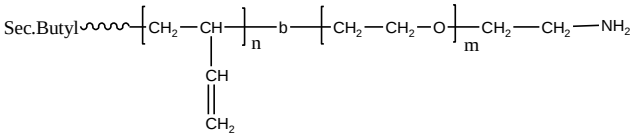
Sample Name: **Amino end functionalized Poly(butadiene-b-ethylene oxide)**

Sample #: **P10951A-BdEONH2**
(poly butadiene block rich in 1,2 microstructure)

Structure of 1,2-rich microstructure:



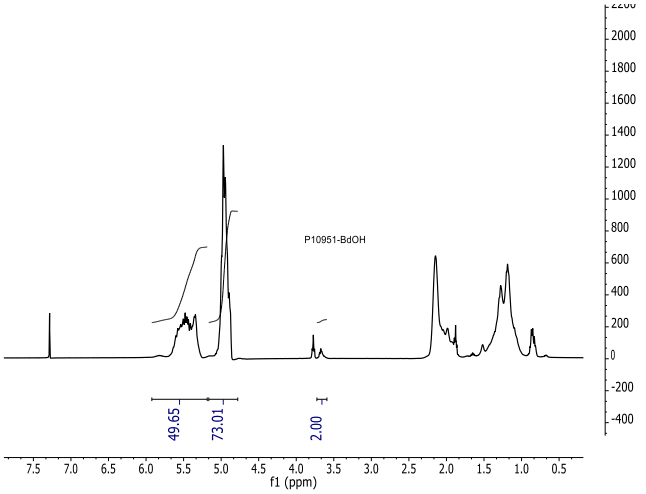
Composition:

Mn x 10^3 Bd-b-EO	Mw/Mn (PDI)	% 1,2 addition Butadiene
2.2-b-1.3	1.09	95

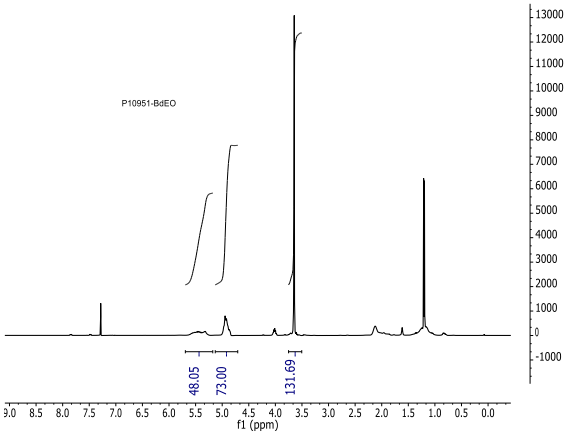
Synthesis Procedure:
The polymer was synthesized by anionic polymerization process.

Characterization:
The polymer was synthesized by ^{1}H NMR and SEC
Titration: the degree of functionality was confirmed by titration with $HClO_4$ using crystal violet as the indicator.

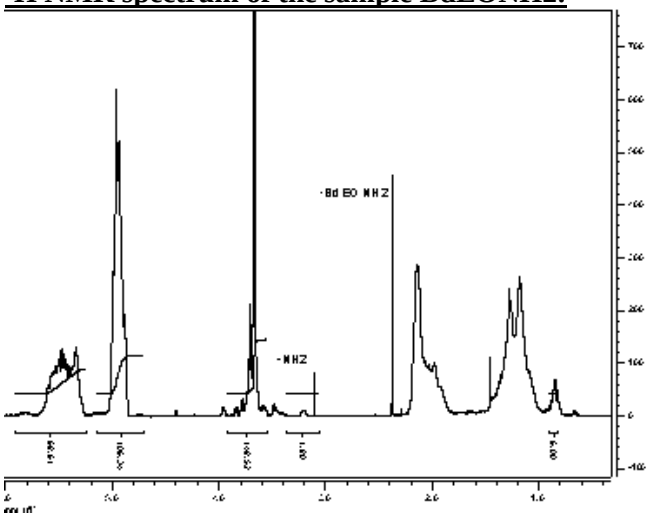
^{1}H NMR spectrum of the sample BdOH terminated:



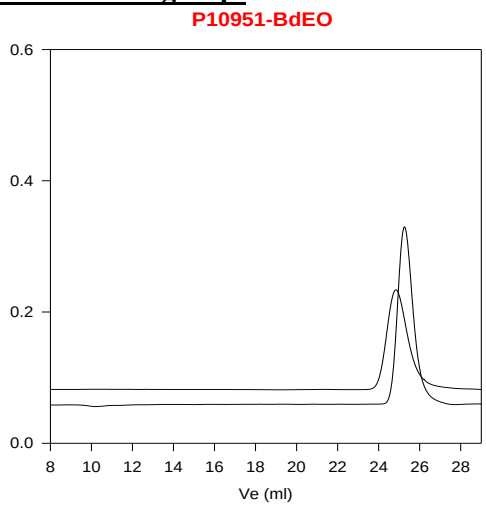
^{1}H NMR spectrum of the sample BdEO terminated:



^{1}H NMR spectrum of the sample BdEONH2:



SEC profile of the BDEO before converting to NH2 end functional group:



Size exclusion chromatography of poly(butadiene-b-ethylene oxide):
—— 1,2 polybutadiene M_n=2200, M_w=2300, PI=1.05
—— Block Copolymer PBd(2200)-b-PEO(1500), PI=1.09
Composition from H NMR

Thermal analysis of the sample :

Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of 10°C/min.The midpoint of the slope change of the heat flow plot of the second heating scan was considered as the glass transition temperature (T_g).

Thermal analysis results at a glance:

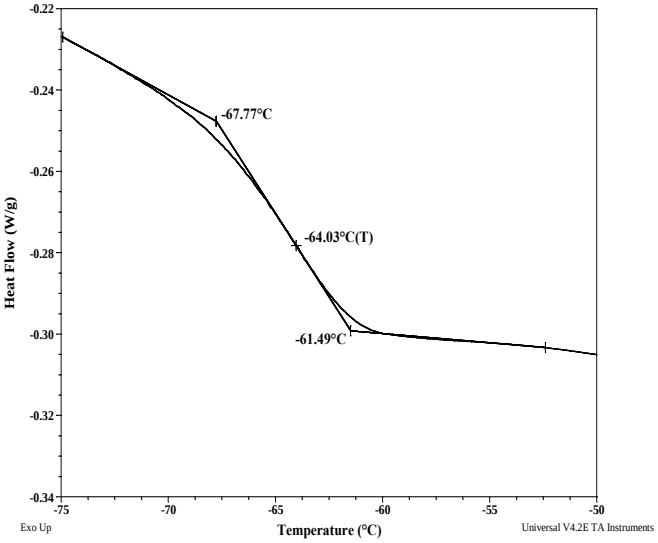
For Bd block:
T_g: -31°C

For PEO block:	
T_g: -64°C	T_m: 48°C

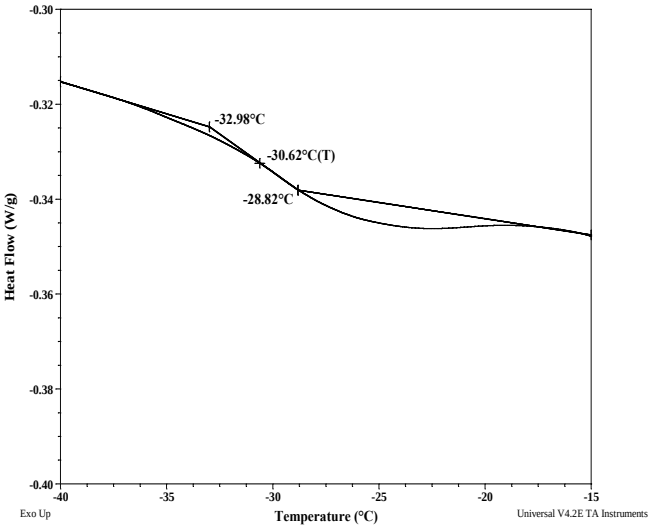
Melting and crystallization curve for the sample:

The melting temperature (T_m) was taken as the maximum of the endothermic peak where as the crystallization temperature (T_c) was considered as the minimum of the exothermic peak.

Thermogram for PEO block:



Thermogram for PBd block:



Melting curve for PEO block: