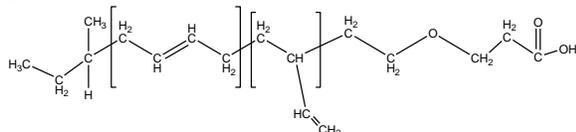


Sample Name: Poly(1,2-butadiene)-b-poly(ethylene oxide), ω -carboxy-terminated

Sample #: P43821-BdEOCOOH

Structure:



Composition:

$M_n \times 10^3$ (g/mol) [PBd- <i>b</i> -PEO]	M_w/M_n	Polybutadiene: 1,2-addition
0.65- <i>b</i> -0.35	1.07	89 %
DP of each Block: PBd(12)- <i>b</i> -EO(8)		

Thermal properties of PBd-*b*-PEO:

Glass transition temperature (T_g):	-21.5 °C
Melting point (T_m):	38 °C

Thermal properties of PBdEO-COOH:

Glass transition temperature (T_g):	-32.5 °C
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Synthesis procedure:

The polymer was synthesized by anionic process. Lot#P41807C-BDEO(12)-*b*-(8) was used to convert terminal group to propionic acid.

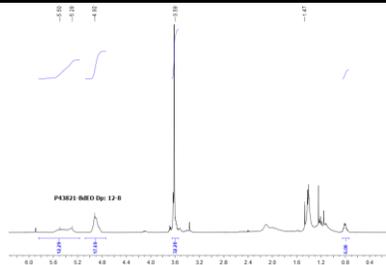
Characterization:

The product was characterized by size exclusion chromatography (SEC) and ^1H NMR.

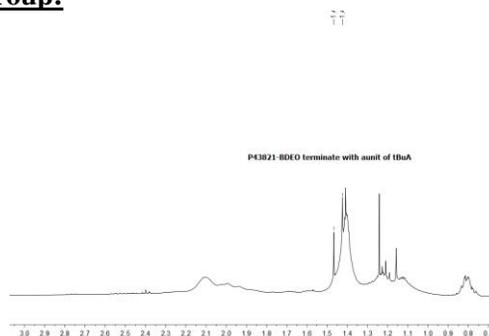
Solubility:

The poly(butadiene-*block*-ethylene oxide) is soluble in THF, chloroform, toluene. Solubility in hexanes, methanol, ethanol, and water depends on the composition of the diblock copolymer.

^1H NMR spectrum of PBd-*b*-PEO in CDCl_3 :

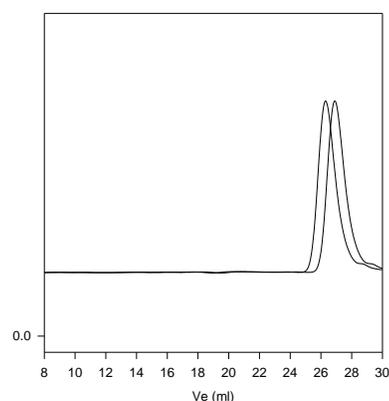


^1H NMR of the polymer with tert.butyl ester group:



SEC profile of the BdEO sample:

P43821-Bd-*b*-EO



Size Exclusion Chromatogram of Polybutadiene-*b*-EO
 — Polybutadiene: $M_n=650$, $M_w=700$, $M_w/M_n=1.07$
 Mn : Bd-*b*-EO 650-*b*-350 Mw/Mn 1.07

Hydrolysis of Ester tert butyl to COOH was monitored by FTIR.

FTIR spectrum of the Sample:

Disappearance of absorbance at 1369 cm^{-1}

