

# Chloropropanols in food contact materials and toys (picture books for young children's)

TÜV Rheinland LGA Products - Information

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For some years now, the release of chloropropanols in food contact materials made of paper has been the subject of repeated authority complaints in Germany.

Chloropropanols include the substances 3-chloro-1,2-propanediol (3-MCPD) and 1,3-dichloro-2-propanol (1,3-DCP). 1,3-DCP is classified as a category 1B carcinogen under CLP Regulation (Regulation (EC) No 1272/2008), and 3-MCPD is classified as possibly carcinogenic to humans.

As part of the German nationwide monitoring plan (Bundesweiten Überwachungsplans - BÜp) 2020, the issue was taken up and food contact materials made of paper were checked for compliance with the requirement of the BfR recommendation on the transfer of chloropropanols.

For both 3-MCPD and 1,3-DCP, restrictions set in the XXXVI Recommendation of the BfR on paper, board and cardboard for food contact with regard to the transitions into water extracts simulating the real transitions into food.

According to the BfR recommendation, 1,3-DCP must not be detectable in the water extract (with a detection limit of 2 µg/l), for 3-MCPD a guideline value of 12 µg/l applies in the same extract.

The chloropropanols 3-MCPD and 1,3-DCP may be formed by hydrolysis from epichlorohydrin, which is introduced via wet solidification agents. Wet strength agents prevent paper food contact materials from dissolving upon contact with a liquid or wet food. Highly wet-strengthened food contact papers include kitchen rolls, muffin tins, and drinking straws.

Recently, products such as plates, bowls and cups without coating, in which sugarcane or bagasse is highlighted as raw material, are also increasingly encountered in the market.

The results show that 38 (14.8 %) and 17 (6.6 %) of the 256 samples examined did not meet the requirements of the BfR recommendation on the release of 3-MCPD and 1,3-DCP, respectively. The BfR recommendations were not complied with particularly frequently when it came to drinking straws.

[LINK TO THE DRAFT PAPER FROM THE BÜP REPORT 2020](#)

Source: <https://www.bvl.bund.de/>

[Report to Program 3.3 - BÜp 2020 \(PDF\); German only](#)

## NOTE

With this technological background, the use of wet-strengthening agents in books made of paper, especially for young children, can also be assumed, since the material is not supposed to dissolve too quickly when children put it in their mouths.

Thus, these children's books and other paper toys for young children present a similar problem: a predictable ingestion of chloropropanols when children put these playbooks in their mouths.

Corresponding investigations were carried out by the Chemical and Veterinary Investigation Office (Chemische und Veterinäruntersuchungsamt) Münsterland-Emscher-Lippe and showed very high levels of extractable chloropropanols in some cases.

## RECOMMENDATION

It is therefore recommended to comply with the requirements of the XXXVI Recommendation also for papers in toys for children under 3 years of age (e.g. children's books). This also follows the XLVII Recommendation of the BfR on toys made of plastics and other polymers as well as paper, cardboard and paperboard.

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

Further technical information can be obtained from:

**TÜV Rheinland LGA Products GmbH**  
Technical Competence Center Softlines

Dr. Ansgar Wennemer  
[Wennemer@de.tuv.com](mailto:Wennemer@de.tuv.com)

Am Grauen Stein  
51105 Cologne  
Germany

Steffen Tuemptner  
[Steffen.Tuemptner@de.tuv.com](mailto:Steffen.Tuemptner@de.tuv.com)

Alboinstr. 56  
12103 Berlin  
Germany

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