

Errata Notice

This document contains references to PSS or Polymer Standards Service. Please note that PSS is now Agilent. This document will be republished as an Agilent document in the future.



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10043 - Column Application Note Characterization of Poly(ethylene imine)

Poly(ethylene imine) (PEI) is prepared by acid catalyzed polymerization of ethylenimin. Poly(ethylenimines) are branched polymers with primary, secondary and tertiary amino functions. Polyethylenimines are used for increasing the wet consistency of paper and for fixing pigments.

Experimental Setup

Mobile Phase:	Hexafluoroisopropanol Potassium trifluoroacetate 0.1M
Stationary Phase:	PSS PFG
Flow rate [mL/min]:	0,50
Temperature [°C]:	25
Detection:	Shodex-RI71
Calibration:	ReadyCal-Kit Poly(methyl methacrylate)
Data processing:	PSS WinGPC

Recommendations for Sample Concentration

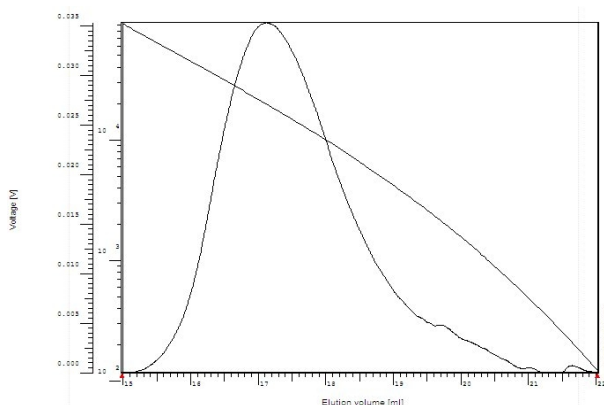
narrow PDI	
M 100 Da - 10 000 Da:	2 g/L
M 10 000 Da - 1 000 000 Da:	1-2 g/L
M > 1 000 000 Da:	0.5 g/L or less
broad PDI (>1.5)	
all molar masses:	3.0 - 5.0 g/L
Injection volume [μ L]:	50



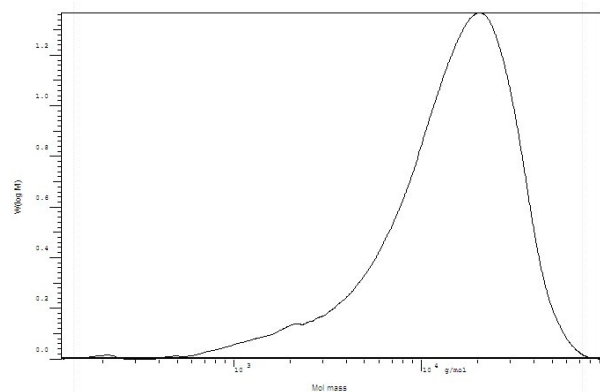
Suitable Columns

low molecular weights:	P/N 203-0011 (set of 3) OR pfa083007lis (1 linear)
medium molecular weights:	P/N 203-0012 (set of 3) OR pfa083007lim (1 linear)
high molecular weights:	P/N 203-0013 (set of 3) OR pfa083007lxl (1 linear)
ultrahigh molecular weights:	-

Elugram and Calibration separation on PSS PFG



Molar Mass Distribution separation on PSS PFG



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