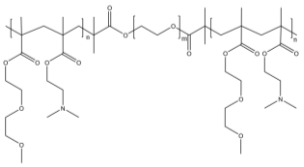
Sample Name: **Poly (Diethylene glycol methylethermethacrylate–co–[N,N-dimethylamino]ethyl methacrylate)-b-Poly ethylene glycol-b- Poly(Diethylene glycol methylethermethacrylate–co–[N,N-dimethylamino]ethyl methacrylate)**

Sample #: **P43948A-DEGMEOMA-DMAEMA-b-PEG-DEGMEOMA-DMAEMA**

Structure:



Composition:

Mn × 10^3 PEG Block	Mn × 10^3 total	Mw/Mn
20.0	45.0	1.55
DEG-MeOMA (43)-DMAEMA(25)-PEG(454)-DEGMeOMA(43)-DMAEMA(25)		
Mn: 8,500-4,000-b-20,000-b-8,500-b-4,000		

Synthesis Procedure:
The polymer is prepared by ATRP process using α-ω-dibromo PEG.

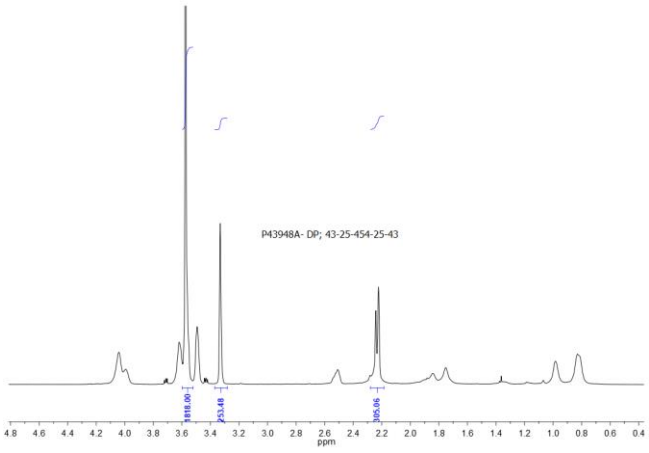
Characterization:
The molecular weight and polydispersity index (PDI) were calculated by SEC using water as eluent. The copolymer composition was calculated from ^{1}H-NMR spectroscopy.

Solubility:
The polymer is soluble in water. 1mg polymer in Water does not give a clear solution. After heating solution to about 90 ^{o}C by bubbling CO_2, it gives clear solution immediately**.**

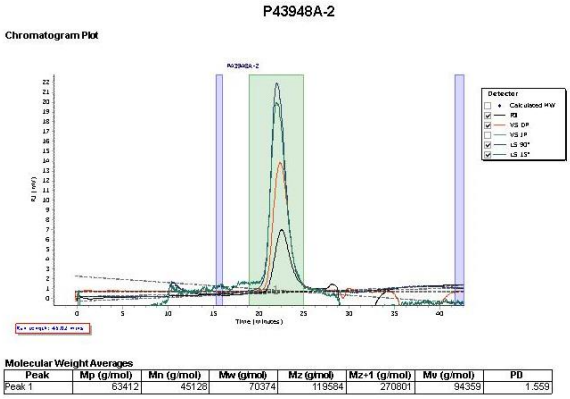
CO2- responsive Polymer Materials

Cloudiness appears at around 90 ^{o}C and it becomes more intense.

^{1}H-NMR Spectrum of the random copolymer



SEC of the random copolymer:



Molecular Weight Averages

Peak	Mp (g/mol)	Mn (g/mol)	Mw (g/mol)	Mz (g/mol)	Mz+1 (g/mol)	Mv (g/mol)	PD
Peak 1	63412	45128	70374	119584	270801	94359	1.559