Makarow, Irina (ECY)

From: Adenuga, Moyinoluwa D <moyinoluwa.d.adenuga@exxonmobil.com>
Sent: Thursday, March 3, 2022 3:32 PM
To: Makarow, Irina (ECY)
Cc: Tamboer, Lauren (ECY); Fanning, Elinor W (DOH); Niemi, Cheryl (ECY); Stump, Sascha (ECY)
Subject: RE: Phthalate Action Plan 3-3-2022 Comments

Hello Irina,
In reviewing today's discussion further, there was a correction I needed to make:

a) Phthalate use in pesticides – Mention was made today that phthalates are used in pesticides (which may explain a further exposure route into food). This is not correct. This error is likely due to the presence of DINP and DIDP on the EPA website listed as pesticide inerts. See links here and here. However, if you look closely at both links, the listings state that both phthalates are designated NF or for "Nonfood Use Only". This means neither can be used as a pesticide in plants that can be consumed as food. Rather, these phthalates are used as carriers/inerts for antimicrobials/anti-fungal formulations for PVC plastics (these applications are regulated under FIFRA), especially where those phthalates are also used as plasticizers in the PVC formulation. You may note that 67 chemicals were listed for initial Tier 1 Screening under the US EPA EDSP list 1 a couple of years ago. List 1 was made up of pesticide active ingredients and HPV chemicals used as pesticide inerts. No phthalate was listed, even though some were HPV chemicals at the time.

A few other comments that piqued my interest:

a) Disproportionate exposure to phthalates in minority populations – This was mentioned a couple of times today. However, there is no evidence to support this. Statistical analysis of phthalate exposures in the CDC NHANES dataset does not show statistically significant differences between ethnic groups in the US population (with the exception of a tiny number of outliers).

b) Off gassing as a key route of exposure to phthalates from building and construction materials – I think this was mentioned with respect to flooring applications. Off gassing is a negligible route of exposure to phthalates. Phthalates in the high molecular weight range have very low vapor pressures (e.g. DINP vp is 5.4×10^{-7} mmHg). Using theoretical standard temperature and pressure calculations, the maximum saturated concentration of DINP possible in the air is ~0.01 mg/m^3 (this calculation assumes I simply poured DINP on the floor at room temperature and left it to evaporate). Logically we would expect off gassing from a PVC article to be several orders of magnitude less.

   For lower molecular weight phthalates like BBP, DBP or DIBP, **total human exposures** at the 95th percentile, based on the latest NHANES dataset we were able to review (2015/2016) is <4 ppb combined. Off gassing is unlikely to be a significant source of exposure to all three.

Please let us know if we can help clarify any other related issues.

Best regards,
David

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