

2019 SOT Conference
Poster: Risk Assessment I
Tuesday March 12, 2019
9:15AM-4:30PM

Risk Assessment to Determine Proposition 65 Compliance for a Consumer Product: Diisononyl Phthalate.

This risk assessment estimated the potential consumer exposure to diisononyl phthalate (DINP, CAS 28553-12-0) associated with a foam material present inside an upholstery cushion. The focus of the evaluation was California's Proposition 65, which requires product warning labels if products contain certain chemicals above risk-based limits. DINP has been listed as known to the State of California to cause cancer under Proposition 65. The No Significant Risk Level (NSRL) of 146 micrograms per day is based on liver cancer and leukemias observed in rodent studies. Product chemical analysis indicated the foam inside the upholstery cushion exceeded the Consumer Product Safety Commission limit of 0.1% (1,000 parts per million) for phthalates; however, it was unclear whether exposure to this chemical would exceed the Proposition 65 NSRL under typical product use conditions. Our evaluation of potential consumer exposure to DINP consisted of two steps: estimating each route-specific exposure concentration on a micrograms per day basis and comparing the dose estimates to the NSRL. The routes of exposure evaluated were dermal, inhalation, and oral, although the last was considered highly unlikely. We relied on US EPA and California EPA sources for general exposure parameters and on previously published studies that measured migration of DINP from upholstery materials to adjacent environmental media. The assessment was conservative, erring on overestimating exposure when uncertainties were present for particular assumptions used in the calculations. When we compared our exposure estimates to the California Proposition 65 NSRL, the results indicated that exposures to DINP in the foam were below the NSRL, specifically 1.6 to 3,200 times lower depending on the particular exposure scenario considered. These results suggested that the product was in compliance with the Proposition 65 Safe Harbor provisions.