

DPHP detected in toys: BfR assessing the risk of the softener

BfR Opinion No. 004/2012 of 28 June 2011

Di-2-propylheptyl phthalate (DPHP) is used as a plasticizer in PVC plastics, which are in turn used for the manufacture of products such as cable sheathing, and in vehicle interiors. The monitoring authorities of the federal laender have now detected DPHP in children's toys too, however. It is possible that some toy manufacturers are using this plasticizer more often because its use has not been restricted by the REACH regulation up to now.

The Federal Institute for Risk Assessment (BfR) has evaluated the DPHP concentrations in four toys handed over to them by the authorities of the federal laender. The concentrations are between 10.1 and 48.2 weight % DPHP. Children can ingest DPHP through the mouth and skin. The possible health risks for children with an estimated exposure of up to 135 µg/kg body weight per day were assessed.

If only exposure to DPHP from toys is considered, no health risk results on the basis of the *No Observed Adverse Effect Levels* (NOAEL, highest dosage at which no toxic effect occurs determined in experiments with animals) and a safety factor of 100. Children do not come into contact with the plasticizer solely through toys, however, because it is also contained in other products. To take this into account, an additional safety factor of 10 is normally used. The safe intake dose calculated for toys in this way is 40 µg/kg b.w./day. This value is sometimes exceeded with the exposure levels calculated for the examined toys. As the substance has been proven in experiments with animals to have a damaging effect on the thyroid and hypophysis, the BfR considers it necessary to reduce the levels of DPHP to which children are exposed through toys.

The full version of this BfR Opinion is available in German on <http://www.bfr.bund.de/cm/343/dphp-in-spielzeug-nachgewiesen-bfr-bewertet-risiko-des-weichmachers.pdf>