BASF

The Chemical Company

Steven J. Goldberg
Vice President & Associate General Counsel

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Michael Babich
Directorate for Health Sciences,
Consumer Product Safety Commission
Bethesda, MD 20814

RE: Failure to Consider Industry Data on Phthalates and Phthalate Substitutes
Chronic Hazard Advisory Panel (CHAP) on phthalates and phthalate substitutes

Dear Dr. Babich:

I was very surprised to learn from Dr. Pat Harmon, BASF Corporation's Industry Manager for Industrial Petrochemicals, that members of the Chronic Hazard Advisory Panel on Phthalates and Phthalate Substitutes ("CHAP") appear to be unaware of the large amount of data submitted over the past two years by BASF Corporation and others on phthalates and phthalate substitutes. Dr. Harmon's impressions are the result of discussions that occurred during the November 2 – 4, 2011 CHAP meeting. As a result, I would like to ensure that the CHAP panel members not only are made aware of this recent data but that BASF be provided with an opportunity to discuss with the panel members whatever questions they may have after reviewing this information.

We are particularly concerned with the comments made about the lack of toxicity data for Hexamoll® DINCH™ and dipropylheptyl phthalate (DPHP). With the exception of one document, the "Oral Risk Assessment Document" (NSF International, 2007), the documents described below in Table 1 were submitted to the CHAP in 2009 and 2010 in order to provide relevant data for the assessment of these two products. All of these documents also are attached electronically as part of the email transmission of this letter and are included in the package sent via U.S. Mail.

As you know, the charge of the CHAP is to "review all relevant data . . . on phthalate and phthalate alternatives." The attached documents include the most recent and relevant data on these two products; therefore, it would be negligent for CPSC staff and the CHAP to not fully consider these data as part of their soon to be finished review. In addition, it is clear that this information meets the data requirements for the CHAP that were described in the June 3, 2010, Federal Register Notice of Meeting (Vol. 75, No. 106, **31426**). The robust summaries in the NICNAS, EFSA, and SCENIHR reports on Hexamoll® DINCH™ and the oral risk assessment by NSF International on DPHP were *developed by these organizations from their independent reviews of the full study reports* provided by BASF SE, and were not "summaries of toxicological studies prepared by chemical manufacturers." Most importantly, all of these studies are GLP compliant and were carried out under the most recent U.S., European, or OECD protocols and, therefore, are of high reliability and quality.

We also would like to point out the results of some of these studies in order to address the concerns raised during the recent meeting:

Hexamoll® DINCH™

- Developmental toxicity (rat), OECD 414 (NICNAS report, p. 39). Exposures (oral – gavage) from Day GD 6 – 19 at 0, 200, 600, and 1200 mg/kg-bw/day. NOAEL = 1200 mg/kg-bw/day for maternal and prenatal developmental toxicity.
- Developmental toxicity (rabbit), OECD 414 (NICNAS report, p. 38). Exposures (oral-diet) from Day 6 – 29 post insemination at 0, 100, 300, and 1000 mg/kg-bw/day. NOAEL = 1000 mg/kg-bw/day for maternal and prenatal developmental toxicity.
- Pre-/postnatal developmental toxicity study (rat, NICNAS report, p. 40). Exposures (oral – gavage) from GD 6 – PND 20 at 0, 750, and 1000 mg/kg-bw/day. NOAEL = 1000 mg/kg-bw/day for reproductive performance and systemic toxicity of the parental female rats. NOAEL = 1000 mg/kg-bw/day for developmental toxicity (based on the growth and development of the offspring, including sexual organ morphology and sexual maturation) for F1 progeny.
- Toxicity to reproduction – two generation study, OECD 416 (NICNAS report, p. 42). Exposures (oral – diet) continuous at 0, 100, 300, and 1000 mg/kg-bw/day. NOAEL = 1000 mg/kg-bw/day for fertility and reproductive performance for F0 and F1 generation rats of both genders.
- Effects on fetal testosterone – there are no publically available data that we are aware of; however, data presented by Dr. Earl Gray, U.S. EPA, at the July 2010 CHAP meeting indicates that Hexamoll® DINCH™ was inactive in his screening study at a "single high dose" assumed to be 750 mg/kg-bw/day (Slide #8, Effects of Mixtures of Phthalates and Other Toxicants on Sexual Differentiation in Rats, http://www.cpsc.gov/about/cpsia/chap0710.html).
- NICNAS and EFSA established tolerable daily intake (TDI) values of 0.4 mg/kg-bw/day and 1 mg/kg-bw/day, respectively, for kidney effects seen in the subchronic and chronic studies in rats, even though these particular effects are unlikely to be relevant to humans. They also determined that these TDI values were protective based on expected exposure from indirect food contact applications. (cf. NICNAS report, p. 13, EFSA p. 8). Given the lack of reproductive and developmental effects for Hexamoll® DINCH™ compared to those observed with the other products from the CHAP assessment, we believe it is reasonable to base a risk determination on these other effects since they would offer a very conservative basis for determining safe levels of exposure.
- Exposure. No biomonitoring data are available; however, method development in Germany is nearing completion. Based on our knowledge of current U.S. usage, the most likely exposures to children would be from toys and childcare articles (primarily from imported products). These exposures can of course be estimated from the range of migration rates already determined by CPSC staff (Phthalates and Phthalates Substitutes in Children's Toys – Laboratory Study, http://www.cpsc.gov/about/cpsia/chap0410.html).

