

GAS CHROMATOGRAPHY

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SKRIPSI

FAHRIZAL DIAN NUGRAHA

**VALIDASI METODE ANALISIS ASAM GLIKOLAT
DALAM SEDIAAN KOSMETIK
DENGAN KROMATOGRAFI GAS**

**MILIK
PERPUSTAKAAN
UNIVERSITAS AIRLANGGA
SURABAYA**



**FAKULTAS FARMASI UNIVERSITAS AIRLANGGA
BAGIAN KIMIA FARMASI
SURABAYA
2004**

Lembar Pengesahan

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SKRIPSI

**Dibuat untuk memenuhi syarat mencapai gelar Sarjana Farmasi pada
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2004**

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ABSTRACT

The gas chromatographic method for determination of glycolic acid used in cosmetics has been developed. Prior to GC analysis, esterification was needed by adding 10 μL of HCl and heating at 60 $^{\circ}\text{C}$ for 15 minutes in waterbath. The separation was performed by GC Agilent 6890 Series equipped with a HP-5 5% phenyl methyl siloksan 30m x 320 μm x 0.25 mm column using Helium as carrier gas and a Flame Ionized Detector (FID). The initial temperature of the oven was 75 $^{\circ}\text{C}$, held for a minute, and then increased at a rate of 2 $^{\circ}\text{C}/\text{min}$ to 85 $^{\circ}\text{C}$, held it for a minute and then increased again at a rate of 20 $^{\circ}\text{C}/\text{min}$ to 200 $^{\circ}\text{C}$, held finally the last temperature for approximately 30 minutes analyzing time. Under this condition the response of glycolic acid was linearly dependent on amount from 1000 to 5000 $\mu\text{g}/\text{mL}$ with regression equation $y = 0.1033x - 20.691$ ($r = 0.9991$) and relative process standard deviation $V_{x0} = 2.5042\%$. The average recoveries from 0.04 g glycolic acids added to 0.5 g sample were 87.55%. The precision method gave relative standard deviation 5.71%.

Keywords: Glycolic acid, validation, determination, esterification, cosmetic, GC