



19 June 2012

Dr. Michael Babich  
Consumer Product Safety Commission  
4330 East West Highway  
Bethesda, MD 20814

Via electronic mail to: [MBabich@cpsc.gov](mailto:MBabich@cpsc.gov)

Dear Dr. Babich:

I write on behalf of the High Phthalates Panel (HP Panel) of the American Chemistry Council. The HP Panel represents North American manufacturers of diisononyl phthalate (DINP) and diisodecyl phthalate (DIDP) which are products included in the Chronic Hazard Advisory Panel (CHAP) on Phthalates review. During the February 2012 meeting of the CHAP and the teleconference on April 10, 2012 there were preliminary discussions concerning the CHAP's recommendations to the Commission on DIDP. We believe it is instructive to review the actual language of the European Union Risk Assessment Report on DIDP concerning DIDP developmental toxicity studies, including the findings of the European Union Risk Assessment Report on DIDP related to skeletal effects.<sup>1</sup>

In summarizing the studies by BASF, 1995; and Hellwig et al., 1997, the Report states:

There was no evidence of severe developmental toxicity only significantly [sic] increases of skeletal variations (supernumerary cervical and rudimentary lumbar ribs) on a per litter basis at the high dose. Rudimentary ribs are a common findings in rat fetuses, and should not be regarded as or associated with malformations, but may only be related to transient maternal stress. It should be noticed that supernumerary ribs were located in the cervical region which is less common (Waterman et al., 1999), but the biological significance of cervical supernumerary ribs remains uncertain.<sup>2</sup>

Additionally, Chapter 12.18, Methods for Detection of Developmental Toxicity, from Comprehensive Toxicology, Volumes 1-14 (2<sup>nd</sup> Edition), Elsevier (2010)<sup>3</sup> Section 12.18.3.2.5, Skeletal examination, includes a useful discussion of common skeletal findings in standard developmental toxicology bioassays:

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<sup>1</sup> ECB (2003b). European Union Risk Assessment Report Vol. 36: 1,2-benzenedicarboxylic acid, di-C9-11- branched alkyl esters, C10-rich and di-"isodecyl" phthalate (DIDP). Report no.: EUR 20785 EN, European Chemicals Bureau, European Communities, available at: <http://publications.jrc.ec.europa.eu/repository/handle/11111111/5459> (E.U. Risk Assessment Report).

<sup>2</sup> E.U. Risk Assessment Report on DIDP at 172-73.

<sup>3</sup> McQueen, Charlene A.; Bond, James; Ramos, Kenneth; Lamb, James; Guengerich, F. Peter; Lawrence, David; Walker, Mary; Campen, Matthew; Schnellmann, Rick; Yost, Garold S.; Roth, Robert A.; Ganey, Patricia; Hooser, Stephen; Richburg, John; Hoyer, Patricia; Knudsen, Thomas; Daston, George; Philbert, Martin; Roberts, Ruth (2010). Comprehensive Toxicology, Volumes 1-14 (2nd Edition). Elsevier.

Online version available at:

[http://www.knovel.com/web/portal/browse/display?EXT\\_KNOVEL\\_DISPLAY\\_bookid=3459&VerticalID=0](http://www.knovel.com/web/portal/browse/display?EXT_KNOVEL_DISPLAY_bookid=3459&VerticalID=0).



The interpretation of several skeletal abnormalities, namely delayed ossification, supernumerary number, and wavy ribs, poses some problems. These abnormalities occur at a high background in control animals and are observed frequently in a dose-related manner (Daston and Seed 2007). . . . Other common skeletal findings in standard developmental toxicology bioassays include supernumerary rib (SNR) or accessory ribs either lumbar (LR) or cervical (CR). The question always raised is whether the SNR is a malformation or a variation. Wickramaratne (1988) showed that SNRs in rats are a result of developmental delays and not considered to be a manifestation of a teratogenic event.<sup>4</sup>

If the CHAP requires further information, please do not hesitate to contact me at (202) 249-6711 or [Eileen\\_Conneely@americanchemistry.com](mailto:Eileen_Conneely@americanchemistry.com).

Very truly yours,

*Eileen Conneely*

Eileen Conneely  
Manager, High Phthalates Panel  
Director, Chemical Products and Technology  
Division

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<sup>4</sup> Id. at 276. See also Chernoff N, Rogers JM (2004). Supernumerary ribs in developmental toxicity bioassays and in human populations: incidence and biological significance. J. Toxicol. Environ. Health B. Crit. Rev.; 7(6), 437-49.

