

Gel Permeation Chromatography (GPC)

Solubility	Standards	Molecular Wt. Upto
THF	Polystyrene	25 lakhs
Chloroform	Polystyrene	25 lakhs
Water	Poly Ethylene Glycol Poly Ethylene Oxide	15 lakhs



Agilent 1260 Infinity II
with RI Detector.

Sample Requirement :-

1. Solid Sample - 1 to 10 gms.
2. Liquid Sample - 1 to 10 ml.

Relative Molecular Weight (Mw), Molecular Number (Mn) and Poly Dispersity (Mwd). Determination of Polymer samples by GPC.

1. 25°C To 45°C - Aqueous Molecular weight up to 15 lakh.
2. 25°C To 45°C - THF / CHCl₃ up to 25 lakh.

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Sample Details

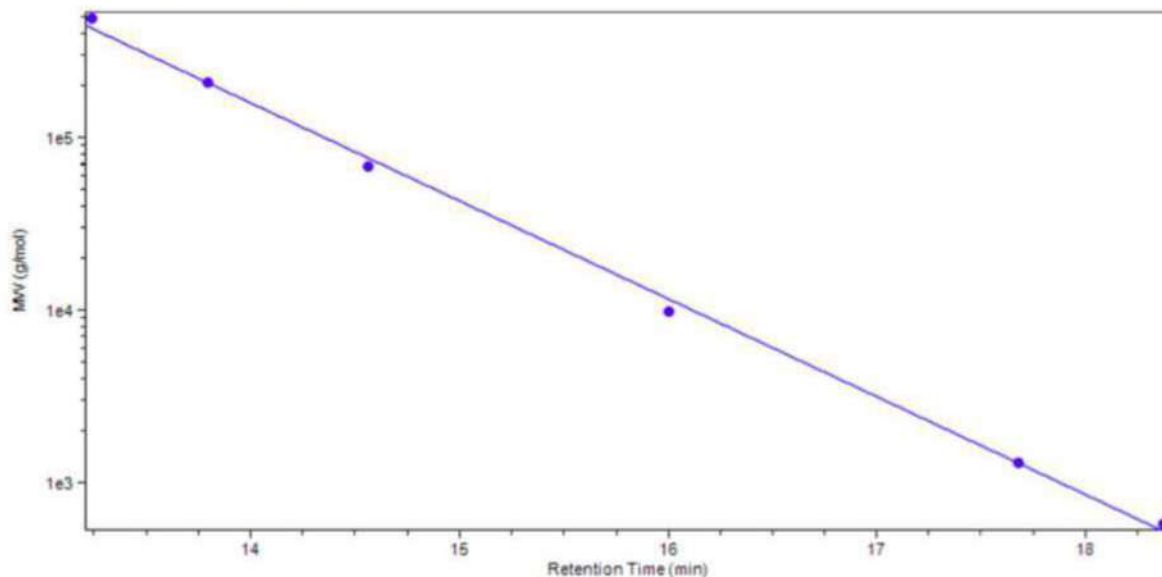
Sample name:	DP25 # L-3103	Sample type:	Sample
Description:	DP25 # L-3103	Location:	
Sample amount:	0.000	Injection:	1 of 1
Instrument:	SAS GPC	Injection volume:	
Injection date:	2022-02-11 14:18:07+05:30	Acq. operator:	SYSTEM
Acq. method:	WATER METHOD 15.10.20.amx		
Analysis method:	*WATER CALIBRATION 11.02.2022.pmx		
Last changed:	2022-02-11 15:00:58+05:30		

GPC Column Calibration Details

Method Name	*WATER CALIBRATION 11.02.2022.pmx
Calibration type	Narrow Standard
Signal	RID1A
K ((10e-5) dL/g)	14.1
Alpha	0.7
Order of curve fit	2
Curve fit equation	$y = 0.00338902x^2 - 0.6096x + 13.5988$
Residual sum of squares	0.003859
Coefficient of determination	0.999281
Linear correlation coefficient	-0.999546
Corrected sum of squares	5.364451
Standard Y error estimate	0.043929
FRM name	
FRM RT (min)	0.000
FRM source	
High MW limit RT (min)	13.768
Low MW limit RT (min)	19.909
High limit MW (g/mol)	704795
Low limit MW (g/mol)	639

