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 #: **P43953-DEGMEOMA-DMAEMA-b-PEG-DEGMEOMA-DMAEMA**

Structure:
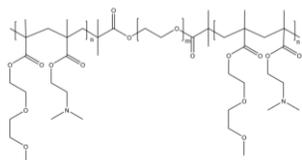
Composition:

$Mn \times 10^3$ PEG Block	$Mn \times 10^3$ total	Mw/Mn
20.0	74.0	2.0`
PDEG-MEOMA(119)-co-DMAEMA(24)-b-PEO(455)-b-PDEG-MEOMA(119)-DMAEMA(24)		
Mn: 22,500-4,500-b-20,000-b-22,500-b-4,500		

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 gives coludy solution, after heating solution to about 60 ºC   By bubbling CO_2, it gives clear solution immediately.

CO2- responsive Polymer Materials
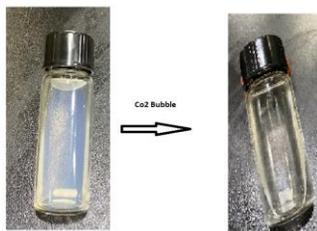
^{1}H-NMR Spectrum of the random copolymer:
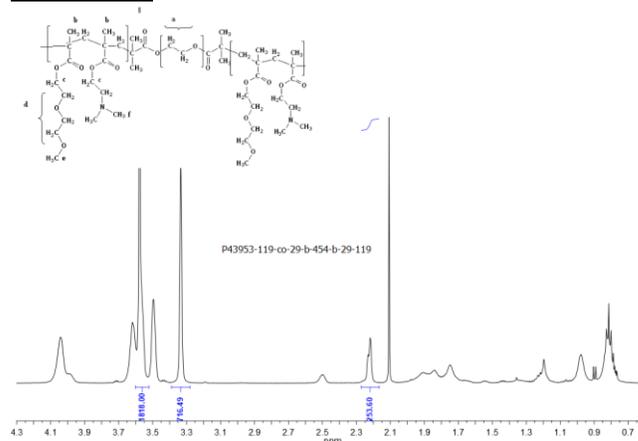
SEC of PEG dibromo Macroinitiator used:

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	31083	19683	25468	31349	39544	29395	1.294