

**ChemTech****International Journal of ChemTech Research**CODEN (USA): IJCRGG, ISSN: 0974-4290, ISSN(Online):2455-9555  
Vol.10 No.1 pp 89-97, 2017**Optimization of Volume Void and Wavelengths at Simultaneous Determination Method Development of Sweeteners, Preservatives and Dyes by UFLC**<sup>1</sup>Suprianto, <sup>\*2</sup>Effendy De Lux Putra, and <sup>3</sup>Siti Morin Sinaga<sup>1</sup> Helvetia Institute of Health Sciences, Medan 20124, Indonesia  
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**Abstract :** Void volume is an important parameter in chromatography to determines accuracy of chromatography. Void volume which is not in accordance cause a widening or changes the symmetry of the chromatogram. Void volume is very influential at the capacity factor. Wavelength range from UV to Visible should be optimized so as not to be used from the maximum wavelength respectively. This analysis leads to the determination of the void volume and the wavelengths for the development of methods of separation of a mixture of saccharin, cyclamate, benzoic, sorbic, tartrazine and sunset yellow. This study used high performance liquid chromatography reversed phase the wavelength range of 200 nm - 470 nm, the instrument of UFLC 1290 DAD (Agilent), C18 column 100 mm x 4.6 mm x 3.5  $\mu$ m (Agilent). The results showed that the optimum empty volume is 30% with a wavelength of 200, 220 and 450 nm in the mobile phase of phosphate buffer (pH 4.5) and methanol 75: 25 (v / v), flow rate of 1.0 ml / min, column temperature 30°C. Parameter of optimization includes the capacity factor, plate number, resolution, selectivity and tailing factor meet the requirements of analysis.

**Keywords :** UFLC, Volume Void, Wavelength, Food Additives.

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