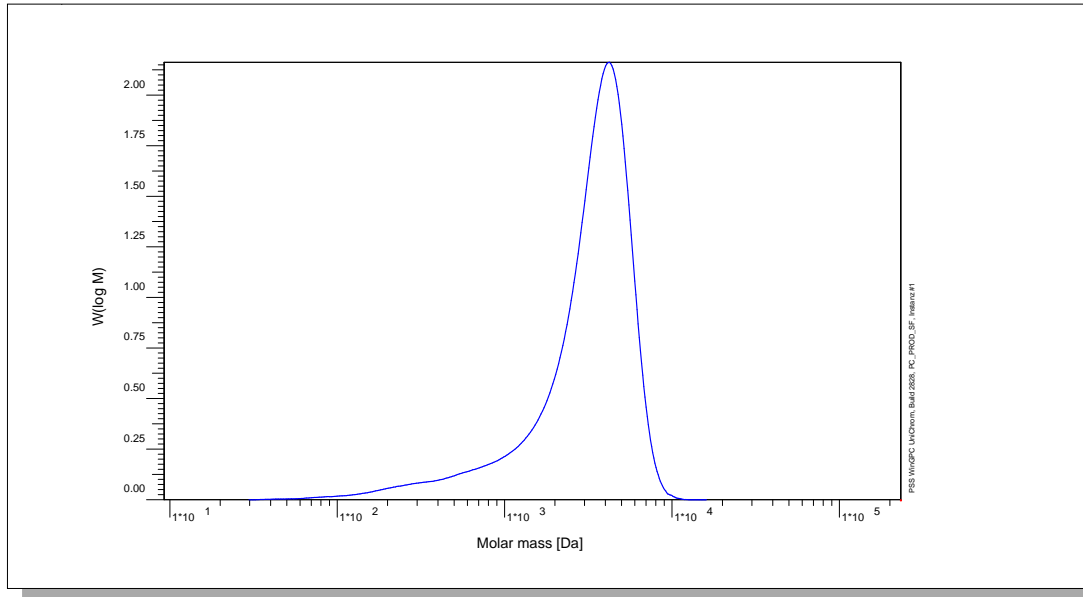


Certificate of Analysis

Polymer type: Poly(styrene sulfonate) sodium salt
 Part No: PSS-pss4.2k
 Lot No: pss21125-2

Molar Mass Distribution



GPC/SEC - Conditions

Sample concentration	1,00 g/l	Inject volume	20 µl
Solvent	Water, Disodium hydrogen phosphate 11,88g/L	Flow rate	1,00 ml/min
Precolumn [8 x 50 mm]	PSS MCX 10µm	Temperature	23 °C
Columns [analytical, each 8 x 300 mm]	PSS MCX 10µm 10e3Å / 10e5Å / 10e7Å	Operator	S.Fugmann
Data Acquisition Software	PSS WinGPC		

GPC/SEC - Results

Detector	Mw [Da]	Mn [Da]	Mp [Da]	PDI [Mw/Mn]
Agilent VWD 254nm	4230	-	4210	<1.20

Parent Poly(styrene) Molecular Weight: Mw [Da] = 2 250 Mn [Da] = 2 140 Mp [Da] = 2 240 PDI = 1.05

Note:

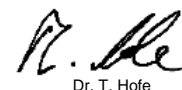
Mw = Weight average molecular weight
 Mn = Number average molecular weight
 Mp = Molar mass at the peak maximum
 PDI = Polydispersity Index

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

