Analysis of Phthalate Ester Plasticizers in Polyvinyl Chloride Children’s Toys, after 1998
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**Abstract**

A HPLC method using a UV detector is described for the determination of phthalate ester plasticizers (PAEs) in PVC children’s toys. It consists of the following two procedures: (1) liquid extraction of PAEs from the toys with acetone using rotary shaker at room temperature for 3 hours, (2) quantitative determination of PAEs by HPLC with UV detector at 225 nm, and then confirmation by GC/MS (Scan mode). The recoveries of PAEs from the PVC plate which contain 500mg DINP/g through the entire analytical procedure amounted to more than 90%. The calibration curves for PAEs were liner, e.g., with a range from 0.1 to 1000\/g/mL for DHXP and DINP. This method has been applied to PAEs in 22 PVC children’s toys which were purchased from toy stores in Tokyo in November 1999 to February 2000. DINP and DEHP were found in the levels of 196-449mg/g (7 toys) and 63-453mg/g (5 toys), respectively. DBP and DEHA were also detected in the range of 39-118mg/g (3 toys) and 63-254mg/g (3 toys), respectively. No PAEs were found in 11 toys which were manufactured by an infant chewing point of view.

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