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10019 - Column Application Note Characterization of Poly(vinyl chloride)

Poly(vinyl chloride) (PVC) is obtained by polymerization of vinyl chloride. The thermical stability is low, so it is used often together with stabilizers. It is stable against bases, acids, water, alcohols and oils. Many solvents like benzene have swelling properties for PVC. PVC does not assist burns so it is used in many applications. Samples with a high syndiotactic content can not be measured in THF or will show side peaks of the aggregated molecules.

Experimental Setup

Mobile Phase:	Tetrahydrofuran
Stationary Phase:	PSS SDV
Flow rate [mL/min]:	1,00
Temperature [°C]:	25
Detection:	Shodex-RI71
Calibration:	Kit Poly(styrene) high
Data processing:	PSS WinGPC

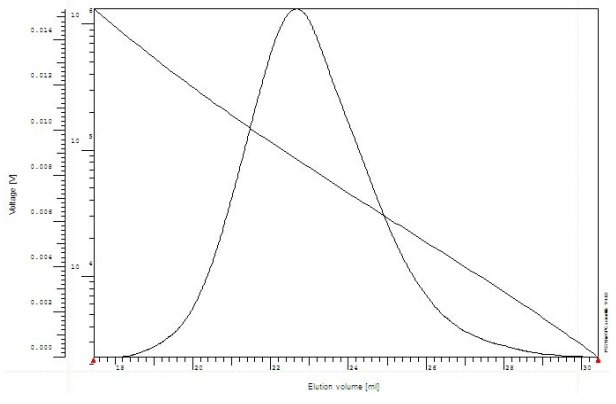
Recommandations for Sample Concentration

narrow PDI	
M 100 Da - 10 000 Da:	2 g/L
M 10 000 Da - 1 000 000 Da:	1-2 g/L
M > 1 000 000 Da:	0.5 g/L or less
broad PDI (>1.5)	
all molar masses:	3.0 - 5.0 g/L
Injection volume [µL]:	50

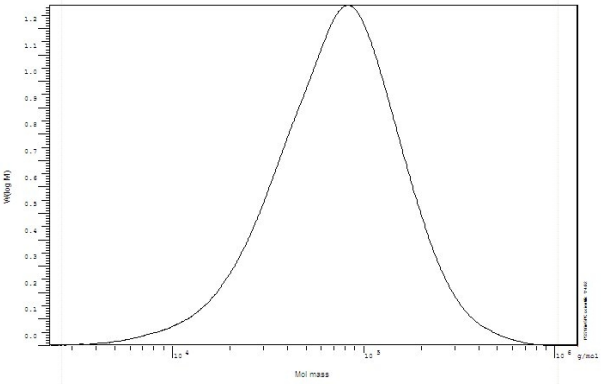
Suitable Columns

low molecular weights:	P/N 201-0001 (set of 3) OR sda083003lis (1 linear)
medium molecular weights:	P/N 201-0002 (set of 2) OR sda083005lim (1 linear)
high molecular weights:	P/N 201-0003 (set of 3) OR sda083005lxl (1 linear)
ultrahigh molecular weights:	P/N 202-0001 (set of 3)

Elugram and Calibration
separation on PSS SDV



Molar Mass Distribution
separation on PSS SDV



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