

Plasticisers on the loose...

Phthalates make plastics more elastic. However, some phthalates can also have adverse health effects. Therefore, their use is now highly regulated.

They are meant to make plastics which are normally hard and brittle elastic and flexible: using phthalates, materials such as PVC can be processed to make products such as flooring, films, or hoses. For that reason, phthalates were produced in large quantities and put into many other products over the past decades. These included textiles, toys, lids for jars, as well as paints, glues, and solvents. Now, however, the use of many phthalates in consumer products has been banned or is at least highly regulated. This is because phthalates are not firmly bonded to plastics and other materials. They can be released from the materials and enter the environment or the food chain. In studies, phthalates and their degradation products are therefore frequently found in urine samples. In the body, some of them can have negative health impacts if ingested in sufficient quantities.

EFFECTS IN ANIMAL STUDIES

Adverse health effects due to phthalates have been shown in animal studies. In rats and mice, for example, researchers found that certain phthalates influence the formation of the male sex hormone testosterone. This suggests that the fertility of male animals can be impaired by phthalates. The damage was already noticeable while the reproductive organs were still developing in unborn animals. Because these phthalates impair the hormonal system, they are also termed "endocrine disruptors". Although results from



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No need to worry about sharing bathwater with rubber duckies made in accordance with the legal requirements.

animal studies cannot be directly transferred to humans, it may be assumed that similar effects might occur in humans, too.

TRACES OF PHTHALATES IN URINE SAMPLES

In early 2024, traces of phthalates found in urine samples made the headlines: the State Office for Nature, Environment and Consumer Protection in North Rhine-Westphalia as well as the UBA, Germany's Federal Environmental Agency, had discovered

traces of the substance mono-n-hexylphthalate – MnHexP for short – in urine samples from children and adults. This substance can result as a degradation product from the metabolisation of various phthalates. However, the use of these substances is highly restricted. In the meantime, traces of a phthalate that can be broken down in the body to MnHexP have been detected in sunscreen and other consumer products. At the time of going to press, the investigations into the background were still ongoing.

EFFECTS ONLY ABOVE A CERTAIN CONCENTRATION

In general, though, adverse health effects from the various phthalates were only found when the animals in the studies were exposed to relatively high phthalate concentrations over a longer period of time. By comparison, the examined urine samples showed a far lower intake by consumers. Therefore, negative impacts on consumer health are not expected based on the current state of the research. Nevertheless, phthalates are undesirable substances in the body and their intake should there-

fore be kept to a minimum. In order to protect consumer health, the BfR is an active participant in various national and international committees on this issue. Also based on the BfR's assessments, the use of hazardous phthalates has been severely curtailed over the past years. Monitoring studies have since demonstrated far lower concentrations of phthalates and their degradation products in urine samples than 20 years ago. However, the cases from early 2024 show that the BfR's work regarding phthalates is far from over. —

 More information



BfR information
"Phthalates"

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Phthalates escape into the environment and then enter the body

Now, their use in consumer products has been banned or is at least heavily regulated.

