

〈原著〉

化粧品中のN-ニトロソジエタノールアミン (NDEIA)に関する研究 (I) —NPD・ガスクロマトグラフィーによるNDEIAの定量法—

宝井辰紀*, 上条昌弥*, 桐ヶ谷忠司*, 日高利夫,
木嶋敬二**, 鈴木幸夫*, 河村太郎*

Studies on the N-nitrosodiethanolamine in Cosmetics (I) — Determination of NDEIA by gas chromatography with nitrogen-phosphorous detector —

Tatsutoshi TAKARAI*, Masaya KAMIJO*, Tadashi KIRIGAYA*
Toshio HIDAKA*, Keiji KIJIMA**, Yukio SUZUKI, Taro KAWAMURA*

Abstract

A cleanup method for N-nitrosodiethanolamine (NDEIA) in cosmetic creams by strongly anion exchange resin, ethanol and methanol was shown.

Amberlite CG400 type-1 was prepared with successive, HCl, NaOH and ethanol. Suspended creams with Na₂SO₄ and ammoniumsulfamate in ethanol was filtrated and filtrate was passed through the column. Then NDEIA was eluted with methanol from the column, the elute was dried up by evaporator, and added caffeine (as internal st). The ethanol soln. was applied for GC (2% Thermon 3000, NPD).

And for cross check of the result by Thermon 3000, trifluoroacetic anhydride was added to residue of the dried ethanol. Standed 30 min. and the reactant was dried. Added of methyl-N-methyl-anthranilate (as internal st.) to the residue. The ethanol soln. was injected on GC (2% OV-101, NPD).

The results of recovery rate were 90-101% (Thermon 3000) and 92-102% (OV-101).

Key word:

N-nitrosodiethanolamine; strongly anion exchange-resin; ethanol; methanol; Thermon 3000; nitrogen phosphorus flame ionization detector.