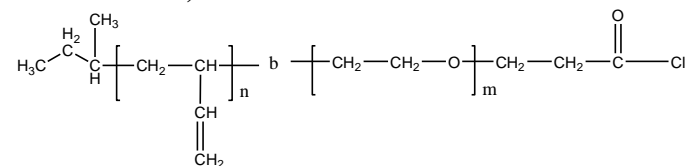


Sample Name: Mono carboxy Chloride end functionalized Poly(butadiene-b-ethylene oxide)

Sample #: P41252C-BdEO-COCl
(poly butadiene block rich in 1,2 microstructure)

Structure of 1,2-rich microstructure:



Composition:

Mn x 10 ³ Bd-b-EO-Biotin	Mw/Mn (PDI)	% 1,2 addition Butadiene
1.9-b-0.9	1.09	
Functionality	>99%	
	±10%	

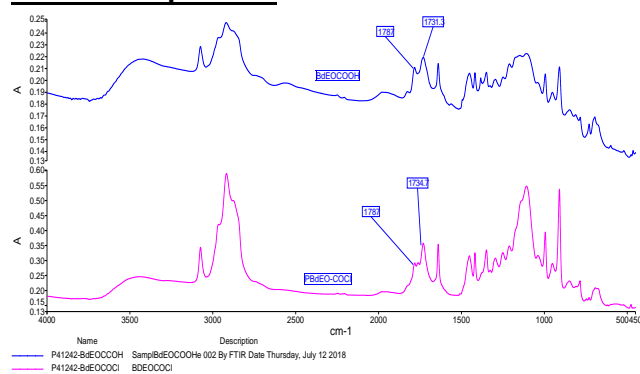
Synthesis Procedure:

Poly(butadiene(1,4 addition or 1,2 addition)-b-ethylene oxide) can be prepared by the different routes as reported in the literature. The polymerization was Based on BDEO-COOH starting material.

Characterization:

The product was characterized by size exclusion chromatography (SEC), ¹HNMR spectroscopy and FTIR.

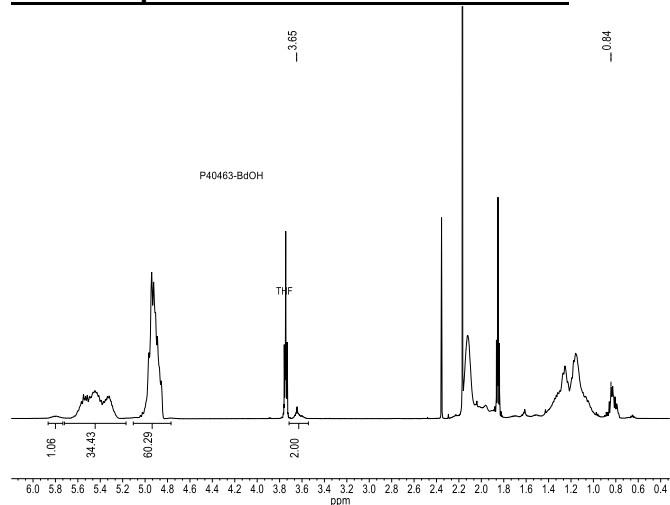
FTIR of the product:



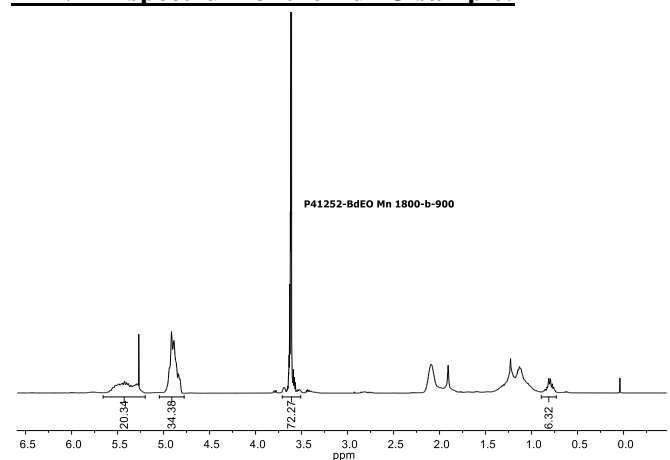
Characteristics:

1. tBu ester at 1367cm-1 disappear to COOH

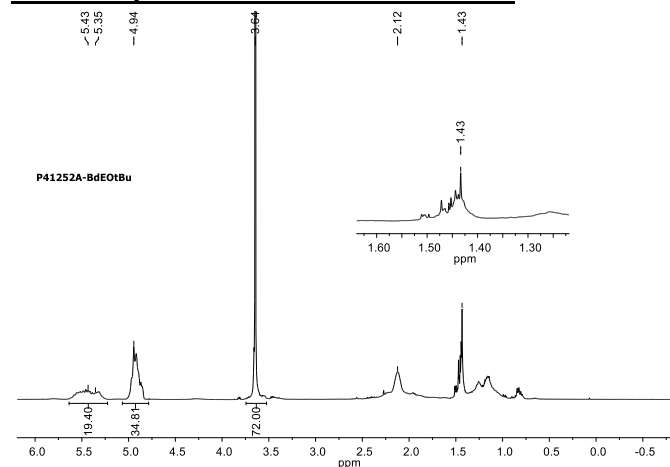
¹H NMR spectrum of the BdOH terminated:



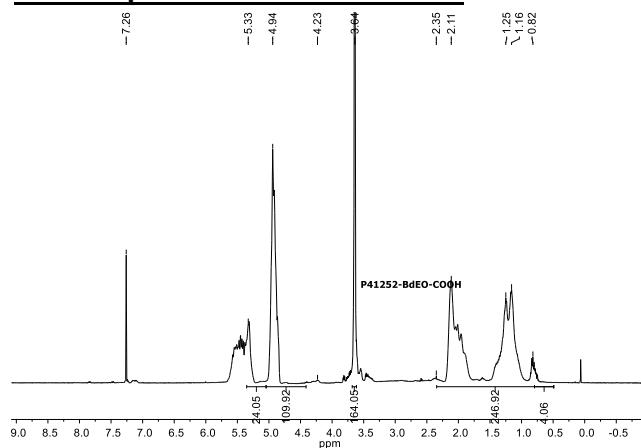
¹H NMR spectrum of the BdEO sample:



¹H NMR spectrum of BDEO-tBuA ester:

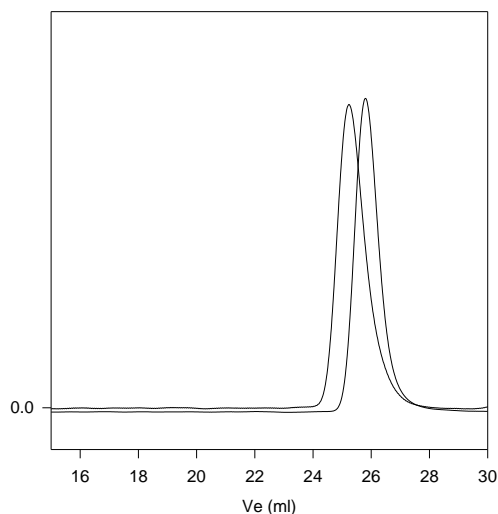


¹HNMR spectrum of BDEO-COOH:



SEC profile of the BdEO Sample:

P41252-BdEO

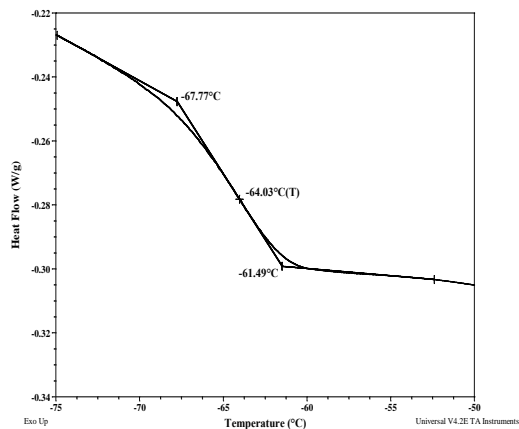


Size exclusion chromatography of poly(butadiene-b-ethylene oxide):

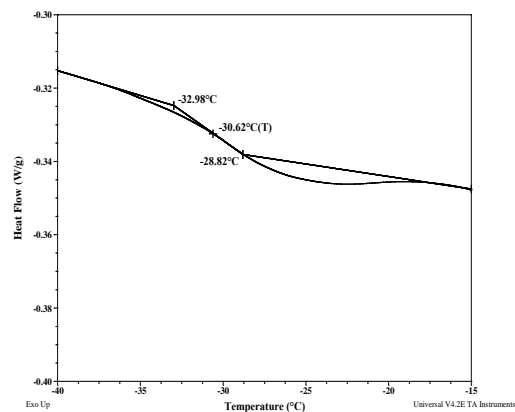
— OH terminated 1,2 polybutadiene $M_n=1900$, $M_w=2000$, $PI=1.09$

— Block Copolymer PBd(1900)-b-PEO(900), $PI=1.09$
(Chemical composition From ¹HNMR)

Thermogram for PEO block:



Thermogram for PBd block:



Thermal analysis results at a glance

For Bd block		
T_g : -31°C		
For PEO block		
T_g : -64°C	T_m : 48°C	T_c : Not found

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.

Melting curve for PEO block:

