be obtained by the end-product manufacturer who processes or installs it?

Answer:

If the component manufacturer is not identical to the end-product manufacturer, the attestation of conformity should preferably be arranged by the component manufacturer.

In principle, however, the next processor or end-product manufacturer can also have such components or precursors certified. For this purpose, however, the necessary information on the composition of the materials used must be submitted to the certification body. In addition, the end-product manufacturer must precisely specify the production process to the supplier. The supplier must provide the end-product manufacturer with the processing parameters for each batch delivered and used to manufacture the components. This is the only way to ensure third-party monitoring for the components in product group P1 on the premises of the end-product manufacturer. The factory production control is monitored based on the documented processing parameters and the incoming goods inspection at the end-product manufacturer.

Question 5:

How can a component or a precursor from a supplier be certified if its certificates are not yet available?

Answer:

It requires close cooperation between supplier and buyer. In this context, it is possible for the buyer, being aware of the supplier's ongoing certification efforts, to submit a self-declaration for the supplier's products first. The buyer can also start their own certification efforts for their own products in which the parts supplied are to be used, even before the supplier's attestation of conformity procedure has been completed.

Question 6:

Are connecting hoses of outlet fittings to be assessed as part of the fitting or separately?

Answer:

Connecting hoses are to be considered as part of the fittings for calculating the proportion of surface area.

Irrespective of this, connecting hoses must always be tested and evaluated individually, equivalent to pipes. A conversion factor F_c = 20 d/dm applies to them.

Question 7:

Can an attestation of conformity also be issued for a component assembly?

Answer:

A component assembly comprises various pre-assembled components that are used in end products (e.g. a cartridge in an outlet fitting). Component assemblies can be obtained from upstream suppliers.

The proportion of surface area in contact with water in the end product that is installed by an installation company decides the component's risk group. Nevertheless, an attestation of conformity can also be issued for component assemblies. However, the attestation must show the requirements to be met or the restrictions on use (in particular the maximum proportion of surface area) in the end product. The materials used and their surface area proportions in the supplied product must always be communicated to the end-product manufacturer.

Question 8:

How to deal with checking the requirements for colourants with regard to different colour hues?

Answer:

If the use of different colourants does not make it necessary to check additional restrictions concerning migration, product tests of colour variants can be limited to checking the colour hue in migration waters.

KTW BWGL (Evaluation criteria for plastics and other organic materials in contact with drinking water) requires the EN ISO 7887:2012-04 / Method C (410 nm) to be used for checking the colouring parameter. It is the certification body's responsibility to decide if other methods of determining the release of colouring substances can be used. In this case, the certification body must be able to provide evidence that the method is equivalent to the determination according to KTW BWGL.

Evaluating the colourants formulation by the certification authorities is of great importance since the masterbatch can vary considerably, even if the colour is the same. The requirements for colourants according to the KTW evaluation criterium 5.4.2 must be observed.

Question 9:

How can the quality-assured sampling of test specimens be ensured if test specimens can be taken by manufacturers and sent to the inspection body within the simplified conformity procedure (otherwise a task of the certification body or inspection body)?

Answer:

The simplified conformity attestation procedure can be applied to components in risk groups P2 to P4. The recommendation on attestation of conformity does not currently provide for any third-party monitoring at the manufacturers' premises for these components and leaves the responsibility for sampling the test samples with the manufacturers.

The production of specially manufactured test samples is of crucial importance for the attestation of conformity of precursors (plastic granulates). For this reason, the production of test samples should be monitored within the scope of an inspection.

Question 10:

Why does UBA recommend chrome-plated fittings should only be certified if nickel release has been tested and evaluated?

Answer:

Pre-coating with nickel, which is necessary for chromium-plating the fittings with regard to galvanisation, can lead to nickel scattering on the inner surfaces of the fitting in contact with drinking water. As a consequence, stagnant water in such fittings can in some cases considerably exceed the nickel limiting value of 20 µg/l of the drinking water ordinance in the outflowing first approx. 0.2 litres. To ensure that chrome-plated fittings comply with the limiting value for nickel in drinking water, they must be subjected to a lengthy and costly long-term test. It has not yet been possible to develop an equivalent short-term test to assess nickel release.

This means that a European standardised complex test method for determining nickel release from fittings (DIN EN 16058) exists but is currently an unsatisfactory situation since it cannot be used to test all fittings because of the high costs involved. For this reason, the German Environment Agency has published test criteria (see below) but has not included them as components into the binding evaluation criteria for metallic materials in contact with drinking water.

One possibility to reduce nickel release is the so-called "plugging". In this method, all openings in the fitting are closed by hand in order to minimise nickel scattering on the inner surfaces. The compliance with the nickel limiting value can be confirmed in a certification procedure for products of manufacturers who plug their fittings. For this purpose, a sample

fitting must be selected and tested according to DIN EN 16058 and the production process must also be monitored.

Other technical options for reducing nickel scattering are also conceivable, that is why "plugging" cannot be made mandatory for certification.

