

Supporting information to

# Separation of Molar Weight-Distributed Polyethylene Glycols by Reversed-Phase Chromatography – II. Preparative Isolation of Pure Single Homologs

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(submitted to *Processes*)

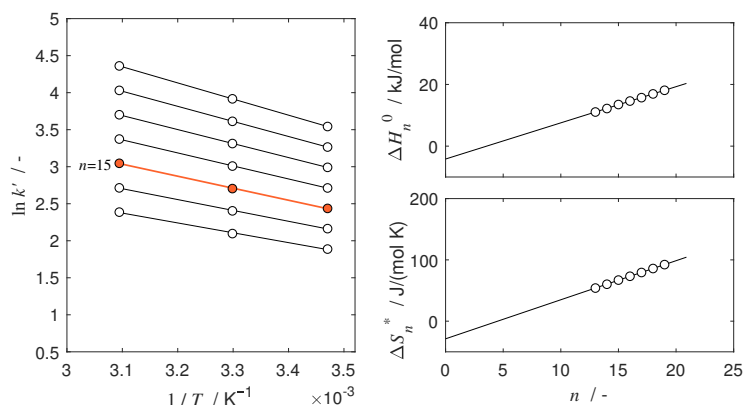


Figure S1: Determination of thermodynamic parameters for the separation of PEG 1000 on the preparative column for an eluent with 15 vol% ACN. **Left**—van't Hoff plot of data and linear regression (lines) for the different homologs. **Right**—enthalpic and entropic contributions as a function of  $n$ .

Table S1: Polynomial coefficients for interpolation of the thermodynamic parameters as used for calculating the lines in Fig. 4. Calculation in the form  $y = \sum_i p_i \cdot x^i$  with  $y = (\Delta H_r^\circ, \Delta H_e^\circ, \Delta S_r^*, \Delta S_e^*)$  and  $x$  as ACN content in vol%. Enthalpies in kJ/mol and entropies in J/(mol K).

	$p_3$	$p_2$	$p_1$	$p_0$
$\Delta H_r^\circ$	0.000344	-0.024937	0.619893	-3.676850
$\Delta H_e^\circ$	0.003738	-0.188586	3.087358	-20.668817
$\Delta S_r^*$	0.000610	-0.045490	1.043110	-1.097541
$\Delta S_e^*$	0.014140	-0.715288	11.93781	-94.633632

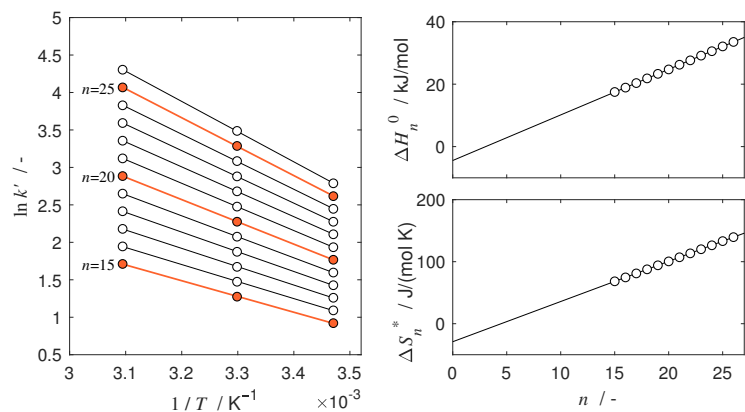


Figure S2: Determination of thermodynamic parameters for the separation of PEG 1000 on the preparative column for an eluent with 19 vol% ACN. **Left**—van't Hoff plot of data and linear regression (lines) for the different homologs. **Right**—enthalpic and entropic contributions as a function of  $n$ .

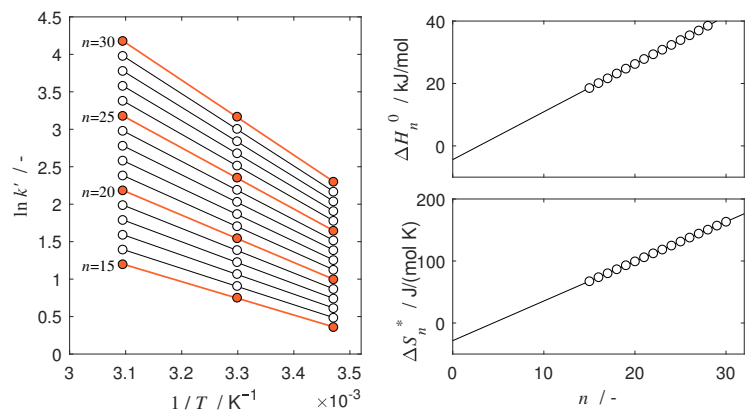


Figure S3: Determination of thermodynamic parameters for the separation of PEG 1000 on the preparative column for an eluent with 21 vol% ACN. **Left**—van't Hoff plot of data and linear regression (lines) for the different homologs. **Right**—enthalpic and entropic contributions as a function of  $n$ .

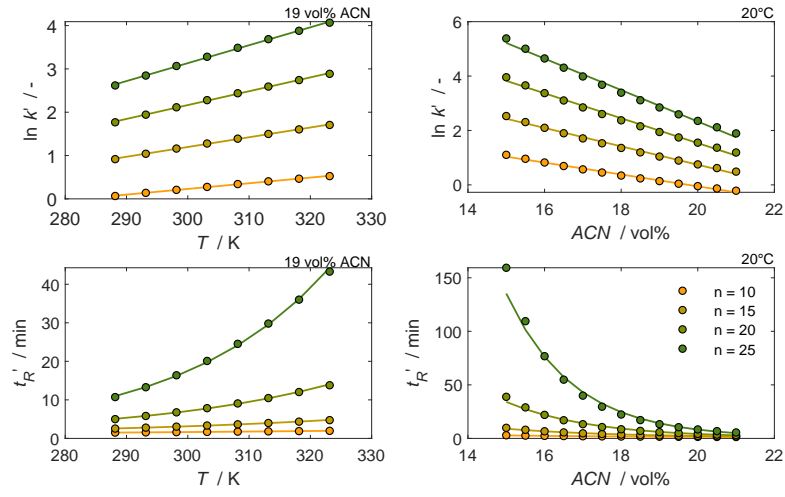


Figure S4: Comparison of  $k'$  and retention times predicted by the thermodynamic model (symbols) with the local linearized approximation of  $\ln k'$  by Eq. (5) (lines) as required for application of the LLS theory.