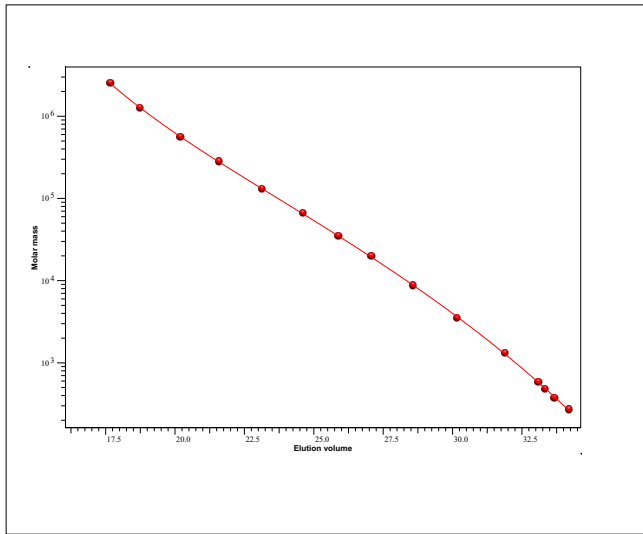


Certificate of Analysis

Product: ReadyCal-Kit Poly(styrene)
 Part No: PSS-pskitr4
 Lot No: pskitr4-12

GPC/SEC - Calibration Curve



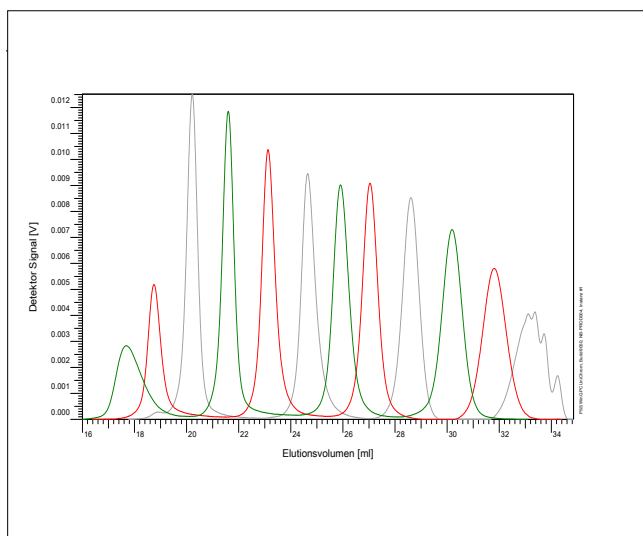
GPC/SEC - Calibration Table

Elution volume [ml]	Mp [Da]	Polymer Lot No:
17,70	2520000	ps090705
18,76	1240000	ps090715
20,21	552000	ps200311
21,60	277000	ps31059
23,15	130000	ps5124
24,63	66000	ps14057
25,91	34800	ps9029n
27,10	19700	ps211114
28,59	8680	ps050215
30,18	3470	ps6126
31,90	1306	ps080116
33,11	578	ps241117
33,36	474	ps241117
33,70	370	ps241117
34,22	266	ps241117

Note:

Mp = Molar mass at the peak maximum

GPC/SEC - Polymer Overlay




GPC/SEC - Calibration Conditions

Solvent: Tetrahydrofuran
 Flow rate: 1,00 ml/min
 Precolumn [8 x 50 mm]: PSS SDV 5µm
 Columns [8 x 300 mm]: PSS SDV 5µm 10e3Å / 10e5Å / 10e6Å
 Temperature: 23 °C
 Inject volume: 20 µl
 Internal standard: Toluene at 37,40 ml
 Data Acquisition Software: PSS WinGPC
 Calibration by: A.Klein
 Fit quality: PSS Poly 5
 R: 0,999976

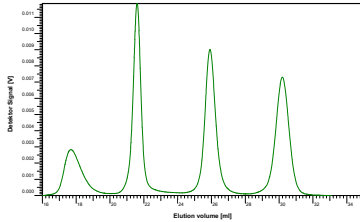
Storage: Store the tightly recapped polymer standards in a dry, dark, cool area; e.g. a refrigerator (4 °C).
 Date of expiry: yyyy/mm/dd (See also product label.)
 Date of approval: yyyy/mm/dd

Manufacture and control according to PSS method of analysis


 Dr. T. Hofe
 production director

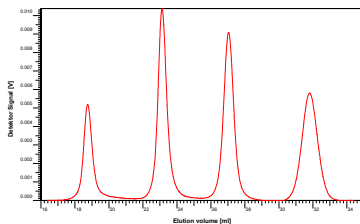
Product: ReadyCal-Kit Poly(styrene)
 Part No: PSS-pskitr4
 Lot No: pskitr4-12

Colour code: Cap – green



Mp [Da]	Mw [Da]	Mn [Da]	Mw (LS) ^a / Mn (NMR) ^b [Da]	Mass [mg]	Lot No:
2 520 000	2 460 000	2 300 000	2 430 000 ^a	2.0*	ps090705
277 000	271 000	265 000	281 000 ^a	4.0	ps31059
34 800	34 000	32 700	33 300 ^a	4.0	ps9029n
3 470	3 460	3 260	3 410 ^a	4.0	ps6126

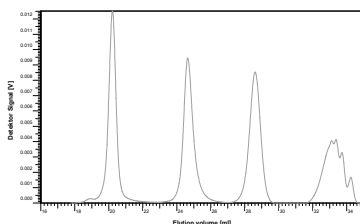
Colour code: Cap – red



Mp [Da]	Mw [Da]	Mn [Da]	Mw (LS) ^a / Mn (NMR) ^b [Da]	Mass [mg]	Lot No:
1 240 000	1 170 000	1 100 000	1 120 000 ^a	2.0*	ps090715
130 000	125 000	120 000	134 000 ^a	4.0	ps5124
19 700	19 100	18 200	18 500 ^a	4.0	ps211114
1 306	1 220	1 120	1 150 ^b	4.0	ps080116**

** Poly(styrene) (Lot No. ps080116): Mp 1306Da = highest peak according to the GPC/SEC conditions on PSS SDV 3µm columns in THF (oligo – mixture with Mp 1306, 1202, 1098, 994, 890, 786, 682, 578, 474, 370, 266Da). Due to a possible lack of resolution the highest Mp value can shift to the next smaller oligomer (1202Da or 1098Da).

Colour code: Cap – white



Mp [Da]	Mw [Da]	Mn [Da]	Mw (LS) ^a / Mn (NMR) ^b [Da]	Mass [mg]	Lot No:
552 000	554 000	532 000	532 000 ^a	4.0	ps200311
66 000	62 500	59 300	64 200 ^a	4.0	ps14057
8 680	8 670	8 420	8 920 ^a	4.0	ps050215
474	532	439	453 ^b	4.0	ps241117***

*** Poly(styrene) (Lot No. ps241117): Mp 474Da = highest peak according to the GPC/SEC conditions on PSS SDV 3µm columns in THF (oligo – mixture with Mp 578, 474, 370, 266Da).

For exact determination of sample concentration, we recommend to add the solvent volume precisely.

Level of eluent	full	half	quarter
Volume of eluent	4.0 ml	2.0 ml	1.0 ml
Concentration	1 g/l resp. 0.5 g/l*	2 g/l resp. 1 g/l*	4 g/l resp. 2 g/l*