Dipropylheptyl phthalate (DPHP)

- Developmental toxicity (rat), OECD 414 (NSF, p. 13). Exposure (oral – gavage) on GD 6 – 19 at 0, 40, 200, and 1000 mg/kg-bw/day. DPHP was associated with changes in fetal morphology at 1000 mg/kg-bw/day but there were no indications of developmental toxicity; the NOAEL was 200 mg/kg-bw/day for both maternal and developmental toxicity.
- Two Generation Reproduction Toxicity Study (rat), OECD 416 (Robust summary, p. 117). Exposure (oral – diet) continuously at 0, 40, 200, and 600 mg/kg-bw/day. The NOAEL for general, systemic toxicity was determined to be 40 mg/kg bw/d for the F0 and F1 parental rats, based on effects secondary to peroxisome proliferation in the liver, bones, kidneys and thyroid, observed .The NOAEL for fertility and reproductive performance for the F0 and F1 parental rats is 600 mg/kg bw/day, the highest dose tested. The NOAEL for developmental toxicity in the F1 and F2 progeny is 200 mg/kg-bw/day, based on slightly decreased pup body weights/pup weight gain in the second third of lactation. Importantly, the developmental effects do not occur in the absence of parental toxicity.
- Effects on fetal testosterone. We are not aware of any publically available data to show whether DPHP affects fetal testosterone levels; however, we do understand that EPA (Gray) will include DPHP in their ongoing screening studies with phthalate and other chemicals. We believe that it is important for CPSC and the CHAP to include these results if they are available.
- Exposure. We are not aware of any biomonitoring data for DPHP; however, method development in Germany is nearing completion. In addition, as noted in the comments submitted to CPSC on 10/2/2009, DPHP is unlikely to be used in toys and childcare articles since this use is not supported or promoted by BASF. Any consideration of exposure and risk from children's products as defined by the scope of the CHAP review would only be hypothetical and, therefore, not relevant to the actual use of the product in the North American market.

I would request that you submit this letter and the accompanying documents to Dr. Philip Mirkes, Chair of the CHAP, and Dr. Bernard Schwetz, Vice Chair, and that you otherwise ensure this information is made available to each of the panel members. We will expect to see this information duly referenced in the CHAP's final report to the Commission.

If you or any of the panel members have questions about the enclosed documents, please contact Dr. Raymond David, Manager of Toxicology (973 245-6858), or Dr. Patrick Harmon, Industry Manager for Industrial Petrochemicals (713-759-3087).

Sincerely yours,

Steven J. Goldberg
Vice President & Associate General Counsel, BASF Corporation

Attachments (Table 1)
cc:
Cheryl Falvey, General Counsel, CPSC
Dr. Raymond David, Toxicology Manager, BASF Corporation
Dr. Rainer Otter, Head of Regulatory Toxicology, BASF SE

Table1. Documents submitted to CPSC

Document	Original submission	Content	Links
Hexamoll® DINCH™			
Letter to CPSC. Comments on BASF phthalate alternative Hexamoll® DINCH™	1/9/2009	Detailed cover letter for documents submitted to CPSC	http://www.cpsc.gov/library/foia/foia09/pubcom/phthalates1.pdf.
European Food Safety Authority (EFSA). The EFSA Journal (2006) 395 to 401, p. 1 – 8, 12th list of substances for food contact materials	1/9/2009	EFSA assessement of Hexamoll® DINCH™ with summaries of the critical studies (based on full study reports)	http://www.efsa.europa.eu/EFSA/efsa_locale-1178620753812_1178620770921.htm.
National Industrial Chemicals Notification and Assessment Scheme (NICNAS). Full Public Report, 1,2-Cyclohexanedicarboxylic acid, 1,2-diisononyl ester ('Hexamoll® DINCH'), File No. STD/1259, August 2008	1/9/2009	NICNAS assessment with robust summaries of the full study reports.	http://www.nicnas.gov.au/publications/car/new/std/stdsumm/std1000sr/std1259.asp
Scientific Committee on Emerging and Newly Indentified Risks (SCENIHR). Opinion on the Safety of Medical Devices Containing DEHP-Plasticized PVC or Other Plasticizers on Neonates and Other Groups Possibly at Risk, 6 February 2008	1/9/2009	SCENIHR assessment of DEHP and other plasticizers in medical devices. Other plasticizers discussed on pp. 41 - 44; Hexamoll® DINCH™ specific discussion on pp. 80 - 82. (based on review of full study reports)	http://ec.europa.eu/health/ph_risk/risk_en.htm.
Robust REACH summary for Hexamoll® DINCH™	1/6/2010		http://www.cpsc.gov/about/cpsia/chapmain.html
Dr. Rainer Otter's submission letter	7/7/2010		http://www.cpsc.gov/about/cpsia/chap0710.html
Comments by BASF SE on the "Review of Exposure and Toxicty Data of Phthalate Substitutes"	7/7/2010	Comments on Versar Inc. report	http://www.cpsc.gov/about/cpsia/chap0710.html
Advice on the Use of Alternative Plasticiser in Toys and Childcare Articles	7/7/2010	Evaluation by the Dutch competent authority	http://www.cpsc.gov/about/cpsia/chap0710.html
Dipropylheptyl phthalate (DPHP)			
Robust REACH summary for DPHP	1/9/2010		http://www.cpsc.gov/about/cpsia/chapmain.html and also see ECHA website to search by CAS#: http://apps.echa.europa.eu/registered/registered-sub.aspx#search
Additional comments to CPSIA Section 108, BASF Corporation. Phthalate definitions and Section 108 of the Consumer Product Safety Improvement Act (CPSIA)	10/2/2009	Comments on the structure and isomer composition of DPHP.	
Di-(2-propylheptyl) phthalate Oral Risk Assessment Document, NSF International, 2007	11/11/2011	Oral risk assessment for NSF/ANSI Standard 61 based on full study reports (all studies except for the more recent 2-generation study were included).	