GPC Column Calibration Plot

DILUENT BLANK - DILUENT BLANK.dx



GPC Column Calibration Data Points

RT (min)	Assigned MW (g/mol)	Log MW	Sample name	Source chromatogram	Signal	Percent error
13.236	486300	5.686904	STD MIX-1	STD MIX-1.dx	RID1A	13.020052
18.376	580	2.763428	STD MIX-1	STD MIX-1.dx	RID1A	9.799672
14.564	67600	4.829947	STD MIX-2	STD MIX-2.dx	RID1A	-10.828292
17.683	1300	3.113943	STD MIX-2	STD MIX-2.dx	RID1A	0.723797
13.794	206000	5.313867	STD MIX-3	STD MIX-3.dx	RID1A	0.831540
16.005	9820	3.992111	STD MIX-3	STD MIX-3.dx	RID1A	-16.816279

SHRADDHA ANALYTICAL SERVICES

GPC/SEC REPORT

Sample Details

Sample name: DP25 # L-3103
Description: DP25 # L-3103
Sample amount: 0.000
Sample type: Sample

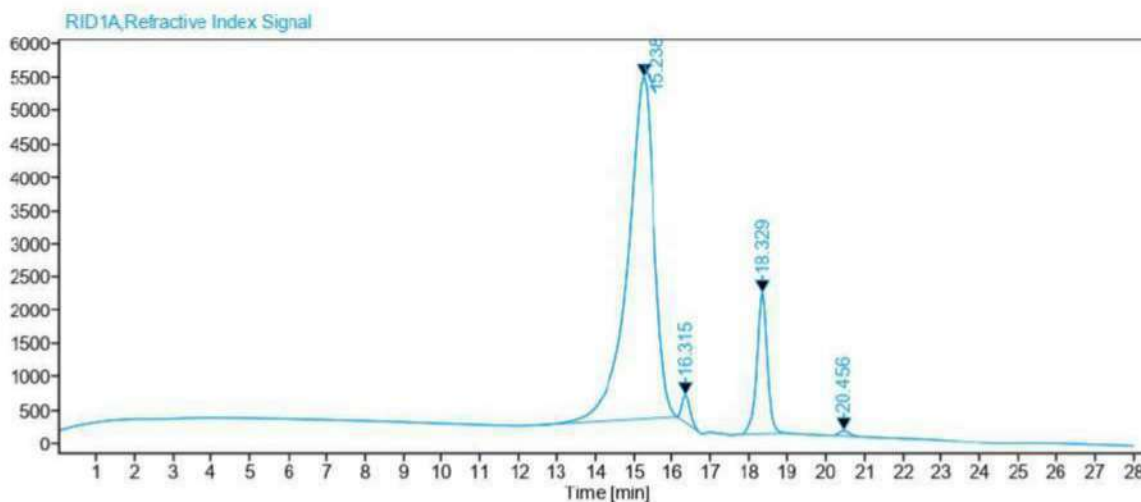
Instrument: SAS GPC
Injection date: 2022-02-11 14:18:07+05:30
Acq. method: WATER METHOD 15.10.20.amx
Injection volume: 1 of 1
Analysis method: *WATER CALIBRATION 11.02.2022.pmx
Acq. operator: SYSTEM
Last changed: 2022-02-11 15:00:58+05:30

Peak Results

Signal name	Peak start RT (min)	RT (min)	Peak end RT (min)	Area	Area %
RID1A	12.565	15.238	16.104	245211.5707	84.15
RID1A	16.104	16.315	16.690	5958.8054	2.05
RID1A	17.740	18.329	18.996	38772.2126	13.31
RID1A	20.132	20.456	20.911	1439.1569	0.49

Molecular Weight Averages

Peak #	RT (min)	Mp (g/mol)	Mn (g/mol)	Mw (g/mol)	Mz (g/mol)	Mz+1 (g/mol)	PD
1	15.238	125320	135056	169358	255735	506156	1.253984
2	16.315	35607	34724	35145	35554	35950	1.012124
3	18.329	3685	3671	3762	3857	3957	1.024789
4	20.456	353	341	348	354	360	1.020528

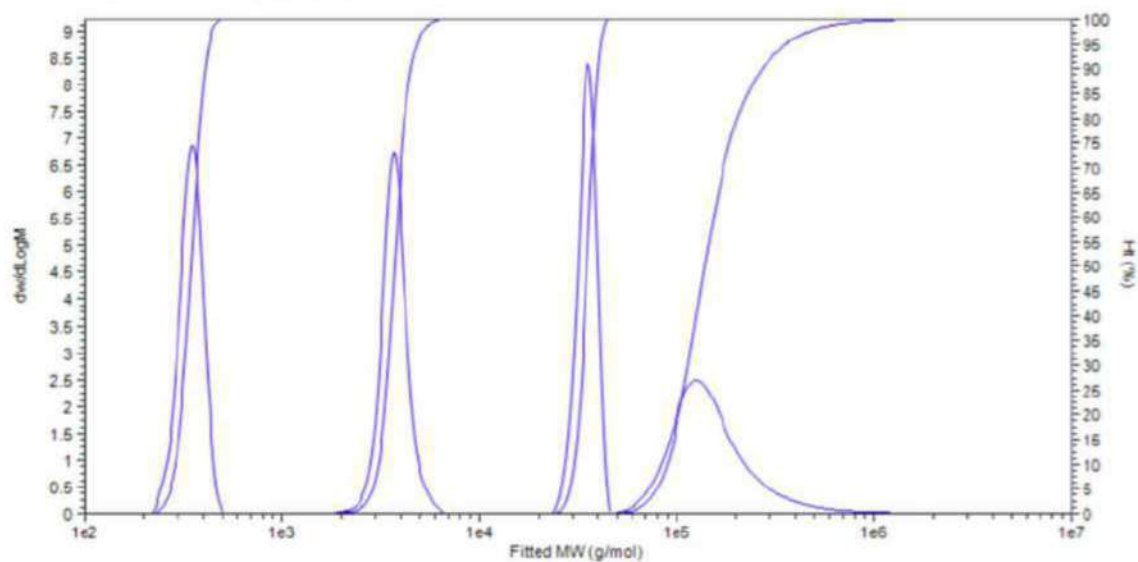


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GPC/SEC REPORT

Molecular Weight Distribution Plot

EMDILITH DP25 # L-3103 - EMDILITH DP25 # L-3103.dx





Sample Details

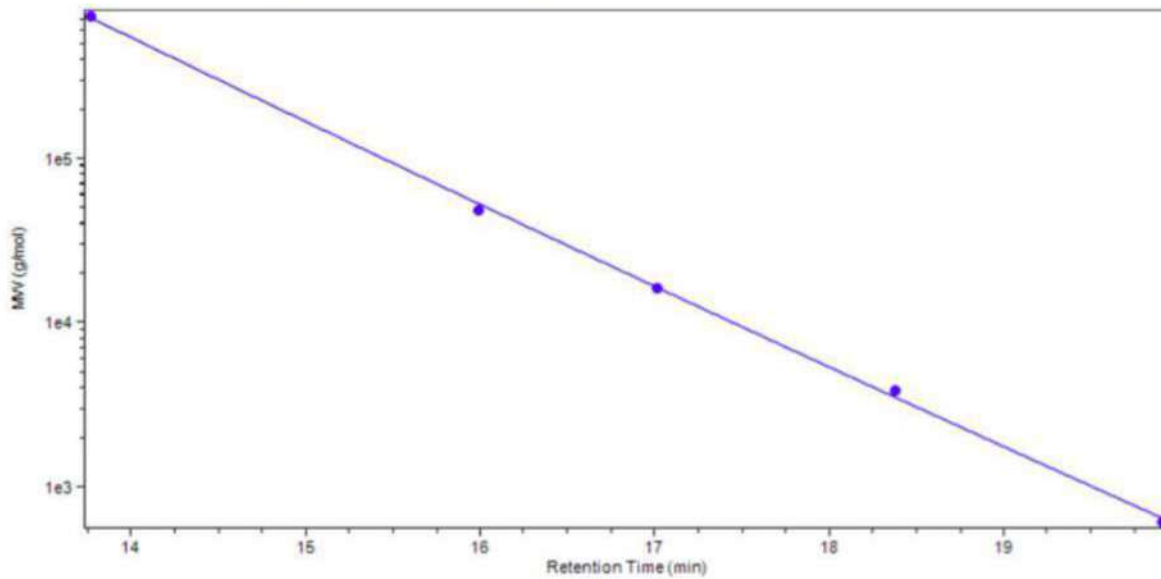
Sample name:	DILUENT BLANK	Sample type:	Sample
Description:	DILUENT BLANK	Location:	
Sample amount:	0.000	Injection:	1 of 1
Instrument:	SAS GPC	Injection volume:	
Injection date:	2022-06-24 11:47:38+05:30	Acq. operator:	SYSTEM
Acq. method:	SAS 25.8.20 METHOD.amx		
Analysis method:	*THF CALIBRATION - 24.06.2022.pmx		
Last changed:	2022-06-24 14:24:56+05:30		

