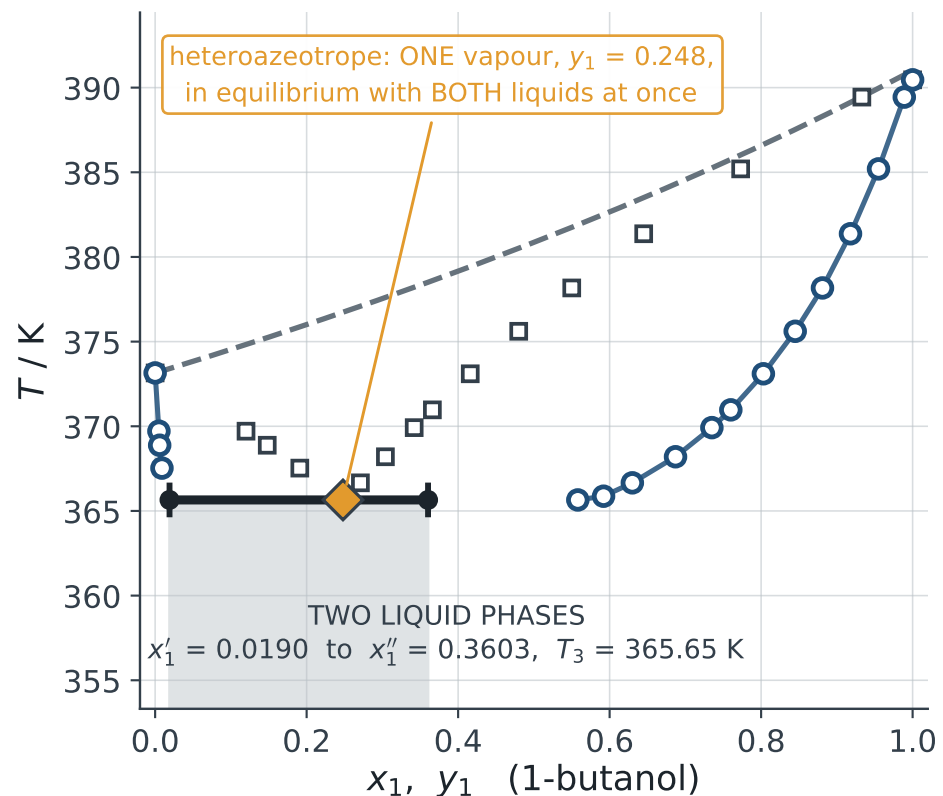


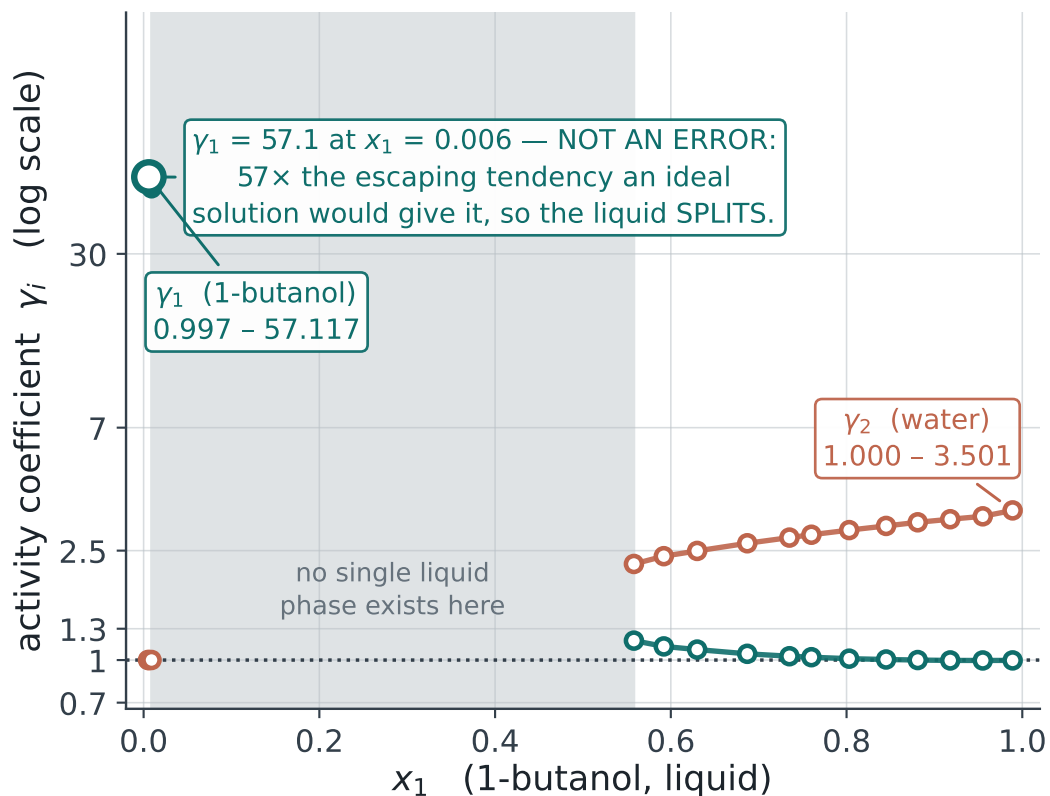
Type 4 — VLLE — partial miscibility, heteroazeotrope

--- Raoult's law ($\gamma_i = 1$)
 ○ measured, bubble (x_1)
 □ measured, dew (y_1)
 — three-phase line (VLLE)
 ○ γ_1 1-butanol
 ○ γ_2 water

(a) T - x - y , isobaric, $P = 101.3$ kPa



(b) γ_1 and γ_2 from the same measurements



1-butanol (1) + water (2) · 17 points, isobaric, $P = 101.3$ kPa · doi:10.1021/je700411p

T_3 and y_1 are measured; the two conjugate liquid compositions are extrapolated 3.2 K from the paper's own LLE table.