

Triclosan – partial ban, widely used

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The antimicrobial chemical used as a preservative in cosmetic products has been criticized for a long time already. Our expert explains why and gives an update on the current legal situation.

Triclosan, alias irgasan, alias 5-chloro-2-(2,4-dichlorophenoxy)-phenol, has been hitting the headlines for some time now. The antimicrobial chemical is used as a preservative for aqueous cosmetic products. It ensures product safety. On the other hand, it reduces the colonization of germs on the skin and thus eliminates undesired odours.

Statutory regulations

The EU Regulation 2014/358, dated 9th April 2014, restricts the use of triclosan to products that are washed off after application (rinse-off products). This means that the use of triclosan as a preservative in body lotions and skin care creams is no longer permitted. Existing preparations were allowed to be sold until 30th July 2015. Triclosan still is an ingredient in rinse-off products such as tooth pastes, hand and body soaps including shaving foams, shampoos, shower gels and liquid soaps. Exceptions also apply to facial powders and concealers. It is incomprehensible why triclosan still can be used in deodorants since the armpit skin is particularly receptive, especially right after shaving. Also medical disinfection products are not yet affected by the ban since these products do not fall within the scope of the EU regulation.

Triclosan in everyday products

Still little known is the fact that the compound also is used to prevent microbial pollution in a multitude of everyday products. Some examples are:

- Antimicrobial coatings on textiles, particularly on textiles for sport activities
- plastic toilet seats
- antimicrobial foils and covers, as for instance for mattresses
- shoes
- plastic housekeeping accessories
- coated furniture boards
- plastic toys

Even extemporaneous preparations for dermatological prescriptions to treat inflammatory skin diseases and infections still contain the substance which then finally ends up in the hands of patients. These formulations are subject to pharmaceutical legislation wherein there are no restrictions on the use of this substance yet.

Ubiquitous – in spite of partial ban

In other words: triclosan still is ubiquitous, notwithstanding that it has been partially banned. The good news is that the substance can be identified in cosmetic products on the INCI list. Bad news: the packaging of a newly bought toilet seat informs on the antimicrobial substance contained however, unlike the cosmetic dispenser, the toilet seat in use does not necessarily provide information once the plastic cover is removed. The same applies to all the other items cited above.

In its statement 031/2009, dated 12 June 2009, the Federal Institute for Risk Assessment (Bundesinstitut für Risikobewertung – BfR) already has supported the ban on triclosan in food utensils. The mentioned utensils in particular are packaging with antimicrobial coatings that come into contact with food.

Chemical characteristics

When exposed to thermal stress or sun radiation (UV radiation), triclosan tends to form highly toxic halogenated dibenzodioxins and dibenzofurans. Due to the widespread use of the substance, as already mentioned, and the respective waste products, it cannot be predicted at which point the degradations will occur. Another problem is the degradation in sewage plants where the substance ends up as a component of hygiene products such as soaps. Frequently the substance only partly degrades or other persistent and ecologically harmful, chlorinated hydrocarbons will form. These then are found in the absorbing layers of the soil, such as for instance clay. Even clay containing healing earths are contaminated by now, as could be measured by the author.

On the one hand, it is advertised that the anti-microbial and pesticidal activity of triclosan prevents allergies, as for instance in mattress covers (mites!); on the other hand, the fact is suppressed that especially chloroaromatic disinfectants and preservatives show a high allergic potential.

Increased incidence of allergies

Hygiene plays an essential role in our civilization. Sources of infection such as a missing sewer system and impure drinking water were successfully eliminated. Some hygiene routines however are being over-exaggerated today. There is no sense in sterilizing and disinfecting the whole environment of babies and toddlers right at the time when their immune system is building up. The consequence is a significant increase of allergy cases. Also the individual antibiotic resistance will be facilitated this way. Triclosan is suspected to be a substantial factor in this respect.

Alternative preservatives

The above-mentioned also applies for aromatic and halogen containing preservatives and disinfectants. Formulations without preservatives, as far as possible, are the best protection against adverse effects. Such formulations are easily possible in the skin care field. There is a variety of alternative non-allergenic substances with preservative effects, as for instance alcohol and glycols. That is why they are not listed in the annex V of the Cosmetic Regulation. All the listed preservatives show allergic potential.

Controversially discussed studies

The EU wide ban on triclosan in leave-on products is based on studies which are still controversially discussed. The following questions are asked again and again:

- Are the studies representative?
- Are the statistical methods and data in the studies irreproachable?
- Can animal tests be translated to human applications?
- What is the value of in-vitro studies?
- Can the partly artificial parameters be translated into everyday reality?

Discussed in this context are effects on hormonal activity, impacts on the fertility, myasthenia, and a carcinogenic potential. A cause for concern is that it is found in human breast

milk. The significant question regarding the No Observed Adverse Effect Level (NOAEL) threshold for humans has not yet been answered which means, that the highest possible dose without generating toxic effects has not yet been determined. This is why a final threshold value has not yet been established. Hence the final ban on triclosan is not yet in sight. It is good to hear that another highly allergenic preservative, methylchloroisothiazolinone, also has been restricted to rinse-off products. It is still as widely used as triclosan, namely in household and textile detergents as well as in building material and emulsion paints.

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