GPC Column Calibration Details

Method Name	*THF CALIBRATION - 24.06.2022.pmx
Calibration type	Narrow Standard
Signal	RID1A
K ((10e-5) dL/g)	14.1
Alpha	0.7
Order of curve fit	1
Curve fit equation	$y = -0.565672x + 13.1133$
Residual sum of squares	0.012259
Coefficient of determination	0.998272
Linear correlation coefficient	-0.999136
Corrected sum of squares	7.093193
Standard Y error estimate	0.055361
FRM name	
FRM RT (min)	0.000
FRM source	
High MW limit RT (min)	13.236
Low MW limit RT (min)	18.376
High limit MW (g/mol)	422983
Low limit MW (g/mol)	523

GPC Column Calibration Plot

EMDILITH DP25 # L-3103 - EMDILITH DP25 # L-3103.dx



GPC Column Calibration Data Points

RT (min)	Assigned MW (g/mol)	Log MW	Sample name	Source chromatogram	Signal	Percent error
17.016	16100	4.206826	STD MIX-1	STD MIX-1.dx	RID1A	-0.094575
19.909	610	2.785330	STD MIX-1	STD MIX-1.dx	RID1A	-4.816365
13.768	724500	5.860038	STD MIX-2	STD MIX-2.dx	RID1A	2.719838
15.986	48290	4.683857	STD MIX-2	STD MIX-2.dx	RID1A	-8.636426
18.375	3860	3.586587	STD MIX-3	STD MIX-3.dx	RID1A	9.809537

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GPC/SEC REPORT

Sample Details

Sample name: R20WF / 506E013
Description: R20WF / 506E013
Sample amount: 0.000
Sample type: Sample

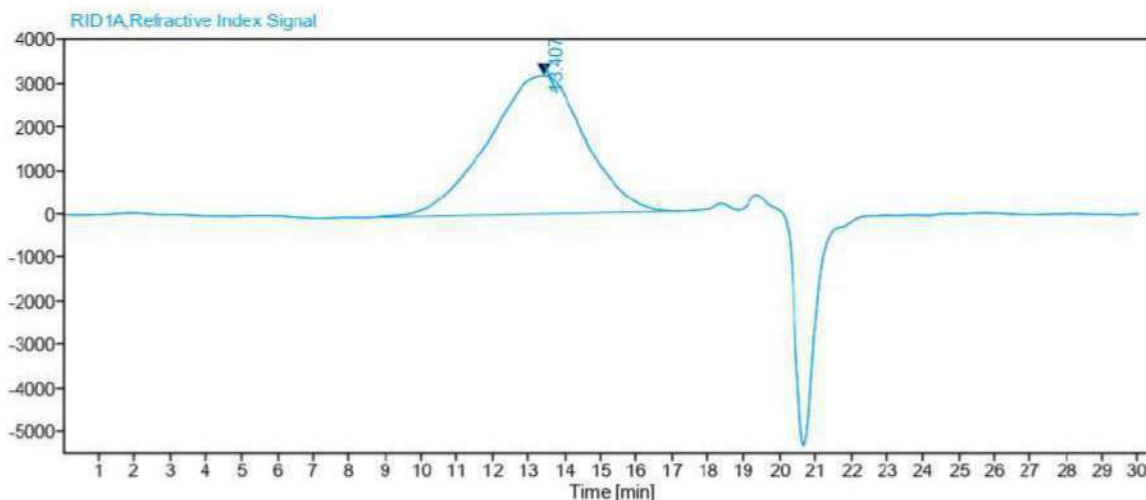
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Injection date: 2022-06-24 13:43:39+05:30
Acq. method: SAS 25.8.20 METHOD.amx
Injection: 1 of 1
Analysis method: *THF CALIBRATION - 24.06.2022.pmx
Injection volume:
Acq. operator: SYSTEM
Last changed: 2022-06-24 14:24:56+05:30

Peak Results

Signal name	Peak start RT (min)	RT (min)	Peak end RT (min)	Area	Area %
RID1A	8.428	13.407	17.170	590638.3896	100.00

Molecular Weight Averages

Peak #	RT (min)	Mp (g/mol)	Mn (g/mol)	Mw (g/mol)	Mz (g/mol)	Mz+1 (g/mol)	PD
1	13.407	351546	145286	1868756	19561522	63996999	12.862602



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GPC/SEC REPORT

Molecular Weight Distribution Plot

R20WF / 506E013 - R20WF - 506E013.dx

