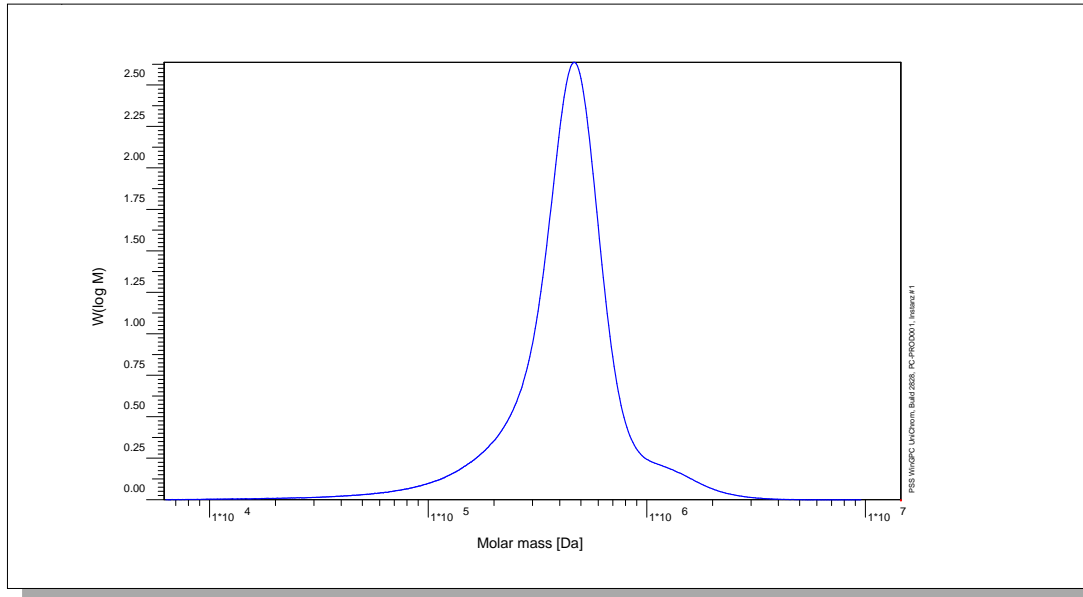


Certificate of Analysis

Polymer type: Poly(styrene sulfonate) sodium salt
 Part No: PSS-pss450k
 Lot No: pss5070

Molar Mass Distribution



GPC/SEC - Conditions

Sample concentration	1,00 g/l	Inject volume	20 µl
Flow rate	1,00 ml/min	Temperature	23 °C
Solvent	Phosphate buffer pH9		
Precolumn [8 x 50 mm]	PSS MCX 10µm		
Columns [analytical, each 8 x 300 mm]	PSS MCX 10µm 10e7Å / 10e5Å / 10e3Å		
Data Acquisition Software	PSS WinGPC	Operator	J.Preis

GPC/SEC - Results

Detector	Mw [Da]	Mn [Da]	Mp [Da]	PDI [Mw/Mn]
Agilent VWD 254nm	466000	-	470000	<1.20

Parent Poly(styrene) Molecular Weight: Mw [Da] = 248000 Mn [Da] = 236000 Mp [Da] = 250000 PDI = 1.05

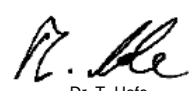
Note:

Mw = Weight average molecular weight
 Mn = Number average molecular weight
 Mp = Molar mass at the peak maximum
 PDI = Polydispersity Index

The molecular weights are calculated with the factor 1.88 (pss sodium salt / ps x 0.95). Degree of sulfonation > 90%.
 (For calculation: Assumption: Degree of sulfonation is 95%).

Storage: Store the tightly recapped polymer standard in a dry, dark, cool area; e.g. a refrigerator (4 °C).
Date of expiry: See product label.

Manufacture and control according to PSS method of analysis



Dr. T. Hofe
production director

