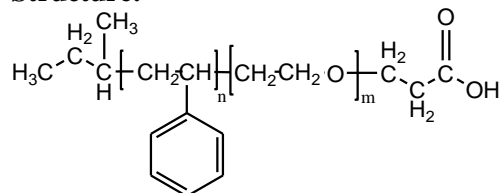


Sample Name: Poly(styrene)-b-poly (ethylene oxide), ω -carboxy-terminated

Sample #: P41551-SEOCOOH

Structure:



Composition:

Mn x 10 ³ S-b-EO	PDI
1.5-2.5	1.08

Synthesis Procedure:

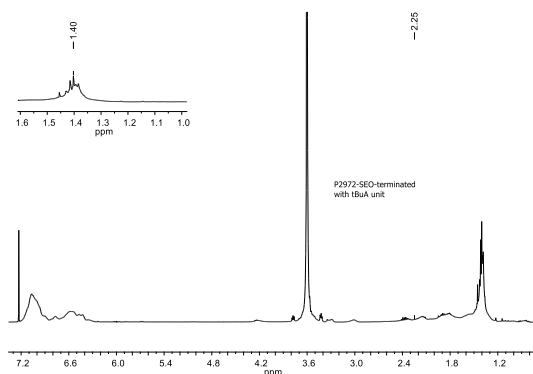
Poly(styrene-b-ethylene oxide) diblock copolymer is prepared by living anionic polymerization. tBuA end terminated polymer hydrolyzed in THf with Hcl.

Characterization:

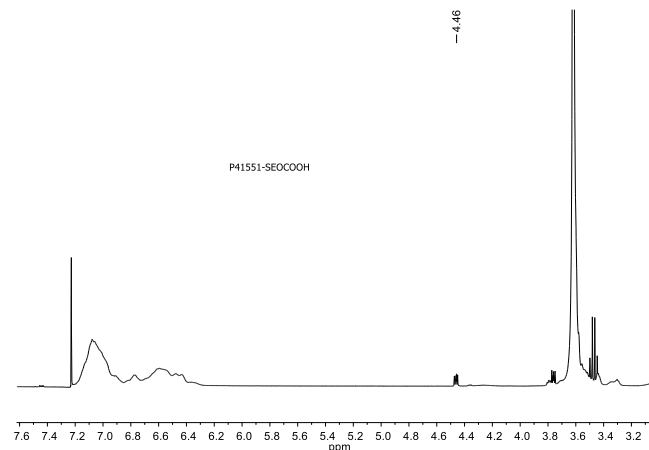
The molecular weight and polydispersity index (PDI) of the block copolymer are characterized by size exclusion chromatography (SEC). The composition of the block copolymer was calculated from ¹H-NMR by comparing the peak area of the phenyl polystyrene protons between 6.4 to 7.2 ppm and the ethylene oxide protons at 3.65 ppm.

Solubility: The polymer is soluble in THF (at 35 °C), CHCl₃, benzene, toluene, dioxane. Low molecular weight SEO with high contents of the polyethylene oxide block can also be solubilized in methanol and water.

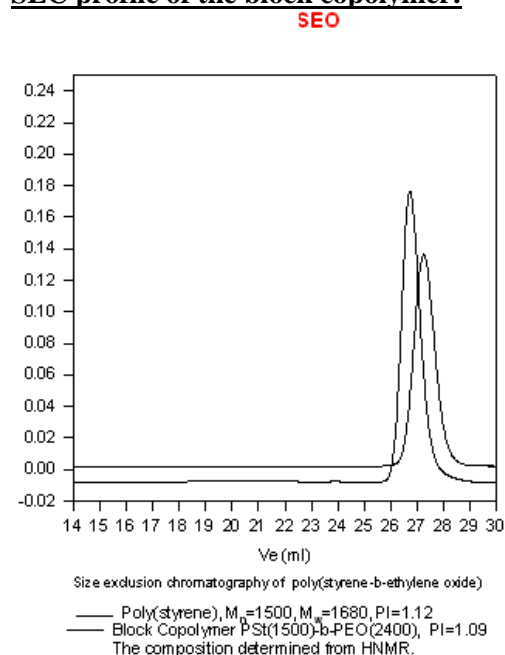
HNMR of tBuA end terminated polymer:



¹H NMR spectrum of the sample:



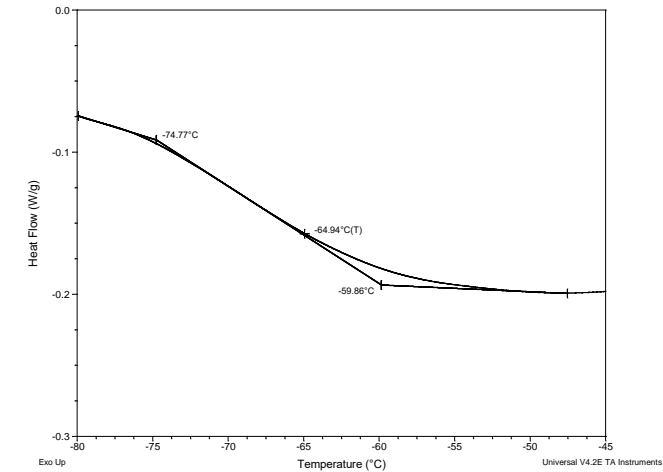
SEC profile of the block copolymer:



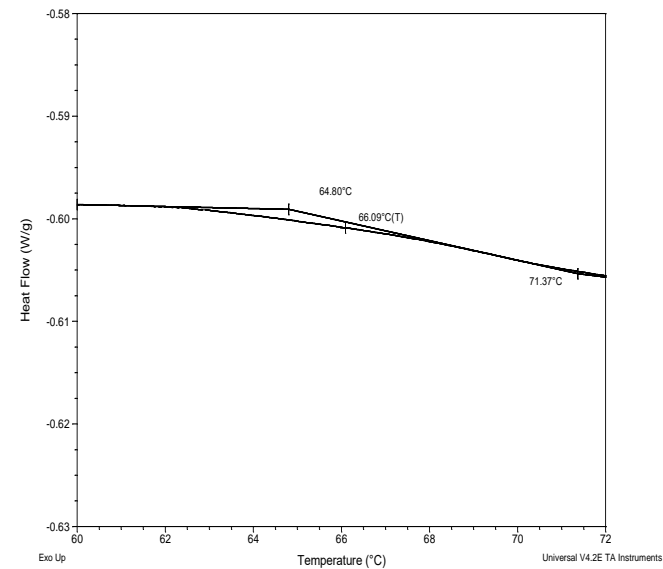
Thermal analysis of the sample #41551-SEOCOOH
 Thermal analysis of the samples was carried out using a differential scanning calorimeter (TA Q100) at a heating rate of 15°C/min. The inflection glass transition temperature (T_g) has been considered..

Thermogram for the sample:

For PEO block:



For PS block



Thermal analysis results at a glance

For PS block T_g : 66°C		
For PEO block		
T_g : -65°C	T_m : 46°C	T_c : -28°C

Melting and crystallization curve for the PEO block

The peak melting temperature (T_m) was obtained on heating where as cooling of sample resulted the peak crystallization temperature (T_c).

