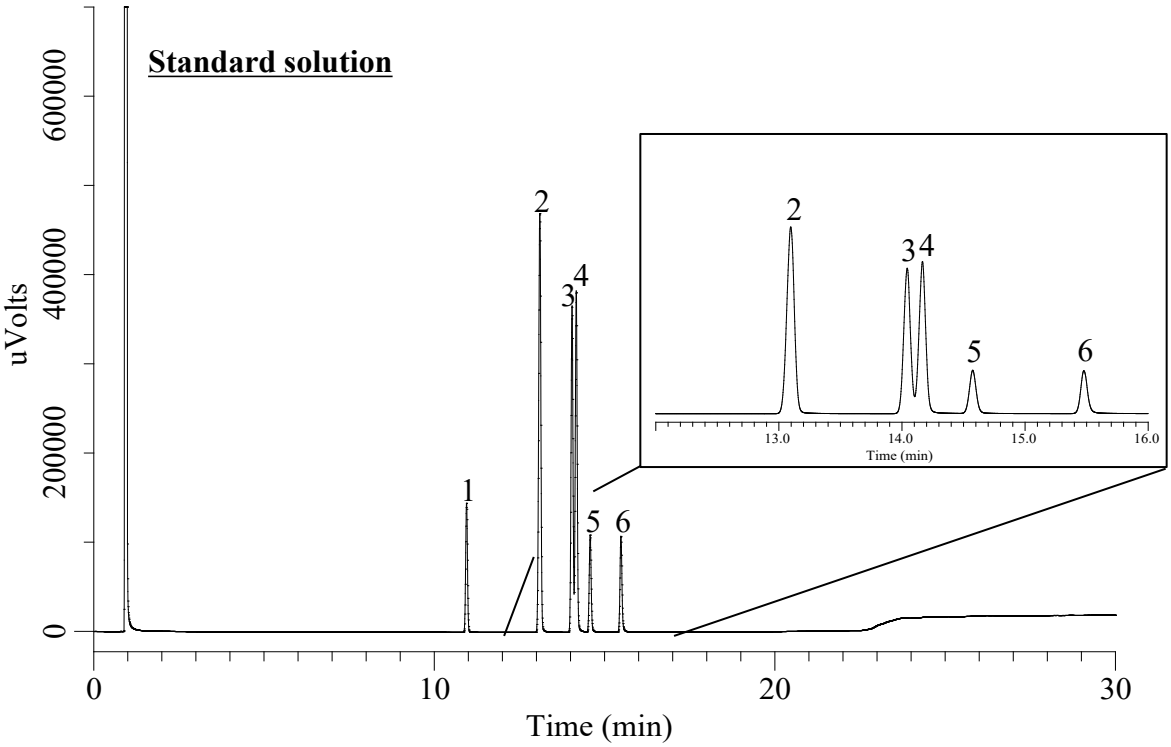
Analysis of Dipropylene Glycol

(Under the Condition of Draft for USP PF 50(4), Dipropylene Glycol)



Conditions

System : GC-4000 PlusH/FID
Column : InertCap WAX-HT (GL Sciences Inc.)
0.53 mm I.D. x 30 m df = 1.2 µm
Col. Cat. No. : 1010 - 68746
Col. Temp. : 90 ℃ (2.0 min) - 6 ℃/min - 210℃ (0.5 min) - 100 ℃/min - 245 ℃ (7.15 min)
Carrier Gas : H_2 22 kPa, Constant pressure
Injection : Split 1 : 10
250 ℃
Detection : FID Auto Range
250 ℃
Sameple : Standard
Sample Size : 1 µL

Analyte

1. 2,2,2-Trichloroethanol 2.5 mg/mL
2. Dipropylene glycol isomer 1
3. Dipropylene glycol isomer 2
4. Dipropylene glycol isomer 3
5. Dipropylene glycol isomer 4
6. Dipropylene glycol isomer 5 total of 10 mg/mL for 2-6

Suitably requirements

Resolution (3, 4) : 1.24 (≧ 1.2)

RSD of the peak area ratio of 1 and 2 (%)(n=5) : 0.87 (≦ 1.0)
RSD of the peak area ratio of 1 and 3 (%)(n=5) : 0.22 (≦ 1.0)
RSD of the peak area ratio of 1 and 4 (%)(n=5) : 0.096 (≦ 1.0)
RSD of the peak area ratio of 1 and 5 (%)(n=5) : 0.15 (≦ 1.0)
RSD of the peak area ratio of 1 and 6 (%)(n=5) : 0.12 (≦ 1.0)

Relative retention times
2,2,2-Trichloroethanol 10.95/13.10 (0.84)
Dipropylene glycol isomer 1 13.10/13.10 (1.00)
Dipropylene glycol isomer 2 14.04/13.10 (1.07)
Dipropylene glycol isomer 3 14.17/13.10 (1.08)
Dipropylene glycol isomer 4 14.58/13.10(1.11)
Dipropylene glycol isomer 5 15.48/13.10(1.18)