

ABSTRACT

**VALIDATION OF HPTLC-DENSITOMETRIC TO
DETERMINATION A SIMULTANEOUS OF DIMETHYL
PHTHALATE AND DI-(2-ETHYLHEXYL) PHTHALATE IN
MOISTURIZER****Michael Wadoe**

Indonesia has high air humidity which can cause the risk of dry skin. To resolve dry skin using moisturizer. Ester phthalates are found in many personal care products as plasticizer. Dimethyl phthalate and di-(2-ethylhexyl) phthalate are derivative of ester phthalate. Dimethyl phthalate and di-(2-ethylhexyl) phthalate is suspected have toxicological effect as an Endocrine Disrupting Chemical (EDCs). This research was to determine a simultaneous of dimethyl phthalate and di-(2-ethylhexyl) phthalate in moisturizer. HPTLC Silica Gel 60F 254 was used as stationary phase and n-hexane : ethyl acetat (8:2) was used as mobile phase. Camag TLC Scanner 4 was used for analysis and simultaneous determination of dimethyl phthalate and di-(2-ethylhexyl) phthalate scanned at wavelength 280 nm. The method was validated in selectivity, linearity, accuracy, and precision. The result showed that method was selective to separate DMP and DEHP from other components in moisturizer with resolution (R_s) ≥ 1.5 . Good linearity for DMP in the concentration range of 20-100 ppm with $r = 0.9985$ and DEHP 200-1000 ppm with $r = 0.9980$. The limit detection and quantification for DMP were 0.74 ppm and 2.46 ppm and for DEHP were 4.05 ppm and 13.51 ppm, respectively. The *recovery* for DMP was (104.76 ± 4.88) % and for DEHP (102.64 ± 3.86) and the relative standard deviation (%RSD) of DMP 4.68% and DEHP were 4.00%, respectively. This method was applied for simultaneous determination of dimethyl phthalate and di-(2-ethylhexyl) phthalate in moisturizer. Samples were collected from local market, departement store, and online shop. The result showed all samples that not contained of dimethyl phthalate and di-(2-ethylhexyl) phthalate.

Keywords : Dimethyl phthalate (DMP),Di-(2-ethylhexyl) phthalate, moisturizer, HPTLC-Densitometry

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