Even though the UBA evaluation criteria for metallic materials do not regulate nickel release from chrome-plated fittings in a mandatory way, the limiting value for nickel in the Drinking Water Ordinance still applies. For this reason, the German Environment Agency advocates that chrome-plated fittings should not be certified if they have not been tested and evaluated for nickel release.

If nickel release has not been tested and evaluated according to DIN EN 16058, it is the manufacturer's responsibility to confirm compliance with the nickel limiting value and the other requirements under drinking water law in the form of a self-declaration (manufacturer's declaration). However, this cannot result in a relevant product certification.

The evaluation criteria of nickel release for the test results determined as per DIN EN 16058 and further explanations on this problem can be found in the UBA leaflet 'Nickel release from chrome-plated drinking water taps and other components' on the German Environment Agency's website under the topic of 'Distribution of Drinking Water':

https://www.umweltbundesamt.de/en/topics/water/drinking-water/distributing-drinking-water

or direct at:

https://www.umweltbundesamt.de/sites/default/files/medien/374/dokumente/uba-info_nickelabgabe_von_verchromten_trinkwasserarmaturen_und_anderen_bauteilen_en.pdf

Question 11:

Is it possible that the transitional period for the changeover from guidelines and recommendations to evaluation criteria will be extended or that the legally binding nature will be suspended?

Answer:

The duration of the transitional period of 2 years from the date of stipulation until the legally binding nature of the notified and published evaluation criteria is set out in Section 17(3) of the Drinking Water Ordinance (TrinkwV), which is a federal law. It will not be possible to change, extend or suspend this period before the date when the KTW evaluation criteria will become legally binding.

Question 12:

May products be sold when their test certificates are invalid or have expired or their declarations are unclear?

Answer:

The Drinking Water Ordinance (TrinkwV) regulates the use of materials in contact with drinking water. From the date of the evaluation criteria's legally binding nature (2 years after publication), only products that comply with the evaluation criteria may be used for new installation or maintenance of water supply systems.

The TrinkwV thus does not regulate the sale of products.

Question 13:

May fittings, pipes etc. be used in drinking water installations if no valid certificates are available?

Answer:

Section 17(2) Drinking Water Ordinance (TrinkwV) prohibits the use of products in drinking water installations (and also in the field of drinking water abstraction and -supply) that do not meet the drinking water hygiene requirements set out by the relevant regulatory documents. Relevant certificates based on testing and evaluation by a certification body in accordance with the evaluation criteria, can prove the suitability of a product for drinking water hygiene. However, certification is not mandatory (see Question 14).

Section 17 of the Drinking Water Ordinance (TrinkwV) specifically uses the term "use" in connection with the construction and maintenance (servicing, repair) of drinking water installations. However, there is no obligation to replace existing installations. The background being that a compulsory replacement of already existing installations or parts thereof would represent an unreasonable hardship if the requirements for drinking water quality are met. However, if quality parameters are exceeded, the causes of the exceedance can be ordered to be eliminated as part of a hygiene check, if necessary, by renovation or replacement of unsuitable components in drinking water installations. If consumers of drinking water of inferior quality suffer health impairments that can be traced back to hygienically improper installation components, the owner or operator of the drinking water installation is also subject to liability issues.

Question 14:

Is certification compulsory for products in contact with drinking water in Germany?

Answer:

The requirements of the UBA evaluation criteria only apply to products that are newly installed as part of a new installation or the maintenance of water supply systems.

According to the Drinking Water Ordinance (TrinkwV), there is no obligation for the products to be certified. In order to use products, however, in any case a declaration of conformity to the requirements of the UBA evaluation criteria is required by the manufacturers. They should refer to a valid attestation of conformity by an external certification body. If this is not the case, in case of doubt the manufacturer must present the results of the relevant compliance tests with the requirements of the UBA evaluation criteria.

Question 15:

What is the difference between an approval and a certification?

Answer:

An approval is issued by a government body, while a certification is carried out by an organisation under private law.

In connection with materials in contact with drinking water, the German Environment Agency issues approvals for metallic materials and source materials for enamels, ceramic materials and organic materials, which are then included in the relevant positive lists of the evaluation criteria.

Products are not envisaged to be approved by a government body. However, the conformity of products with the requirements of the UBA evaluation criteria can be proved by a certificate issued by an accredited certifier.

Question 16:

Are European certificates such as WRAS or ACS equivalent to certificates as per the German evaluation criteria?

Answer:

No. Test conditions and requirements for obtaining an NSF, WRAS or ACS certificate are different to the relevant requirements of the UBA evaluation criteria. For this reason, equivalence cannot be accepted for these certificates across the board.

Germany, France, Netherlands, the United Kingdom and Denmark have agreed to harmonise tests and requirements for materials within the framework of the 4MS Initiative (4MSI). For this purpose, suitable regulation proposals (4MSI Common Approaches) have been developed, which have been fully implemented in the evaluation criteria by Germany. If these proposed regulations are also implemented in other countries, a general equivalence of the relevant certificates can be declared.