

MEMORANDUM

To: Chemicals of High Concern to Children Workgroup
From: Mark Levine, MD, Commissioner of Health
Re: Chemicals of High Concern to Children Chemical Review
Date: June 30, 2017

Pursuant to 18 V.S.A. § 1774, the Commissioner of Health recommends for the Working Group's consideration two chemicals of high concern to children in children's products for review by the Working Group. This recommendation is based on the degree of human health risks, exposure pathways, and impact on sensitive populations presented by a chemical of high concern to children.

Question posed to the workgroup:

Do Di-2-ethylhexyl phthalate (DEHP; CAS 117-81-7) and dibutyl phthalate (DBP; CAS 84-74-2) meet the criteria for regulating the sale or distribution pursuant to 18 V.S.A. § 1774 (d) states?

Method:

Vermont Department of Health began collecting disclosure data for children's products on January 1, 2017. On June 6, 2017, the function set data was downloaded and evaluated. The function set includes the chemical, manufacturer name, the function of the chemical in the product, the component where the chemical is found, the concentration of the chemical in the component, and the brick. 3,576 function set reports were in the data set. The data set was sorted by frequency of chemical. The top 11 most frequently reported chemicals accounted for 78% of reports received.

DEHP and DBP are currently banned above 0.1% in children's toys and childcare articles by the U.S. Consumer Product Safety Commission (CPSC). The definition of a "children's product" in Vermont is broader than the definition of children's toys and childcare articles under CPSC. Vermont's threshold for banning would logically be 0.01%, so that the presence of the chemicals as contaminants below the banned level would not trigger reporting to the department. Contaminant reporting is currently required if the chemical is present over 100 ppm. Reporting would be required if the chemicals are intentionally added above the PQL (5 ppm). Thus, a ban of DEHP and DBP in Vermont would apply to more products and enforce a lower threshold than the current CPSC ban.





Vermont data:

Of the 76 reports for DEHP, 74 (97%) reported the presence of DEHP less than 0.1%, the threshold for the current CPSC ban. Of the 76 reports for DEHP, 37 (49%) reported the function of DEHP as a contaminant.

Of the 70 reports for DBP, 67 (96%) reported the presence of DBP less than 0.1%, the threshold for the current CPDC ban. Of the 70 reports for DBP, 35 (50%) reported the function of DBP as a contaminant.

Summary of Chronic Hazard Advisory Panel and Phthalates and Phthalate Alternatives (CHAP):

DEHP and DBP are antiandrogenic phthalates. Exposure to phthalates during pregnancy resulted in “phthalate syndrome,” characterized by male developmental toxicity. Effects in humans may be reduced anogenital distance and neurodevelopmental toxicity in offspring. There is significant concern for a cumulative effect of exposure to not only DEHP and DBP, but other phthalates that replaced them which are also antiandrogenic. Exposure through diet is estimated to be significant for pregnant women and toddlers. For toddlers, the next greatest sources of exposure are mouthing objects and house dust ingestion (Ginsberg, 2016). For breastfed infants, the primary pathway for exposure is expected to be mouthing objects (Ginsberg, 2016). Thus, reductions in DEHP and DBP in products that infants and toddlers mouth, and that can contribute to house dust, could directly lead to reductions in exposure to these vulnerable populations.

